

<http://researchcommons.waikato.ac.nz/>

Research Commons at the University of Waikato

Copyright Statement:

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

The thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- Any use you make of these documents or images must be for research or private study purposes only, and you may not make them available to any other person.
- Authors control the copyright of their thesis. You will recognise the author's right to be identified as the author of the thesis, and due acknowledgement will be made to the author where appropriate.
- You will obtain the author's permission before publishing any material from the thesis.

The Wellbeing and Social Connectedness of Older People in the Small Island Developing State (SIDS) of Maldives

A thesis
submitted in fulfilment
of the requirements for the degree
of
Doctor of Philosophy in Demography
at
The University of Waikato
by
Sheena Moosa



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

2016

ABSTRACT

Older people in small island developing states (SIDS) live within the context of a distinctive set of circumstances in terms of the unique geospatial characteristics of island nations, the typically small size and dispersed nature of populations, new and emerging environmental vulnerabilities, and associated threats to economic development. Such characteristics present distinctive challenges to the wellbeing of the increasing number of older people in such countries. In seeking to gain a better understanding of these challenges, this research examines the nature of the determinants of wellbeing for older people in SIDS through a case study of ageing and wellbeing in Maldives. Wellbeing is conceptualised as being constituted through success in critical life domains in a multidimensional model that includes the socio-cultural, geo-spatial and economic living environments of older people in Maldives. A capabilities approach to understanding wellbeing taking into account of the opportunities for older people to live a valued life - ‘to do and to be what they have reason to value’ – is adopted, and this informs the examination of older people’s experiences in the life domains of health, social connectedness, economic status, access to goods and services, and ability to conform with social norms and values. A survey instrument was developed in consultation with key individuals in the health and social service sector, along with a sample of older people themselves, and this was used to interview 393 older people (65 + years). The findings support the novel conceptualisation of the five life domains specific to this SIDS context. The most important determinants were health and social connectedness, each having a large impact on wellbeing, while economic status, ability to conform with social values and norms, and access to goods and services had small but significant correlations. The large contribution of social connectedness and the centrality of family in social connectedness points to the importance of collectivist social arrangements in Maldives, despite the geo-spatial challenges confronting a widely dispersed population. This approach to conceptualising wellbeing, and the indicators and measures that were developed provide a basis for further research and policy that extends beyond Maldives to other SIDS, and to international development partners.

ACKNOWLEDGEMENTS

This journey has been challenging, but fulfilling. The successful completion of this thesis was possible with the support of several people.

My heartfelt gratitude to Professor Peggy Koopman-Boyden, who agreed to supervise my doctorate when I reached out to her from Maldives. Her enthusiasm to assist and guide me in my research was an inspiration to me, as I embarked on this work. This research would not have been possible without her direction which extended my mind into the world of social science research and scholarship. Her vast experience, engagement and interest in my research topic was instrumental in successful completion of this thesis. Her unwavering enthusiasm despite her busy schedule encouraged me along the path. Most of all, her style of guidance enabled me to develop my academic skills and grow as a researcher.

I extend my sincere gratitude to Dr Patrick Barrett, who took on the role of Chief Supervisor at a very late stage in my research. His interest in my thesis and enthusiasm to extend the quality of my work encouraged me to further develop it. I also sincerely thank Professor Natalie Jackson for her support as my Chief Supervisor during a large part of my research.

I am grateful for the participants of this research, the stakeholder organisations and the older people of Maldives, who welcomed me into their lives and provided information for this study. Several of my friends and former colleagues deserve appreciation for their support in multiple ways in facilitating the ground work of the research in Maldives.

The support of my husband, Nasheed, has been paramount as I embarked on this journey with my daughter Ishmau by my side; they have been a continuous source of encouragement. Their love and unwavering support gave me the courage to see this work through. My sister, Lucia and her family in New Zealand provided the sense of my extended family and Zaan, my little nephew, was a wonderful distraction whenever I needed one. My love and gratitude to my family.

Finally, I dedicate this work to my parents whose life circumstances inspired me to research this topic.

TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGEMENTS	v
TABLE OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xiii
LIST OF ABBREVIATIONS	xiv
CHAPTER 1: INTRODUCTION	1
1.1 Wellbeing in the developmental context of Small Island Developing States	4
1.2 Significance of the research	6
1.3 Theoretical approach	7
1.4 Structure of the thesis	8
CHAPTER 2: RESEARCH CONTEXT	10
2.1 Small Island Developing States	10
2.1.1 <i>Challenges of population ageing for SIDS</i>	14
2.2 Maldives	18
2.2.1 <i>Population ageing in Maldives</i>	20
2.2.2 <i>Life circumstances of older people 65+ years in Maldives</i>	23
2.2.3 <i>Existing public policies for older people in Maldives</i>	32
2.3 Summary.....	37
CHAPTER 3: CONCEPTUALISING WELLBEING OF OLDER PEOPLE IN SMALL ISLAND DEVELOPING STATES (SIDS)...	38
3.1 Perspectives on wellbeing and ageing	38
3.1.1 <i>Theories of wellbeing</i>	38
3.1.2 <i>Theories of ageing and wellbeing</i>	46
3.2 Measurement of the wellbeing of older people	51
3.2.1 <i>Subjective wellbeing</i>	51
3.2.2 <i>Measuring wellbeing through life domains</i>	52
3.3 Key life domains affecting the wellbeing of older people	53
3.3.1 <i>Health</i>	56
3.3.2 <i>Social connectedness</i>	57
3.3.3 <i>Economic status</i>	62
3.3.4 <i>Living arrangements</i>	65
3.3.5 <i>Summary of the review of research on wellbeing and ageing</i> ...	66
3.4 Theoretical approach for the current research	68
3.5 Conceptual model of wellbeing of older people in SIDS	69
3.6 Hypotheses	72
3.7 Summary	75

CHAPTER 4: RESEARCH METHODS	77
4.1 Research paradigm	77
4.2 Methodological approach	78
4.3 Verifying concepts and developing indicators	81
4.3.1 <i>Stakeholder consultations</i>	81
4.4 Operationalising the conceptual model and indicators	89
4.4.1 <i>Wellbeing</i>	90
4.4.2 <i>Health</i>	91
4.4.3 <i>Social connectedness</i>	93
4.4.4 <i>Economic status</i>	95
4.4.5 <i>Access to goods and services</i>	96
4.4.6 <i>Conformity to social values and norms</i>	98
4.5 Survey	100
4.6.1 <i>Survey instrument</i>	100
4.6.2 <i>Sampling and recruiting participants</i>	101
4.6.3 <i>Conducting the interviews</i>	103
4.6 Data management and analysis	105
4.7 Ethical considerations	106
4.8 Summary	106
CHAPTER 5: SUMMARY INDICATORS OF WELLBEING OF OLDER PEOPLE IN MALDIVES	107
5.1 Characteristics of the sample	107
5.2 Wellbeing	113
5.3 Life domain indicators	114
5.3.1 <i>Health</i>	115
5.3.2 <i>Social connectedness</i>	117
5.3.3 <i>Economic status</i>	130
5.3.4 <i>Access to goods and services</i>	131
5.3.5 <i>Conformity to social values and norms</i>	136
5.4 Summary	141
CHAPTER 6: RELATIONSHIPS BETWEEN LIFE DOMAINS AND WELLBEING: STATISTICAL PERSPECTIVE	144
6.1 Correlations of the life domains with wellbeing	144
6.1.1 <i>Significance and direction of the correlations</i>	145
6.1.2 <i>Size of the correlations</i>	146
6.2 Regression analysis	147
6.2.1 <i>Subjective measures of life domains as predictors of wellbeing ..</i>	147
6.2.2 <i>Objective measures of life domains as predictors of wellbeing ...</i>	150
6.3 Social connectedness and wellbeing	153
6.4 Demographic and geo-spatial differences	156
6.6 Summary of findings	159

CHAPTER 7: DISCUSSION	162
7.1 Novel conceptualisation of the wellbeing of older people specific to SIDS	162
7.1.1 <i>Methodological aspects</i>	164
7.1.2 <i>Summary</i>	165
7.2 Characteristics of the life domains that impact the wellbeing of older people in a SIDS context	166
7.2.1 <i>Health</i>	168
7.2.2 <i>Economic status</i>	170
7.2.3 <i>Access to goods and services</i>	171
7.2.4 <i>Conformity to social values and norms</i>	172
7.2.5 <i>Summary</i>	173
7.3 Characteristics of social connectedness that impact wellbeing....	174
7.3.1 <i>The role of family in social connectedness and wellbeing</i>	177
7.3.2 <i>Summary</i>	180
7.4 Differences in wellbeing of the older people across the islands of Maldives	181
7.4.1 <i>Effects of geo-spatial characteristics</i>	181
7.4.2 <i>Effects of socio-cultural characteristics</i>	182
7.4.3 <i>Gender differences in wellbeing</i>	184
7.4.4 <i>Summary</i>	186
7.5 Relevance of the findings for public policy in Maldives	186
7.6 Summary of discussion	188
CHAPTER 8: CONCLUSION	191
8.1 Research focus and methods	191
8.2 Key findings	193
8.3 Contributions of the research	194
8.3.1 <i>Contribution to knowledge and theory</i>	194
8.3.2 <i>Contributions to methods</i>	195
8.3.3 <i>Contributions to policy development in Maldives and SIDS</i>	196
8.3.4 <i>Indicators for monitoring the wellbeing of older people in SIDS</i>	201
8.4 Strengths and limitations	203
8.5 Future research	205
8.6 Conclusion	206
REFERENCES	207
APPENDICES	236

LIST OF TABLES

Table 2.1: Small Island Developing States and their development indicators	12
Table 2.2: Dependency ratio of the population in selected SIDS 2000-2050	15
Table 2.3: Living arrangement of population over 65 years in Maldives, 2006 (numbers)	26
Table 2.4: Highest educational attainment in Maldives 2006, by age group(%)	30
Table 3.1: Brief overview of theoretical perspectives on wellbeing	39
Table 3.2: Overview of the theoretical perspectives on ageing and their wellbeing	47
Table 3.3: Life domains covered in selected research related to the wellbeing of older people	55
Table 4.1: Stakeholders and number of participants by organisation	82
Table 4.2: Indicators for monitoring the wellbeing of older people identified by the stakeholders in Maldives	88
Table 4.3: Indicators of wellbeing and life domains operationalised in the research	89
Table 4.4: Subjective indicator measures of wellbeing and life domains ..	90
Table 4.5: Item scores for the variables of the social connectedness scale	95
Table 4.6: Item scores for access to goods and services scale	98
Table 4.7: Item scores for social values and norms scale	100
Table 4.8: Sampling island clusters and estimated sample size for each cluster	101
Table 4.9: Distribution of the sample and response rate	103
Table 5.1: Representativeness of the sample compared to the total population of 65+ years, 2006, Maldives (N=393)	108
Table 5.2: Current marital status and number of marriages during the life time, by gender (N=393)	109
Table 5.3: Number of children by gender (N=393)	109
Table 5.4: Living arrangements by gender and island cluster (N=393)	110
Table 5.5: Ownership of house by gender and island cluster (N=393)	110
Table 5.6: Educational attainment by gender and island cluster (N=393) ..	111
Table 5.7: Sources of income by gender and island cluster (N=390)	112
Table 5.8: Engagement in work by gender and island cluster (N=390)	113
Table 5.9: Levels of wellbeing by gender and island cluster (N=391)	114
Table 5.10: Satisfaction with health status by gender and island cluster (N=393)	115
Table 5.11: Level of health by gender and island cluster (N=393)	116
Table 5.12: Physical and mental health status by gender and island cluster	117
Table 5.13: Satisfaction with overall social connectedness by gender and island cluster (N=391)	118

Table 5.14: Satisfaction with social connectedness with family by gender and island cluster (N=391)	119
Table 5.15: Satisfaction with social connectedness with friends by gender and island cluster (N=391)	119
Table 5.16: Level of overall social connectedness by gender and island cluster (N=393)	120
Table 5.17: Network size of family and friends by gender and island cluster (N=392)	121
Table 5.18: Frequency of contact with family and friends by gender and island cluster (N=392)	123
Table 5.19: Type of contact with family and friends by gender and island cluster (N=392)	124
Table 5.20: Meeting place with family and friends (N=393)	125
Table 5.21: Engagement in social activity by gender and island cluster ...	127
Table 5.22: Sources of social support by gender and island cluster (N=392)	128
Table 5.23: Reciprocity of social support by gender and island cluster (N=391)	129
Table 5.24: Satisfaction with economic status by gender and island cluster (N=390)	130
Table 5.25: Economic standard of living by gender and island cluster (N=391)	131
Table 5.26: Satisfaction with access to goods and services by gender and island cluster (N=392)	132
Table 5.27: Level of access to goods and services by gender and island cluster (N=393)	132
Table 5.28: Affordability of basic consumer goods	133
Table 5.29: Respondents able to afford basic goods without difficulty by gender and island cluster	133
Table 5.30: Utilisation of basic services	134
Table 5.31: Access to health care by gender and island cluster (N=391) ...	134
Table 5.32: Access to communication services by gender and island cluster	135
Table 5.33: Access to transport by age group, gender and island cluster ...	136
Table 5.34: Satisfaction with conformity to social values and norms by gender and island cluster (N=391)	137
Table 5.35: Level of conformity to social values and norms by gender and island cluster (N=392)	138
Table 5.36: Harmony values of the community by gender and island cluster	139
Table 5.37: Embeddedness values of the community by gender and island cluster	140
Table 6.1: Pearson's correlation statistics for subjective measures of the five life domains and wellbeing	145
Table 6.2: Pearson's correlation statistics for objective measures of the five life domains and wellbeing	145
Table 6.3: Descriptive statistics of wellbeing and the variables (subjective measures) used in the linear regression (N=385)	148

Table 6.4: Summary statistics for the model of wellbeing with subjective variables of the life domains (model 2)	148
Table 6.5: Level of the contributions of the predictor variables (subjective measures) of the life domains to wellbeing (model 2)	149
Table 6.6: Descriptive statistics of wellbeing and the variables (objective measures) used in the linear regression (N=388)	150
Table 6.7: Summary statistics for the model of wellbeing with objective variables of the life domains (model 3)	151
Table 6.8: Level of the contributions of the predictor variables (objective measures) of the life domains to wellbeing (model 3)	152
Table 6.9: Pearson's correlation statistics for wellbeing and social connectedness by overall, family, and friends	154
Table 6.10: Pearson's Correlations statistics for variables that determine subjective level of overall social connectedness and wellbeing	155
Table 6.11: Chi-square test statistics for wellbeing by gender and geographic isolation of the islands	156
Table 6.12: Chi-square test statistics for the differences in the life domains by gender	157
Table 6.13: Chi-square test statistics for the differences in life domains by geographic isolation of the islands	158
Table 8.1: Suggested indicators for monitoring wellbeing of older people in SIDS	202
Table G.1: Summary of exploratory factor analysis for the social connectedness scale (N=386)	278
Table G.2: Reliability statistics: Social engagement subscale (Initial)	279
Table G.3: Reliability statistics: Friends network subscale (Initial)	280
Table G.4: Reliability statistics: Family network subscale (Initial)	280
Table G.5: Summary of exploratory analysis results for revised social connectedness question scale (N=386)	281
Table G.6: Reliability statistics: Social engagement subscale (final)	282
Table G.7: Reliability statistics: Friends network subscale (final)	283
Table G.8: Reliability statistics: Family network subscale (final)	283
Table G.9: Summary of exploratory analysis results for social connectedness scale items (N=391)	284
Table G.10: Reliability statistics: social values and norms scale	284
Table G.11: Summary of exploratory analysis results for access to goods and services scale items (N=385)	285
Table G.12: Summary of exploratory analysis results for revised access to goods and services scale items (N=386)	286
Table G.13: Reliability statistics: Access to communication services subscale (final)	287
Table G.14: Reliability statistics: Access to basic goods subscale (final) ..	287

LIST OF FIGURES

Figure 2.1: Proportion of older people 65+ years in selected SIDS (Estimated medium variant 2000 – 2050)	13
Figure 2.2: Distribution of total population of Maldives by age group, 1985-2006 (%)	21
Figure 2.3: Projections for children 0-14 years and people over 65 years in Maldives, 1985-2045 (numbers)	22
Figure 2.4: Population 65+ years in Maldives by gender, 1985-2025 (numbers)	22
Figure 2.5: Population over 65 years, in 5yr age groups, Maldives, 2006-2025 (numbers)	23
Figure 2.6: Maldives population over 65years (numbers) by locality, 2006	24
Figure 3.1: Conceptual model of the wellbeing of older people in SIDS context	70
Figure 6.1: Correlations of the subjective and objective measures of the wellbeing of older people in Maldives and the statistical association of gender and geographic isolation of the islands with wellbeing	160

LIST OF ABBREVIATIONS

GDP – Gross Development Product

HDI – Human Development Index

LDC – Least Developed Countries

SIDS – Small Island Developing States

QOL – Quality of Life

UN-ESCAP – United Nations Economic and Social Commission for
Asia and the Pacific

UN-OHRLLS – United Nations Office of the High Representative for
Least Developed Countries, Landlocked Developing Countries
and Small Island Developing States

WHO – World Health Organisation

WHO-QOL – World Health Organisation Quality of Life tool

WHO-QOLOLD - World Health Organisation Quality of Life tool for Old People.

CHAPTER 1: INTRODUCTION

Population ageing is an inevitable result of social and economic development, an indication of success, but it also leads to new challenges at both the global and at country levels (United Nations, 2002a; 2013a). Perhaps because of the association of ageing with development, research on aspects of population ageing has largely been based on industrialised country contexts, and limited attention has been given to understanding the implications of population ageing in developing countries, which includes Small Island Developing States (SIDS). Issues of population ageing and the wellbeing of older people in SIDS in particular requires focussed research given their distinctive characteristics and important differences when compared with industrialised or larger developing countries. This study seeks to understand these characteristics by examining the determinants of wellbeing for older people in SIDS through a case study of ageing and wellbeing in Maldives. This initial chapter introduces the research and outlines the key questions and their significance. The developmental context of SIDS is provided and the broad theoretical approach is introduced. An outline of the subsequent chapters is provided at the end of the chapter.

The distinctive characteristics of SIDS, being small and remote with economic and natural vulnerabilities, and with unique demographic and socio-cultural circumstances raises questions about the relevance and applicability of research that has been undertaken in other country contexts (United Nations, 2010a; United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS), 2013). If appropriate policies and practices are to be developed for older people in these countries, there is a need for a greater understanding of the characteristics of ageing populations in SIDS, and of the aspects of life that are important for wellbeing. Thus, the aim of this research is to contribute to the knowledge on wellbeing of older people within SIDS, furthering the understanding of the life circumstances that affect this growing group.

Population ageing is not confined to industrialised countries; numerical and structural ageing of the population are also occurring in developing countries, including SIDS (United Nations, 2010a, 2013c). The dynamics are typically understood as “the process whereby older individuals account for a proportionally larger share of the total population” (United Nations, 2010b, p. 1). They reflect what the United Nations (2010b) documents as reductions in fertility rates and improvements in life expectancy that are leading to population ageing in all countries. Globally, the population 60 years and above is the fastest growing age group, and the number of persons aged over 60 years is expected to triple from 737 million in 2009 to 2 billion by the year 2050 (United Nations, 2009). This absolute increase in the number of older people represents the ‘numerically ageing population’, and this leads to structural ageing of the population as a whole, commonly referred to as population ageing (Jackson, 2007).

The rate of population ageing today is accelerating at a faster pace in developing countries than in developed regions (United Nations, 2010b; 2013b). In 2009, 64 per cent of the world’s population over 65+ years lived in less developed regions and this is expected to increase to nearly 80 per cent in 2050 (United Nations, 2010b). In the SIDS of the Asia Pacific region, the older population is not only increasing numerically, but the rate of increase is accelerating, with the population aged 65+ years expected to reach 30 per cent in Singapore and 20 per cent in French Polynesia, Maldives and New Caledonia by the year 2050 (United Nations, 2011a). In other SIDS the process is slower, reaching about 10 per cent by 2050 (United Nations, 2011a). This increasing number of older people will have social, economic and political implications. It is expected to lead to a growing demand for long-term health care and social services, raising questions about the sustainability of systems of social protection and the need to ensure the participation of older people in society (United Nations, 2002b, 2007b, 2013b). However, at present there exists a significant gap in the understanding of this population trend and the determinants of the wellbeing of older people in SIDS.

Furthermore, the distinct socio-cultural, economic and geo-spatial context of SIDS calls for a specific focus, as noted in the *Research Agenda for 21st Century* in implementing the Madrid Plan (United Nations Programme on Ageing & International Association of Gerontology and Geriatrics, 2007). No research, however, had been undertaken in SIDS when the current research was initiated.

Where research into issues faced by older people in SIDS has been conducted, the focus has been on specific aspects associated with the demographic trends and the policy implications of these, such as living conditions or health (Martin, 1989; Rappa, 1999). Among SIDS, Singapore is the only country that has initiated research taking a holistic approach to ageing and wellbeing (Chan, Ofstedal, & Hermalin, 2002). By contrast, there are many studies on ageing and wellbeing in industrialised western countries and, to some extent, in the industrialised countries of Asia and the Pacific, including island countries such as New Zealand (Koopman-Boyden & Waldegrave, 2009) and Japan (Ogawa & Retherford, 1993). There is, therefore, a need to examine older people's wellbeing in SIDS and reflect on their similarities and differences with the experience of older people in industrialised or other developing countries.

More specifically, there is a need for a better understanding of the life circumstances and correlates of older people's wellbeing in SIDS, given that measures of wellbeing based on the experience of older people in industrialised contexts are expected to be inappropriate (Briguglio, 2003; United Nations, 2004). A stark example is the standard use of per capita Gross Domestic Product (GDP) as a measure of developmental status. A number of SIDS have shown consistent economic growth over the past two decades resulting in moderately high GDP, but they are not on track in achieving the Millennium Development Goals in the areas of health and nutrition, safe water and sanitation, and in reducing disparities within the country (United Nations, 2010a, 2014). Another example specific to older populations is that at the global level, it is widely assumed that as population ageing occurs, women will outnumber men, requiring a greater focus on policies and practices around ageing women (United Nations, 2002b, 2010b). However, the demographic situation in Maldives, Fiji, Samoa and several other SIDS, where the male to female ratio is more heavily weighted to men, suggests that this trend is not a universal phenomenon (Hayes, 2009; Ministry of Planning and National Development, 2008). Furthermore, in contrast to industrialised countries where the majority of older people live in urban centres the majority of older people in SIDS live in rural areas, (Hayes, 2009). These aspects, and others unique to SIDS, need consideration in research, policy and practice when addressing issues faced by older people.

The wellbeing of older people has been studied in various countries using multidimensional models. These models typically examine the inter-relationships between outcomes across a number of life domains such as health, income, family status, and social contact and support (Ferring et al., 2004; Gabriel & Bowling, 2004; Helliwell, 2003; Ryan & Deci, 2001). However, the variables examined in multidimensional models are based on the experience of older people in industrialised and/or very large countries which have very different socio-cultural, economic and geo-spatial contexts. As such, they do not capture important aspects of life in SIDS where socio-cultural and geo-spatial factors play an important part in the lives of people, especially older people. For instance, the societies of SIDS are traditionally collectivist and many remain so. This affects the attitudes and approaches towards social connectedness and the protection and wellbeing of older people.

1.1 Wellbeing in the developmental context of Small Island Developing States

The wellbeing of older people has not been a focus of developmental activities in SIDS, and little has been written on the topic. Nevertheless, perspectives on development have implications for the study of the wellbeing of older people in SIDS.

White (2009) notes that in developing country contexts, wellbeing is not achieved by individual action, but is profoundly shaped by the character of the wider environment which includes institutions, services, amenities and infrastructure. Institutions, access to services and amenities and the wider infrastructure are often weak in these countries (UN-OHRLLS, 2011; White, 2009; 2010). There is a clear link between ageing and development and a need for further examination of the experiences of older people within developmental contexts. Perspectives on development have historically focussed on what has been labelled the ‘third world’ with progress being towards a western concept of development (Escobar, 2011; Reyes, 2001). A dominant approach has described the process as one of modernisation and has emphasised dependency and interdependency (Goulet, 1995; Meier, 2001). Modernisation has been viewed as a natural process of development towards the situation of industrialised societies, with the goal of capital accumulation and economic growth (Escobar, 2011; Todaro & Smith,

2003; Tucker, 1996). Dependency and interdependency perspectives have viewed development in terms of power relationships between industrialised countries and developing countries (Todaro & Smith, 2003; Tucker, 1996) and the emergence of core-peripheral relationships which position developing countries as dependent on industrialised countries and international agencies for development (Reyes, 2001). While dependency perspectives have viewed development as being influenced primarily by external forces, neo-liberal perspectives which were dominant in the late twentieth century viewed development as an internal process. The neo-liberal perspective on development, based on a philosophy of the free market economy and a preference for the privatisation of public enterprises, has blamed government intervention for impeding development (Goulet, 1995; Meier, 2001; Todaro & Smith, 2003). Proponents of this view have argued that free markets were sufficient for growth, although with light-handed government intervention if necessary to facilitate the market dynamics, especially in least developed countries (Todaro & Smith, 2003).

While these development perspectives apply generally to developing countries, SIDS face particular vulnerabilities due to their narrow economic bases, limited product and market diversification and limited economies of scale (Division of Sustainable Development, 2014b; Vossenaar, 2004). Hence, the majority of the SIDS are categorised as being among the least developed countries (United Nations, 2014). The populations of SIDS continue to have significant unmet needs in terms of access to goods and services such as health, education, housing, food and nutrition, water, sanitation and energy (Division of Sustainable Development, 2014a), which are taken for granted in the industrialised countries. Given that most SIDS are heavily dependent on international trade and multilateral aid (Inama, 2004), dependency and interdependency perspectives continue to predominate.

Additionally, there is a wide gap in terms of access to services and the economic standard of living between urban and smaller rural islands in SIDS (Bourne & McGrowder, 2010; Rawlins, Simeon, Ramsdath, & Chadee, 2008). With development, SIDS are also experiencing transitions in the social institutions of family structure and socio-cultural practices. Households are becoming smaller and there is movement towards nuclear family arrangements (Ogan, 2005). These

can be expected to significantly affect older people living in the urban areas of SIDS as well as those living in isolated smaller islands. Past research in other developing countries indicates that for people living in rural areas, access to services is an important determinant of wellbeing (Zorondo-Rodríguez et al., 2014). Differences in the level of wellbeing among those living in urban and rural areas are, therefore, related to the availability of services and also the person-environment exchanges possible in the surrounding environment (Bird, McKay, & Shinyekwa, 2010; Phillips, Siu, Yeh, & Cheng, 2005; Wahl, Iwarsson & Oswald, 2012). This greater awareness of the significance of the environment in development perspectives draws attention to the need to develop theoretical perspectives on wellbeing in ageing populations that takes account of wider contextual characteristics.

1.2 Significance of the research

The motivation for this research is to contribute to the knowledge and understanding of the concepts and correlates of wellbeing that are unique in the context of SIDS. This research is expected not only to be relevant for the country in which the study is conducted, Maldives, but also to have wider significance for other SIDS.

This research will focus on the following questions:

1. What are the important determinants of wellbeing for older people in SIDS? Are there specific life circumstances that are unique to the SIDS context that affect wellbeing?
2. How important is social connectedness for the wellbeing of older people in SIDS where the culture is collectivist but the population is geo-spatially dispersed? Specifically, how important is the role of family in social connectedness in the SIDS context?
3. How does the isolation of the island community affect the wellbeing of older people given the developmental differences of the islands? Particularly, what socio-economic aspects in the wider environment of island living affect the wellbeing of older people?

Building on previous studies of wellbeing, this research brings a novel theoretical perspective to the examination of wellbeing in SIDS, one that bridges the disciplines of psychology, sociology, demography and developmental studies. It

develops a new framework for conceptualising wellbeing in a small island context that is undergoing a number of socio-economic, cultural and developmental transitions. Thus, the current research has the potential to offer a better understanding of the wellbeing of older people in the context of SIDS.

In addition, the research will provide a new method for assessing wellbeing in later life, one that can be adopted in other isolated older populations, specifically with potential application in other SIDS.

This research will also establish country-specific information on the indicators of wellbeing of older people¹ in Maldives. The intention is to provide baseline information that government, service providers and other stakeholders can use to inform their policies and programmes for enhancing the wellbeing of older people. The indicators used in this research will be able to monitor the wellbeing of older people over the medium to long term, and provide the basis for further research in other SIDS.

The objectives of the research are to:

1. Identify the correlates of wellbeing of older people (65+ years) in the socio-cultural and geo-spatial context of a SIDS, Maldives;
2. Determine the indicators and level of wellbeing of people aged 65+ years in Maldives, and specifically that of social connectedness;
3. Inform the development of policies to enhance the wellbeing of the older population in Maldives; and
4. Propose a set of indicators to monitor wellbeing in the population aged 65+ years in SIDS.

1.3 Theoretical approach

A multi-disciplinary approach, drawing on theories of wellbeing from psychological, sociological and economic perspectives, and integrating theories of

¹ There is no universal definition of old age. The World Health Organisation often identifies people 60+years as older populations (World Health Organization, 2012) while the World Population Prospectus 2010 uses 65+years in the indicators of population ageing (United Nations, 2011a). Research in developed countries often use the chronological age of 65+ years to refer to old people or the elderly while 60+ or even 50+ are used in research in developing countries (World Health Organisation, 2012). For the purpose of this research, older people refers to the chronological age of 65+ years, unless specified otherwise. The age of 65+ was selected based on the age of eligibility for the old-age pension and retirement age in the Maldives where the research is undertaken.

ageing and development, will be adopted in this research. This is necessary for the study of wellbeing in old age in SIDS as the existing theories and concepts of wellbeing are based on large industrialised country contexts, but these do not capture the different socio-cultural environment and unique vulnerabilities of SIDS. As noted earlier, indicators used at a global level do not capture the realities of life in SIDS, suggesting the need to adopt a context-specific approach.

In this research wellbeing will be viewed from the eudaimonic perspective that recognises the objective circumstances of people's lives, rather than the hedonic perspective which relies solely on subjective states. The wellbeing of older people will be conceptualised in the SIDS context taking a 'capabilities' approach set within ecological perspectives of ageing and development. The capabilities approach focuses on what the person can do and be, and the opportunities that are available to the person. The capabilities for wellbeing are conceptualised to arise out of several life domains. This approach allows for the development of unique indicators of wellbeing and measures relevant to the SIDS context.

1.4 Structure of the thesis

The thesis has eight chapters. Chapter 1 introduces the research topic, including the research questions and a broad outline of the theoretical approach adopted. The background to SIDS with their developmental perspectives and challenges to population ageing is described in Chapter 2. The context and the characteristics of the ageing population in Maldives are also described, together with existing public policies targeting older people. Chapter 3 explores the theories of wellbeing and ageing through a review of the literature, and describes the theoretical perspectives and conceptual model of wellbeing of older people in SIDS contexts as adopted in this research. An outline of the hypotheses to be tested in the research is provided at the end of this chapter. The research paradigm and methods are described in Chapter 4, with details of the stakeholder consultations and survey method, including the development of the research instrument, the measures for operationalising the conceptual model, and the management of data and the analysis.

The remaining chapters set out the research findings. The descriptive statistics on the status of wellbeing of older people in Maldives are presented in Chapter 5. The results of the statistical analysis of relationships within the conceptual model

of wellbeing and hypotheses testing are presented in Chapter 6. Chapter 7 discusses the findings in the Maldives / SIDS context, focusing on the research questions and followed by a discussion on the policy relevance to Maldives. The final chapter, Chapter 8, concludes the thesis by reviewing the research questions and theoretical perspectives, and summarises the research findings. The contribution of the research to knowledge, theory and methods, as well as to policy and practice specifically in Maldives, and to SIDS in general are also discussed. The limitations of the research and the scope for future research are discussed prior to concluding the thesis.

The Appendices include general information on SIDS and population ageing statistics, as well as geographic and developmental indicators of Maldives. In addition, information related to the sample survey, ethics approvals, the instrument used in stakeholder discussions and survey instrument are provided. Statistical tables related to factor analysis of the scales used in measurement of the indicators and the data dictionary relevant to the regression analysis are provided in the Appendices.

CHAPTER 2: RESEARCH CONTEXT

This chapter provides the background to the research context and discusses the characteristics of Small Island Developing States (SIDS) as a group of countries with unique challenges associated with population ageing. A detailed description of Maldives, the SIDS where the research is operationalised, is provided focusing on population ageing, the life circumstances of older people and an overview of public policies targeting the challenges for the wellbeing of older people in Maldives.

2.1 Small Island Developing States

Small Island Developing States generally constitute low lying islands located mostly in the tropics - the Caribbean, Pacific, Atlantic, Indian Ocean, Mediterranean and the South China Sea (United Nations, 1992; UN-OHRLLS, 2013). Land is limited, with the land to sea ratio being largely skewed in favour of the sea (Climate Change Secretariat, 2005). The small land area available is often further dispersed due to the archipelagic formation of micro atolls, while others have a single land mass with varied terrain. These geo-spatial characteristics result in large coastal areas, leaving these countries subject to the environmental threats of erosion and rising sea levels (Pelling & Uitto, 2001; UN-OHRLLS, 2013). The small land area available in SIDS creates competition for land use for social and economic purposes, limiting options for urban settlement and infrastructure (UN-OHRLLS, 2011).

The group of countries designated as SIDS, however, are not homogenous, but can be distinguished according to their vulnerabilities to environmental threats, the limited economic base and domestic markets, the combination of which presents challenges to sustainable development (United Nations, 1992; UN-OHRLLS, 2013). The first formal recognition of SIDS at a global level occurred in Agenda 21 adopted at the Earth Summit, the United Nations Conference on Environment and Development held at Rio de Janeiro in 1992 (Hein, 2004). Agenda 21 explicitly recognised the smallness and remoteness of these countries and gave special consideration to the challenges to sustainable development (United Nations, 1992). Although there is no specific definition of SIDS, the

United Nations classifies 38 member states and 14 territories as SIDS (Appendix A), based on their size, remoteness, vulnerability to external shocks, narrow resource base, exposure to global environmental challenges and natural disasters (UN-OHRLLS, 2013). The nature of the vulnerability of SIDS is, however, the subject of some debate given that a number of these countries have a high GDP per capita (see Table 2.1), and in the past only a few of them have shown poor macro-economic performance (Briguglio, 1995; Easterly & Kraay, 2000; United Nations, 2004, 2010a). But as Briguglio (2003) notes, this debate needs to be informed by an appreciation that indicators such as GDP per capita conceal the reality that the economies of SIDS are “vulnerable to forces outside their control” (p. 1615) due to the geo-spatial characteristics of the islands.

The United Nations (2010a) has noted that disparities within SIDS countries have increased over the past two decades and that SIDS economies continue to be volatile. Multiple global-scale crises affecting financial, food and fuel markets in recent years have had a significant impact on SIDS development, and have led to widening socio-economic disparities within them (United Nations, 2010a). Notably, those SIDS showing higher GDP growth face greater vulnerability in their sustained growth due to a high dependency on external markets. Furthermore, sustainable development remains a challenge for SIDS as the main source of income is from industries related to the natural environment such as tourism and fishing, with the exception of Singapore which has used its geographic position to become a central hub in the global trading system (Climate Change Secretariat, 2005; Division of Sustainable Development, 2014b; United Nations, 2010a). This situation leads to economic volatility, given the vulnerability of industries like tourism and fishing to changes in the global economy and financial markets (Briguglio, 1995; 2003). These vulnerabilities have been reiterated in the post-millennium development goals discussions at the global level, noting that, in general, SIDS progress towards achieving millennium development goals has not been sustained (UN System Task Team, 2012). Briguglio (2003) notes that the unique case of SIDS is evident only when viewed from a vulnerability perspective, rather than the commonly used developmental indicators at a global level.

The populations of SIDS are generally very small (Table 2.1), often less than a million people, and only three SIDS have a population of over 10 million. The

total population of all SIDS combined was estimated in 2011 to be 65 million (UN-OHRLLS, 2013, p. 17).

Table 2.1: Small Island Developing States and their development indicators

Small Island Developing States (United Nations member states)	Surface Area (Square km)	GDP per capita (2009, current US\$)	Population in 2009 (est. 000)	Projected population growth rate (Av. annual % , 2010-2015)
CARIBBEAN				
Antigua & Barbuda	442	12,919.7	88	1.0
Bahamas	13,943	20,710.9	342	1.1
Barbados	430	14,050.8	256	0.2
Cuba	109,886	5,437.0	11,204	-
Dominica	751	5,668.4	67	0.1
Dominica Republic	48,671	4,618.1	10,090	1.2
Grenada	344	6,117.3	104	0.4
Haiti	27,750	625.9	10,033	1.5
Jamaica	10,991	4,566.1	2,719	0.4
Saint Kitts & Nevis	261	10,541.3	52	1.2
Saint Lucia	539	5,504.7	171	0.9
Saint Vincent & Grenadines	389	5,188.7	109	0.1
Trinidad and Tobago	5,130	15,781.5	1,339	0.4
CENTRAL & SOUTH AMERICA				
Belize	22,966	4,356.0	307	1.9
Guyana	214,969	2,683.2	763	(0.2)
Suriname	163,820	5,706.6	520	0.9
EASTERN & WESTERN AFRICA				
Comoros	2,235	784.7	676	2.1
Cape Verde	4,033	3,131.1	506	1.3
Guinea-Bissau	36,125	516.9	1,611	2.3
Mauritius	1,969	6,728.5	1,288	0.6
Seychelles	452	9,354.4	84	0.3
Sao Tome & Principe	964	1,301.6	163	1.7
ASIA				
Bahrain	758	24,408.5	791	1.8
Maldives	300	4,130.7	309	1.5
Singapore	710	37,394.2	4,737	0.9
Timor-Leste	14,874	593.3	1,134	3.4
PACIFIC				
Fiji	18,272	3,604.2	849	0.5
Kiribati	726	1,335.5	98	1.5
Marshall Islands	181	2,750.9	62	1.9
Micronesia (Fed. St. of)	702	2,434.4	111	0.5
Nauru	21	5,312.8	10	0.6
Palau	459	9,953.6	20	0.5
Papua New Guinea	462,840	1,174.3	6,732	2.2
Samoa	2,842	2,925.8	179	0.3
Solomon Islands	28,896	1,365.9	523	2.2
Tonga	747	3,259.3	104	1.0
Tuvalu	26	2,749.0	10	0.4
Vanuatu	12,189	2,687.4	40	2.4

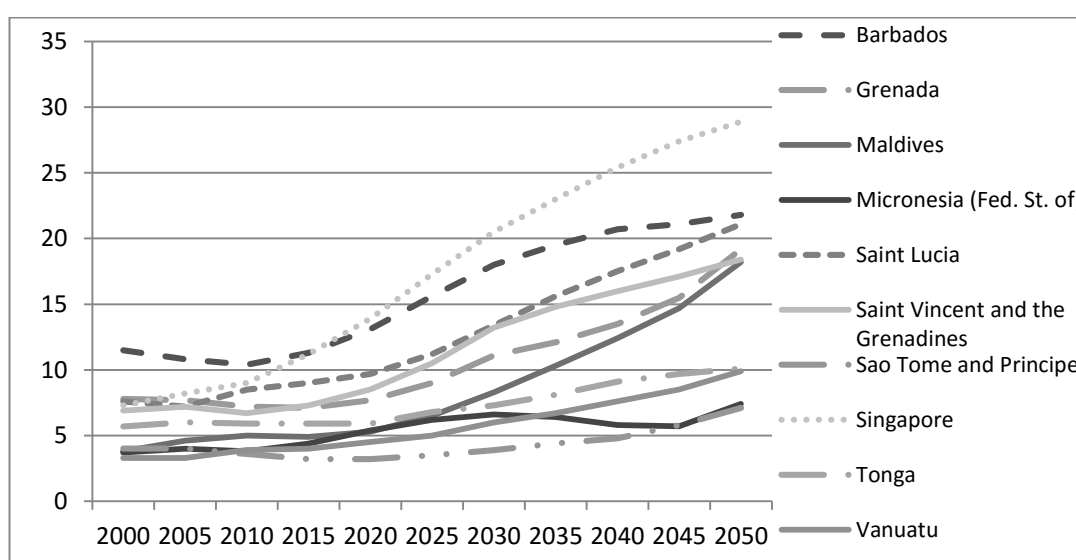
Source: World Statistics Pocketbook 2010 SIDS (United Nations, 2011b)

The rate of population growth in SIDS has been slowing down since 1990 with an average growth rate of 1.3 per cent for all SIDS combined (United Nations,

2011b; UN-OHRLLS, 2013). SIDS are currently characterised by a younger age structure, although the proportion of older people (65+ years) is gradually increasing, although at different paces.

Against this background of a generally younger age structure, the 2010 population statistics on SIDS indicates both numerical ageing and structural ageing in a number of these countries (House, 2013). At that time, two countries, Barbados and Cuba, had more than 10 per cent of the population aged 65+ years (United Nations, 2013c). In most SIDS, however, structural ageing is less prominent, with the proportion of people aged 65+ years in 2010 accounting for five to nine per cent in 14 SIDS (United Nations, 2013b). These include the smallest of the SIDS countries (in terms of population and surface area) such as Grenada, Maldives, Saint Lucia, Saint Vincent and the Grenadines, Singapore and Tonga (see Appendix B for statistics on population ageing in SIDS).

In most SIDS, population ageing began to accelerate over the period 2010-2015, and projections anticipate steep increases in the coming decades (United Nations, 2013b). For instance, in Maldives the proportion of people aged 65+ years is increasing from five per cent in 2010 to 18 per cent by 2050. A similarly rapid pace of population ageing is expected in Barbados, Grenada, St. Lucia, and St. Vincent and the Grenadines (Figure 2.1).



**Figure 2.1: Proportion of older people 65+ years in selected SIDS
(Estimated medium variant 2000 – 2050)**

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2012 Revision.

2.1.1 Challenges of population ageing for SIDS

In 2002, the Second World Assembly on Ageing emphasised that the growing number of older people and associated structural population ageing will have implications on every aspect of life (United Nations, 2002b). As noted in this Assembly, the socio-economic implications go beyond issues of social welfare to broad socio-economic development, including issues of human rights, societal participation and the acknowledgement of the real value that older persons hold for society. Gender concerns were also recognised as a critical aspect at this Assembly, as many older women were likely to be more vulnerable to the negative effects of development, advanced age and social prejudice.

The resulting Madrid Plan 2002 provided specific recommendations for action in the areas of older persons and development, advancing health and well-being into old age, and ensuring enabling and supportive environments (United Nations, 2002b). However, the challenges for addressing these issues are intensified in SIDS as these countries still have high child-dependency ratios and an increase in the size of the population aged 65+ years amplifies total dependency, in large part because of the underlying net migration loss of young adults. As shown in Table 2.2, the total dependency ratio in several SIDS goes beyond 50 per 100 working age population. Furthermore, the proportion of the old-age group that makes up the total dependency ratio is estimated to outweigh that of the child-age group in several SIDS: Barbados, Maldives, St. Lucia and Singapore (Table 2.2). The high proportion of children among the dependent population in SIDS invariably leads to debates about the prioritisation of public resources and programmes. Younger population groups tend to be targeted, neglecting the issues faced by older people at national and international levels (UN-OHRLLS, 2011).

The omission of the issue of population ageing in SIDS, in the Third International Conference on SIDS in 2014 is evident from the conference publications (Division of Sustainable Development, 2014a, 2014b), and illustrates the low policy priority currently being given to the issue. But as House (2013) notes, “a shift from young-age dependency towards old-age dependency first moderates or even decreases the old age dependency” (p.9). This observation has been attributed to the large proportion of the working age population which at first results in an increase in births and dependent children, but when that large

working age population ages and enters the older age group, the force of dependency shifts from the younger to the older age group (House, 2013). Thus, SIDS need to be prepared for the challenges associated with population ageing that is imminent in the coming decades.

Table 2.2: Dependency ratio² of the population in selected SIDS 2000-2050

SIDS countries	Dependency ratio	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Barbados	Total	50	46	42	43	46	50	55	58	61	62	63
	Child	33	30	27	27	27	27	27	27	28	27	28
	Old-age	17	16	15	16	19	23	28	31	33	34	36
Maldives	Total	82	64	54	50	49	47	44	43	43	46	53
	Child	75	56	46	42	41	38	32	28	25	25	25
	Old-age	7	8	8	7	8	10	12	15	18	21	28
Micronesia (Fed. St. of)	Total	79	75	69	62	60	60	60	57	50	44	44
	Child	72	68	62	55	51	50	50	47	41	36	33
	Old-age	7	7	6	7	9	10	11	10	9	8	11
Saint Lucia	Total	66	56	51	47	45	46	48	50	52	54	57
	Child	54	44	38	34	31	29	28	27	25	25	24
	Old-age	13	11	13	13	14	16	20	23	27	30	33
Sao Tome and Principe	Total	92	85	82	81	75	68	62	60	59	58	58
	Child	85	78	76	75	69	62	56	53	51	49	46
	Old-age	8	7	7	6	6	6	6	7	8	9	11
Singapore	Total	40	38	36	36	40	47	53	58	62	65	69
	Child	30	26	24	21	20	21	22	22	21	20	20
	Old-age	10	11	12	15	19	25	32	36	41	45	49
Tonga	Total	79	79	76	74	68	63	62	63	65	63	60
	Child	69	68	66	64	58	52	50	50	50	48	44
	Old-age	10	11	10	10	10	11	12	13	15	16	16

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2012 Revision.

The most common challenges countries are facing with regard to population ageing are around the sustainability of social protection systems, the provision of health care, the provision of social support for long-term care, and social participation of older persons in society (United Nations, 2007a). Despite the

² The total dependency ratio is the ratio of the sum of the population aged 0-14 and that aged 65+ to the population aged 15-64. The child dependency ratio is the ratio of the population aged 0-14 to the population aged 15-64. The old-age dependency ratio is the ratio of the population aged 65 years or over to the population aged 15-64. All ratios are presented as the number of dependants per 100 persons of working age (15-64).

competing priorities of a high youth-age population and an increase in old-age dependency, a number of SIDS have initiated specific social protection programmes targeting the challenges of a population growing older (Williams, Cheston, Coudouel, & Subran, 2013). These four challenges are now described in more detail.

In addressing the first challenge of social protection, a number of SIDS in the Caribbean and the Pacific have adopted policies for a retirement pension through social insurance schemes, based on contributions from wage-earning workers (United Nations Economic and Social Commission for Asia and the Pacific, n.d; Williams et al., 2013). These schemes, however, generally provide coverage for only a small segment of the older population, for instance in Tonga and Tuvalu the scheme covers only public sector employees, thereby excluding the most vulnerable (United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP), n.d). In the Caribbean SIDS, such as Belize, Jamaica, St. Vincent and Grenadines, the proportion of older people receiving the retirement benefit is low. This observation is consistent with findings from other developing countries and indicates that sustaining high coverage is difficult with potential beneficiaries in the rural areas tending to be left out (Knodel & Chayovan, 2008). In addition to the contributory schemes, some SIDS such as Barbados, Mauritius, St. Kitts and Nevis, and Trinidad and Tobago, have adopted a non-contributory basic old age pension (OAP), achieving higher coverage of older people, including the self-employed sector (Williams et al., 2013). Most of these schemes are recent, and concerns about their sustainability are being raised, given the expected increase in number of older people, as governments bear most of the financial risk in these schemes (Williams et al., 2013; UN-ESCAP, n.d). For instance, Niue experimented with a non-contributory scheme but could not sustain the cost of meeting the increasing amount of pension provided by the scheme (Hayes, 2009).

The second challenge is the provision of health care that is accessible, affordable and meets the needs of older people. In many countries, chronic diseases such as hypertension, diabetes, heart diseases and stroke are more prevalent among older population groups and this causes a significant burden on health services (World Health Organization, 2008). However, older people in SIDS have reported low levels of access to health care, e.g. in the Caribbean SIDS such as Barbados,

Jamaica, and Trinidad and Tobago (Bourne, Eldermire-Shearer, McGrowder, & Crawford, 2009; Cloos et al., 2010; Rawlins et al., 2008). Hayes (2010) notes in the case of the Pacific SIDS, that the medical services required by older people are available only in urban centres, thus leaving out the majority of older people living in more isolated islands and rural areas. Similarly their access to preventive health services is poor due to the high cost and unreliability of transport and communication to these areas. The provision of required medical services in isolated areas is challenging, not only because of the budget demands, but also because of limited skilled human resources (Hayes, 2010; United Nations, 2010a). While health systems face the daunting task of providing access to health care that meets the needs of older people, many countries are now giving priority to universal coverage of a minimum package of health-care services, including older persons (United Nations, 2007c). According to the World Bank estimates, countries such as the Pacific SIDS need to increase health spending by 37 per cent over the period 2005-2025, out of which 22 per cent would be attributable to changes resulting from an ageing population (Gottret & Schieber, 2006). The existing social insurance schemes in the Caribbean SIDS provide coverage of disability, but they do not specifically cover the increased medical costs of older people (Williams et al., 2013). Thus, governments are now adopting the more cost-effective preventive approach in the promotion of healthy lifestyles, (Hayes, 2010).

The third challenge for ageing in SIDS is the provision of social support for long-term care in the context of changing social institutions and family structures. The predominant living arrangement for older people in SIDS is in extended family households where they are taken care of in the family home (Chan, 2001; Cloos et al., 2010; Hayes, 2009; Panapasa et al., 2012). However, modernisation and urbanisation is transforming family structures, living arrangements and family life, leading to greater social isolation among the older population (Rawlins et al., 2008). Moreover, despite the extended family being the norm, continued migration and mobility of the younger generation is reducing the ability of families to provide care for older people (United Nations, 2007c). Nevertheless, co-residence provides the opportunity for care and social support, and traditional, informal support systems are the mainstream provider of long-term care and social support to older people (Hayes, 2009). The UN-ESCAP (n.d) notes that

governments in the Pacific SIDS see their role as minimal in the provision of income support, and are promoting the traditional and cultural familial obligation for care of older people.

The fourth challenge in the geo-spatially dispersed islands of SIDS is the social participation of older people. In SIDS social participation is primarily through older people's involvement in family activities, and includes the provision of childcare to grandchildren or continuing self-employment in the case of the poorer old people, as observed in Pacific SIDS (Hayes, 2009; Rawlins et al., 2008). However, opportunities for social participation in society are particularly difficult for older people living in geographically isolated islands or rural areas. As in other rural settings, the occupational choices, health, social services and transport, are comparatively limited in the more isolated or rural islands, and these areas are typically more sensitive to traditional and religious values (Leipert & Reutter, 1998). Although past research shows that older people in both rural and urban areas are more likely to be socially isolated, the factors leading to social isolation are different in urban and rural settings. Financial insecurity is one factor that has been shown to be strongly correlated with social isolation in rural areas as compared to urban areas (Havens, Hall, Sylvestre, & Jivan, 2004). In the urban areas of SIDS, social activities are often organised specifically for older people while in isolated areas there are no such activities, thus increasing the risk of social isolation (Cloos et al., 2010). At the level of family, despite living with adult children, older people have been found to feel isolated, even in urban areas as children are more likely to be engaged in economic activity and have little time for older parents (Rawlins et al., 2008).

It is evident, therefore, that there are unique challenges facing SIDS in ensuring the wellbeing of older people – those of social protection, social support, health care and social participation. The current research examines these challenges by conducting an empirical study in one such SIDS, Maldives.

2.2 Maldives

The Republic of Maldives is a Small Island Developing State consisting of 1,190 coral islands (see Appendix C for a map of Maldives) located on the equator in the Indian Ocean. The land to sea ratio is largely skewed with the sea comprising 99 per cent of the nation's territory. It is the most dispersed country among SIDS,

and the islands are low lying with an average elevation of 1.6 metres above mean sea level (Climate Change Secretariat, 2005). Few islands have a land area in excess of one square kilometre. The islands form 26 natural atolls, which for administrative purposes are grouped into 19 units. The 2011 country statistics show that only 194 of the islands are inhabited (Department of National Planning, 2010b). The number of inhabited islands continues to change as many islands have experienced erosion and have become uninhabitable due to climatic effects from global warming. Of the inhabited islands, 131 have a population of less than 1000, four have a population of more than 5000, and 35 per cent of the population is resident in the island of Male', the country's capital (Department of National Planning, 2010b).

In the past decade, Maldives has seen major transformations of its governance structure with a new constitution ratified in 2008. The key changes in relation to the 2008 Constitution have involved the introduction of a presidential system geared towards full democratic governance, with the separation of powers of the executive, judiciary and legislature, multi-party elections, decentralised governance and a bill of rights and freedoms for its citizens (World Bank Group, 2014). The transition in governance has been erratic, with the first elected president under the new constitution in 2008 resigning in 2011, a transition government until November 2013, followed by a new multi-party election in 2013 and a parliamentary election in early 2014 (World Bank Group, 2014). The result of these elections is a new President with a ruling party majority in the Parliament (Ministry of Finance and Treasury and United Nations Development Programme, 2014).

The Maldivian economy has shown steady growth averaging 7 per cent over the past decade, but like many other SIDS this growth rate dropped following the recent global financial crisis, and has begun to improve only from 2013 with a real GDP growth of 3.7 (World Bank Group, 2014). The economy is highly dependent on the tourism industry which accounts for around 30 per cent of the direct GDP, and almost 75 per cent when counting direct and indirect income from related industries such as in-country transport and food and beverage services (Ministry of Finance and Treasury and United Nations Development Programme, 2014). Based on international estimates, Maldives is currently placed as a middle-range human development country with a human development index

(HDI) of 0.688 (in 2012) and a per capita GDP of US\$7,177 (World Bank Group, 2014). This consistent growth has led to the graduation of Maldives from a least developing country to a middle income country, with implications for external development assistance. Poverty in Maldives has also shown a consistent reduction. As measured by being below \$2 per capita per day, poverty in Maldives reduced from 31 per cent in 2003 to 24 per cent in 2010 (The World Bank Group, 2014). However, the poverty gap continues to be a concern, with only a small reduction from 5-4 per cent in the atolls, while the poverty gap increased in Male', the capital city, over the period 2003-2009/10 (Ministry of Finance and Treasury and United Nations Development Programme, 2014).

Although the Maldivian economy is recovering, continued high levels of fiscal deficit are threatening macroeconomic sustainability. In 2013, the current account deficit was at 20 per cent of GDP and the gross reserve at \$386 million (World Bank Group, 2014). The recent introduction of welfare schemes for utility subsidies and allowances for vulnerable populations, social health insurance and old age pensions that solely depend on government contribution adds further pressure to the fiscal deficit. According to The World Bank Group (2014) the high public expenditure with short-term borrowing is putting Maldives at a high risk of external debt crisis, a concern shared by several SIDS (Williams et al., 2013).

Many aspects of the Maldivian economy make it vulnerable to external shocks, as is the case for other SIDS. Most of the staple foodstuffs, basic necessities and items for the tourism industry and the country's population are imported. As in other SIDS, this external dependence on commodities along with the geo-spatial vulnerabilities of Maldives makes sustainable development a continuous challenge. These structural vulnerabilities relate not only to economic development but also to vulnerabilities associated with socio-economic transition and natural disasters where older people are the least likely to be able to care for themselves (Ministry of Finance and Treasury and United Nations Development Programme, 2014). A snapshot of socioeconomic indicators of Maldives is provided in Appendix C.

2.2.1 Population Ageing in Maldives

When the current cohort of older people 65+ years was born between 1910 to 1950, the total population of Maldives was less than 100,000 (72,237 in 1911 and

82,068 in 1946) (Department of National Planning, 2010a). The population has grown gradually and, at the 2006³ Census, the population was 298,968 (Ministry of Planning and National Development, 2007b). This was a 10 per cent increase from 2000 and is projected to increase to 347,552 in 2015 (Department of National Planning, 2010b). However, the analytical report of the Census 2006 notes that the population growth rate had declined from 3.43 per cent in the period 1985–1990 to 1.69 per cent between 2000 and 2006. The increase in population is mainly due to natural increase (Ministry of Planning and National Development, 2008). Based on the 2006 Census figures, the population is estimated to double in 40 years if it continues to grow at this rate. The mortality rates have declined during the last three decades, while the life expectancy at birth for men increased by over 21 years (from 51 in 1980 to 72.6 years in 2010), and for women by 25 years from 49 to 74.4 years during the same period (Ministry of Health, 2005, 2012). This is coupled with a rapid decline of the total fertility rate from 6.40 in 1990 to 2.15 in 2006 (Ministry of Planning and National Development, 2008).

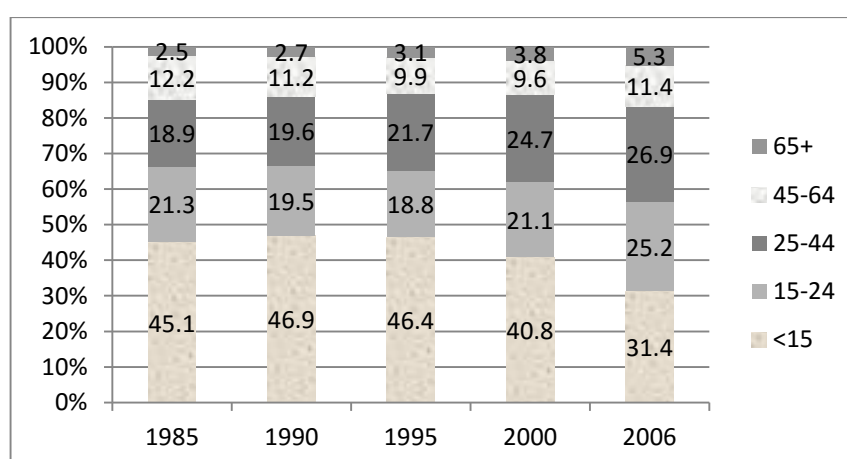


Figure 2.2 Distribution of total population of Maldives by age group, 1985-2006 (%)

Source: Ministry of Planning and National Development, 2008.

The reduction in the fertility rate and the increase in life expectancy at birth have led to significant changes in the demographic structure of the country and a modest increase in the ageing population 65+ years (see Figure 2.2). Although life expectancy estimates were below 65 years in 1980, census data shows that the percentage share of the population 65+ years increased from 2.5 in 1985 to 5.3 in 2006, and is expected to increase with further decline in mortality and fertility rates (Ministry of Planning and National Development, 2008). The proportion of people 65+ years is higher than that estimated by the United Nations statistics

³ The last Census was in 2014 and the results are expected after mid-2015.

discussed above (United Nations, 2013c), indicating that population ageing is beginning to accelerate at a faster pace in Maldives.

The population projections show that the proportion of children 0-14 years will continue to be higher than that of the 65+ years age group for the next 25 years (Figure 2.3). In 2045, the 0-14 years age group will form 19.3 per cent of the population, while the 65 + age group will be 13.3 per cent of the population. It is estimated that the population ageing process will accelerate until 2050, after which growth is expected to be at a slower pace, reaching 20 per cent in 2055 (Ministry of Planning and National Development, 2008).

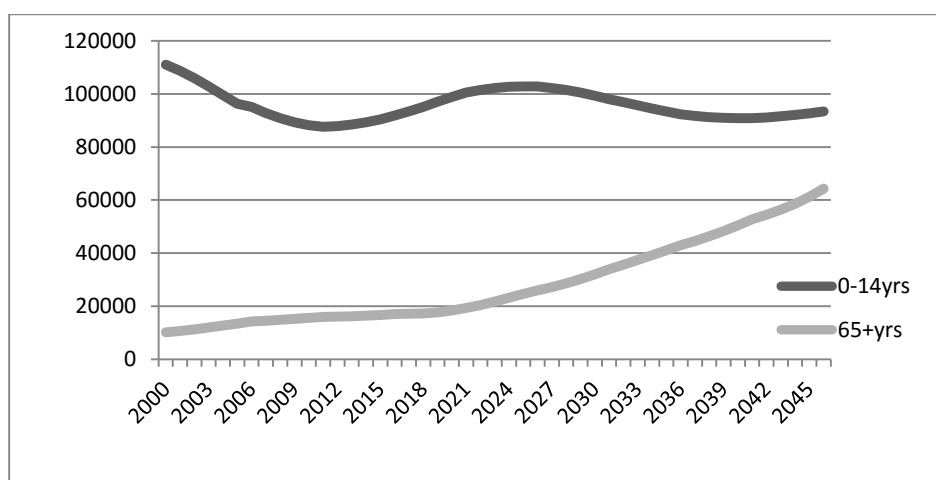


Figure 2.3: Projections for children 0-14 years and people over 65 years in Maldives, 1985-2045 (numbers)

Source: Department of National Planning, Maldives, 2010. (2009-2045 data projected from 2006 census data).

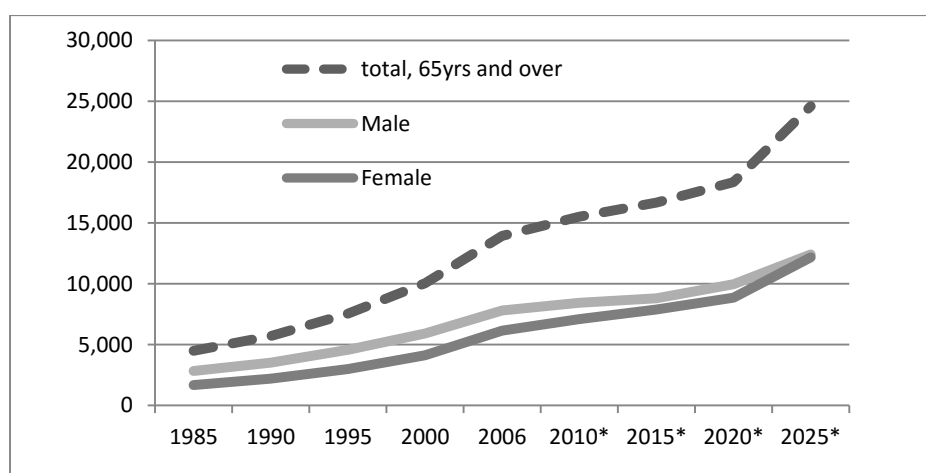


Figure 2.4: Population 65+ years in Maldives by gender, 1985-2025 (numbers)

Source: Department of National Planning, 2010;
*2010-2025 data projected from 2006 census data.

At the time of the 2006 Census, the male to female sex ratio among the population of 65+ years was 1:0.5 and is projected to reach 1:1 in 2025 (Figure 2.4). Although from an industrialised society perspective, it may appear unusual for

there to be more men than women, the ratio of men to women at older ages reflects the health situation in the life history of the present 65+ year olds which saw men more likely to survive to older ages than women, with women's high death rates associated with child birth. As discussed earlier, this situation is common in other SIDS as well. The gradual reduction of the gender difference in longevity among the 65+ population reflects the improvements in maternal mortality, with more women surviving to older years.

Mortality data for the year 2009 show that 67 per cent of deaths in the population occur among people over 65 years (Department of National Planning, 2010b). In Maldives there is no gender difference in the age-specific mortality rates for older people. The vital registration statistics of Maldives for 2009 showed that among those 60 years and over, both males and females have a mortality rate of 4 per cent (Ministry of Health and Family, 2011).

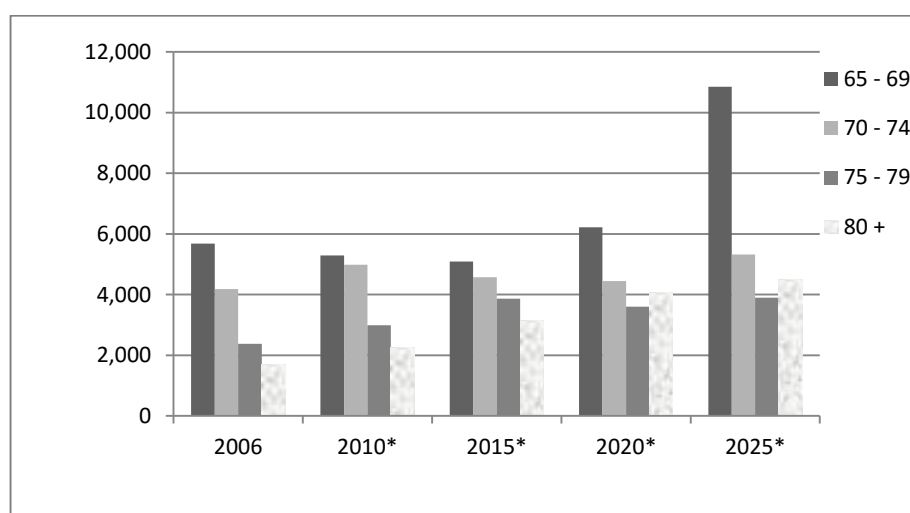


Figure 2.5: Population over 65 years, in 5yr age groups, Maldives, 2006-2025 (numbers)

Source: Department of National Planning, 2010

*2010-2025 data projected from 2006 census data.

In 2012, a person between 65-69 years in Maldives was expected to live a further 16 years, with no gender difference (World Health Organization, 2014). This is reflected in the population estimates of the oldest of the old, where the proportion of older people 80 years and over will be very small in the next 15 years (Figure 2.5).

2.2.2 Life circumstances of older people 65+ years in Maldives

The socio-economic life circumstances of people 65+ years provided here is based on information from the 2006 Census of Maldives, health research reports, and

other publicly available information, along with informal communication from six older people 65 + years (past community leaders identified through personal contact) in Maldives during the course of this research.

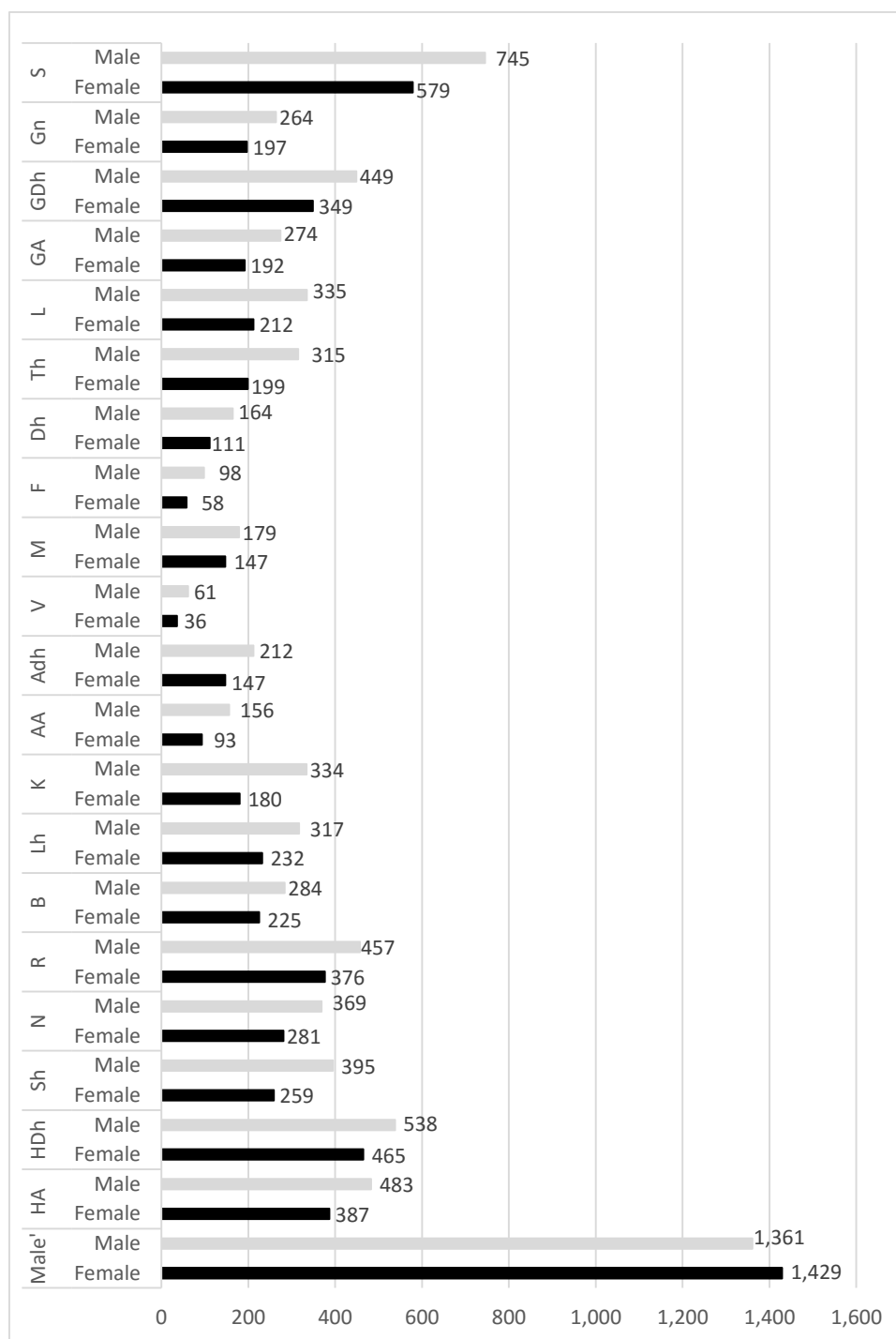


Figure 2.6: Maldives population over 65years (numbers), by locality⁴, 2006

Source: Ministry of Planning and National Development, 2007b.

⁴ The localities except for Male' are marked as abbreviations on the y-axis that refers to the administrative units of the Maldives: Male'=Male' city, HA=HaaAlif atoll, HDh=HaaDhaal atoll, Sh=Shaviyani atoll, N= Noonu atoll, R=Raa atoll, B=Baa atoll, Lh=Lhaviyani atoll, K=Kaafu atoll, AA= AlifAlif atoll, Adh=AlifDhaal atoll, V=Vaavu atoll, M=Meemu atoll, F=Faafu atoll, Dh=Dhaal atoll, Th=Thaa atoll, L=Laamu atoll, GA=GaaAlif atoll, GDH=GaaDhaal atoll, Gn=Gnaviyani atoll, S=Seenu atoll).

2.3.2.1 Residential locality of older people

A quarter of the population aged 65+ years lives in the capital, Male' (Figure 2.6; Ministry of Planning and National Development, 2007b). This aligns with the general population distribution in Maldives at the time of the 2006 Census where one third of the population resided in Male' (Ministry of Planning and National Development, 2008). Apart from the capital, the population aged 65+ years is more concentrated over the northern atolls compared to the southern and central atolls (see Figure 2.6).

2.3.2.2 Family and living arrangements

Despite the small size of the population, the current cohort of older Maldivians was born into large families with 4-10 children, and occasionally more than 10 children. An extended family structure was the norm, with family households consisting of parents, brothers and sisters, cousins, uncles, aunts and sometimes even friends living under the same roof. It was not common to have any living grandparents. Many families lost their mothers due to complications at child birth and many experienced the loss of siblings when they were very young. Children were often looked after by older children or by an aunt from the extended family until another carer could be arranged. Hence, the current cohort of older people has lived within a large family structure during its younger years.

The 2006 Census shows that the extended family living arrangement continues to be the norm with an average household size of 6.5 people, although this is a notable decrease from 9.8 people in 1990 (Ministry of Planning and National Development, 2008). Table 2.3 shows the living arrangements of older people in Maldives in 2006.

Although a majority of people 65+ years (61 %) lived with their children, 28 per cent lived only with their spouse and three per cent lived alone (Table 2.3). The observation that older people are living by themselves (either with a spouse only or alone) reflects the changing family structures and living arrangements (as in other SIDS, as discussed above) that have implications for families and public policy. However, among those older people living alone, there were more men than women, exhibiting the higher male to female ratio in the population aged 65+ years. This also reflects the traditionally higher status given to the 'mother' and

the adult children's responsibility to look after one's mother on the death of the father.

Table 2.3: Living arrangement of population over 65 years in the Maldives, 2006 (numbers)

Locality	Gender	Living with					Living alone	Total
		Children	Spouse	Step children	Other relatives	Non-relatives		
Male'	Male	666	375	13	45	63	24	1,186
	Female	1,000	148	9	56	36	19	1,268
Atolls	Male	2,963	2,139	42	228	153	212	5,737
	Female	3,117	864	14	175	35	158	4,363
	Male	3,629	2,514	55	273	216	236	6,923
Total	Female	4,117	1,012	23	231	71	177	5,631
Total (both sexes)		7,746	3,526	78	504	287	413	12,552

Source: Ministry of Planning and National Development, 2007.

Marriage has been universal in Maldives. The current cohort of older people were likely to have entered into marriage at the age of 12-13 for girls and 15-16 years for boys. Marriages took place with the consent of the girl's father as prescribed in the religion of Islam. Marriages were arranged by the family and the ability of the male to earn and look after the woman was given careful consideration. However, divorce and remarriage to another partner or the same partner were common resulting in serial monogamy during the life course. Once divorced, the female divorcee returned to the woman's family home, and the woman took the children with her. The practice of polygamy by men was accepted, but few ventured to have two wives at the same time, mainly because they were not able to support more than one. While this was the common practice in their younger days for the very old people (80+ years), the younger old (65-80 year olds) have been members of a generation that has seen change in these traditional norms. Instead of marriage occurring with the consent of the girl's father, boys and girls began choosing partners of their liking, and some men lived with their wife's family. Whatever the circumstances of marriage, in their adult life the current cohort of older people have lived in an extended family environment. Men more frequently re-married following the death of a spouse and this is reflected in the higher number of older men living with a spouse compared to women (Table 2.3).

2.3.2.3 Health

When the current cohort of older people was born (1910 -1945), the health of the population was very poor with most people living only to midlife, often less than 40 years of age. Even in 1981, the average life expectancy at birth for Maldivians was 46.5 years (Najeeb, Abdulraheem, Shafeeu, & Aboobakuru, 2008). Communicable diseases such as malaria and tuberculosis were rampant and the death of a child was a common occurrence. Women often died during or soon after child birth due to complications, with the maternal mortality rate at 500 per 100,000 live births in the year 1990 (Ministry of Planning and National Development, 2007a). There was no system of modern health care and people relied on religious healers. Treatments included the reciting of chants and the tying of strings with religious writings on the body. Over time, traditional healers emerged who relied on herbs for treatment so that most of the young-old people had experienced treatments with herbal medicines. Midwives were passed from one generation to the other in the same family but were not trained in modern medicine or infection control practices. In the late 1980s, with the establishment of primary health care, the traditional midwives were given training in infection control and nursing practices of midwifery. This led to improvements in the health situation of women and children and reduced the number of pregnancy-related deaths for the current younger old cohort.

A 2003 study on health and self-care among people aged 50-79 years in Maldives found that almost half (46.6 per cent) of this group rated their health as average, 24 per cent as good or very good, and 29 per cent as poor or very poor (Jameel, 2003). It also showed that the level of engagement of older people in exercise and recreational activities was quite poor, and decreased with increasing age.

More recent data on the health situation and disease pattern of the current cohort of older people in Maldives was not available at the time of this research. Contemporary medical practitioners indicate that cardio-vascular diseases, pneumonia, chronic obstructive lung diseases, asthma, osteoporosis, musculo-skeletal diseases, prostate diseases and constipation (due to a lack of fibre, fruit and vegetables in the diet) are common conditions among older people (World Health Organisation Regional Office for South East Asia, 2010). This indicates that chronic diseases constitute major health issues for older people and is consistent with the mortality statistics that identify chronic conditions as the

leading causes of death in the Maldives (Ministry of Health, 2012). Furthermore, about 8 - 10 per cent of the older population receiving home care (within the extended family) are bed bound, while dementia and cognitive impairment are also reported as common in persons receiving long term care (World Health Organization Regional Office for the South East Asia, 2010).

2.3.2.4 Social connectedness

The norm of living in extended families in Maldives meant that the family has been the core social network, followed by neighbours and the wider island community. Apart from social contact within the family, a number of leisure activities have historically provided for social connectedness. For example, going for walks in the evening and at night has been the commonest pastime for both men and women in Maldives (Young & Christopher, 2009). Gatherings of friends in houses or near the beachfront has also been a common practice providing the opportunity for social contact. At these gatherings the men usually played the drums, sang and told stories, while the women usually prepared and served snacks, and also told stories. It has been common for both men and women to go to the sea, usually with family and friends, often sharing a special dish. In addition, it is common to visit other islands as day trips with family and friends. Radio broadcasts began in Maldives in 1962, providing opportunities to get together to listen to radio programmes, as often one or two households shared a radio (Moosa, 2012).

The celebration of religious holidays such as *Eid* (celebrated after the month of fasting and pilgrimage to Mecca) is usually a grand affair that provides for social connectedness with the wider island community. Activities have included preparing feasts together with neighbours, exchanging food, playing games, street dances and performances. The circumcision of boys was another much celebrated ceremony with families in the neighbourhood bringing their children together, providing social support and social connectedness. During this process the children were hosted in one of the households which was always filled with people from other households, playing chess and other board games, with music and dancing till late at night.

Thus, the current cohort of older people in Maldives grew up in an environment filled with opportunities for social contact through the extended family, a close

knit neighbourhood and community, with religious or cultural norms that encouraged socialising.

Information on current social activities and the social networks of older people in Maldives could not be obtained from any publication. The health study by Jameel (2003) indicated that in Maldives the older people's level of engagement in recreational activities was low. Based on the 2006 information on living arrangements, it can be assumed that the family continues to be the main social network for older people. Personal communication with older people in Maldives indicates that going for walks (for health reasons), sitting at the front door, and going out to visit a friend or another family member, to the doctor, or to buy something were the main opportunities for social connectedness outside the household. However, there is a gap in information on the social connectedness of older people in Maldives.

2.3.2.5 Education and economic activity

When the current cohort of older people were children (between 1910-1945), an integral focus of education was on religious practices and imparting skills of recitation of the Islamic holy book, the *Qur'an*, and the performance of religious prayers and ceremonials (Young & Christopher, 2009). Writing and reading the script was not given any importance, unless the children themselves wanted to learn. In 1924, the residents of the capital city Male' saw the establishment of the first school in the mosque called *Edhuruge*, and this gradually spread to other islands (Maldives Culture, 2009). Children of wealthy parents, mostly from families related to the previous kings, had the opportunity to go to Sri Lanka for schooling and to learn English. A number of younger children, both boys and girls, came to Male' as household help in the more affluent households and had the benefit of going to school. This practice continued up to very recent times. Thus the current old-old and most of the young-old were illiterate often until their mid-life.

However, from 1980-1990, during the adult life of the current older people, the government implemented a programme of adult literacy, called *Asaasee Thauleem*, involving an estimated 19,000 illiterate people and 1400 voluntary teachers (Hasan, 1997). The programme was aimed at teaching adults to read and write in the local language and to provide basic numeracy, and boosted the

national literacy level to 98 per cent, with women's literacy at a higher rate than men's (Hasan, 1997). Fishermen (a major occupational group in Maldives) were among those least likely to participate in this programme, not having the time and having little motivation to learn following a hard day at sea.

The 2006 Census found that literacy levels among people over 65 years in the country was 90.4 per cent (Ministry of Planning and National Development, 2007b), this being 8 per cent lower than the national average. The illiteracy rate for this age group was 7.8 per cent, 7.5 for males and 8.3 per cent for females, compared to the national illiteracy rate of 2.3 per cent (Ministry of Planning and National Development, 2007b). Although Maldives currently has high literacy rates, the educational attainment is not high (Table 2.4). Among the population over 60 years, 64.4 per cent had no formal education but were literate (mainly through the 1980s literacy programme), and 28 per cent had only primary education (Ministry of Planning and National Development, 2008).

Table 2.4: Highest educational attainment in Maldives 2006, by age group (%)*

Educational Attainment	15-19	20-24	25-29	30-44	45-59	60+
No standard passed	1.5	2.7	5.2	25.0	47.9	64.4
Primary	22.4	21.2	36.6	43.0	36.0	28.1
Lower secondary	69.8	57.6	37.4	13.8	3.5	1.1
Higher secondary	2.8	7.4	2.8	0.9	0.2	0.1
Diploma	0.3	3.4	4.7	2.7	0.8	0.1
Certificate / Sanadhu	3.2	6.9	10.7	12.4	10.6	6.1
Bachelor's degree	-	0.8	2.0	1.2	0.5	0.1
Master's degree and above	-	0.1	0.6	0.9	0.5	0.1

Source: Ministry of Planning and National Development, 2008.

* The total does not add up to 100 due to missing data.

The economic activity in Maldives is limited as very few islands have the natural resources for economic production or other means of income. Most of the people living in the period 1910-1945 were poor, with the exception of those associated with the King and, later, the President. Fishing was the main occupation of men. A few were skilled in masonry and carpentry, and some in clerical work. Boys from the young age of 11-12 were taken fishing by their fathers or other family members to learn the skill. Collecting coconuts and cultivating cowry shells were other trade related activities. Work such as carpentry was done within the household with the skills passed onto the children as they grew. Thus most

families were self-employed with only a small number employed by the government for official purposes, while those living in the capital had the opportunity to join the defence forces. The family fishing boat served multiple purposes and was used to travel to Male' (often two or three times a year) to sell home-made products and purchase food (mainly rice) and other necessities for the island community. The staple food, rice, was always imported from neighbouring countries and sold only in the capital city.

Household work and looking after the family has been the main occupation of women. They also indirectly contributed economically to the fishing industry by cooking fish and making food products out of the fish catch. Distribution of part of the food cooked in the house to neighbours and relatives was a common occurrence. Some women were skilled in handicrafts, such as embroidery, traditionally a women's occupation, but worked only from their homes. Like boys, girls learnt from the family at a young age and were often married when they were very young in their early teenage years. Only a few were employed by the government, usually in a clerical job at the island office.

The younger old who are now entering their older years were more practically involved in the expansion of the tourism industry in the 70s. Some were employed as unskilled workers in the resorts or as crew on ferry boats to and from resort islands, rather than fishing, and thus more likely to move out of the family home. In the 1970s and 1980s, primary education and primary health care programmes started in a number of islands, creating job opportunities for a number of women who were employed as teachers or as community based health workers.

Tourism improved the economic situation of households, mainly in Male', but for some in other islands too. Improvement of the economic situation of families led to children being sent to Male' for education, with children often staying with friends or older married children who had settled there. With the moving out of children for employment and education, the current cohort of older people is experiencing the breaking-up of the traditional extended family structure and close ties they had with children and grandchildren.

Over half of the older population were economically active and earning income in 2006 (Ministry of Planning and National Development, 2007b). However, the

remaining 45 per cent of those over 65 years are not economically active and the proportion of women not economically active is higher (69%) than men (44%). According to the 2006 Census, about 50 per cent of those not economically active quoted their health condition as the reason for not working. Other most common reasons for not working included ‘income recipient through pension or rent’, ‘household work and caring for children’, ‘objection to work by family and relatives’, and ‘needs special care’ (Ministry of Planning and National Development, 2007b).

2.3.2.6 Significant life events

While for the most part life was simple and harmonious in their childhood and younger years, people now 65+ years in Maldives lived through three major national events. The first and most profound in their memory was the famine of the 1940s and 1950s as a repercussion of the World War II. The second was the political transformation of the 50s and 60s with the country making several attempts and, in 1965, finally becoming a republic and independent from the British. The third has been the introduction of tourism and the accompanying rapid economic and social development of the 1970s.

2.2.3 Existing public policies for older people in Maldives

Along with other SIDS, public policies in Maldives are generally geared towards addressing the structural vulnerabilities to sustainable economic development (Division of Sustainable Development, 2014a, 2014b; Ministry of Finance and Treasury and United Nations Development Programme, 2014). These policies have had a significant economic impact with significant increases in per capita GDP from US\$3,665.6 in 2005 to US\$7,699.8 in 2012 (United Nations, 2014, p. 120). This was coupled with improvement in the national HDI which was above the Asian average in 2012 (Ministry of Finance and Treasury and United Nations Development Programme, 2014). However, in a recent study by the World Bank Group, it was observed that Maldives is at risk of an external debt crisis (World Bank Group, 2014).

Regardless of a future debt crisis, and building on past economic development, current public policies for older people in Maldives have focussed on retirement, with pension schemes, health insurance, a long-term healthy ageing strategy, and other welfare benefits. These are briefly explained below.

2.3.3.1 Pensions

The Maldives Pension Act was introduced in 2009 with the objective of ensuring a reasonable economic standard of living for older people after retirement from formal employment (Maniku, 2012). The Maldives pension law established two schemes: the basic ‘old-age pension’ and the ‘retirement pension’ scheme (Maldives Pension Administration Office, 2011).

The old-age pension is universally provided to Maldivians who are aged 65+ years and resident in Maldives. It is non-contributory in the sense that it is paid out of the government budget and funded through import and business taxes. Since 2014, the amount of the old-age pension provided to each older person is MVR5,000.00 (equivalent to US\$325.00) per month, which is an almost 50 per cent increase over the amount of the original old-age pension scheme established in 2009. However, the amount of the old-age pension is reduced if the individual is a recipient of the retirement pension or any other pension income, by 50 per cent of the amount received through such schemes. In 2014, 97 per cent of people aged 65+ years were provided with the old-age pension (Maldives Pension Administration Office, 2014). This is consistent with the finding in this study where 94.2 per cent of the participants in the scheme received the pension, with 86 per cent having no difficulty in accessing it.

In addition, the retirement pension scheme is a contributory scheme linked to formal employment in the public and private sectors where the employer and employee each contribute seven per cent of the salary per month (a total of 14%). The individual is eligible to withdraw from this scheme on retirement from formal full-time employment, after the age of 65 years. In 2010, there was 100 per cent participation of public sector employees and 70 per cent of private sector employees. As the pay-out from the retirement pension scheme is linked to the age of 65 years and retirement from paid work, the number of beneficiaries of this scheme, at present, is very small due to the small numbers previously employed in formal paid work and the large informal or unpaid sector in the country. As of September 2014, 565 older people were retirement pension recipients with 77.7 per cent being male and 22.3 per cent females, which reflects the traditional work pattern of men and women in Maldives (Maldives Pension Administration Office, 2014). The actual retirement pension amount depends on when the contributions

started and the balance at the time the person reached 65+ years. The retirement pension level takes into account the inflation and interest rates.

As the pension schemes are relatively early in their roll-out, a number of challenges exist, mainly related to sustaining the schemes. In the case of the old-age pension, there is concern about the financial burden on the government budget as there are other pensions related to the civil service (such as long service pensions) which are duplicative and add further financial strain. Furthermore, the projected increase in older people in the Maldivian population in the coming decades needs consideration of more financing options, for the old-age pension to be sustained as a universal scheme.

There are concerns in terms of the goals of the retirement pension scheme and matters related to the sustainability and investments. This relates to Maniku's (2012) claim that the high unemployment among young people in Maldives means few young adults join the retirement pension scheme, thus affecting the accumulated funds that will be available for them when they reach 65 years. The unemployment rate for the whole country was 28 per cent in 2010, while 74 per cent of the not economically active were in the age group 15-24 years (Department of National Planning, 2012). Although the authorities are attempting to roll out the retirement pension to the self-employed, there is no legal provision for the participation of a large proportion of adults who are currently engaged in the informal economic activity in Maldives. At the time of the current study, no data were available on the self-employed and informal labour force.

2.3.3.2 Health

Since 2010, the National Social Health Insurance Scheme has provided financial cover for the medical expenses of all older Maldivians. Even before this new expenditure, per capital health expenditure had been increasing in Maldives with a 42 per cent increase between 2003/04 and 2009/10 (World Bank Group, 2014). The social health insurance scheme was legislated in 2011, making it non-contributory, with the State taking the full financial liability and including universal coverage of health care for all Maldivian citizens. The scheme, thus, ensures financial cover of health expenditure for all 65+ year olds resident in the country.

The new social health insurance scheme, *Aasandha*, was implemented in 2012 and includes comprehensive coverage of in-patient and outpatient services as well as medicines and medical devices in Maldives, and contracts external health care providers in neighbouring countries (World Bank Group, 2014). However, despite the existence of the social health insurance scheme, the national health accounts of Maldives, based on the 2011 situation, indicate that 49 per cent of the health care expenditure was on out-of-pocket payments at the household level (Ministry of Health, 2013a). Other researchers have also noted that older people in Maldives continue to face difficulties in accessing health care (Didi, 2012). These findings suggest that there are some deficiencies in the social health insurance scheme in that the household out-of-pocket expenditure, especially for older people, needs to be reduced. This may have changed since the 2012 implementation of the social health insurance policy, but there are no recent data. However, the no-ceiling policy of the social health insurance scheme, coupled with the payment of treatment costs by neighbouring countries for services not available in Maldives, has escalated health care expenditure by the State, and is threatening the sustainability of the scheme (World Bank Group, 2014).

A long-term Healthy Ageing Strategy was developed in Maldives in 2010, taking into account the broad recommendations of the Madrid Plan of Action (World Health Organization Regional Office for the South East Asia, 2010). The goal of the Healthy Ageing Strategy is “to ensure and promote autonomy and independence while maintaining human dignity with consideration for the concerns of the family” (World Health Organization Regional Office for the South East Asia, 2010, p.14). However, implementation of the Strategy has been slow due to a number of changes to the public service system and policy priorities linked to changes in government (Ministry of Health, 2014). At the time of writing this thesis (2014/15), very few of the components of the Strategy had been either established or implemented. The Strategy, nevertheless, serves as a valuable policy framework and the seven components proposed are summarised below.

The proposed policy framework is geared towards the provision of financial and health security by the government that would enable the protection of life and property. In addition, the provision of adequate health care and the creation of age responsive public infrastructure, together with support to family and other non-governmental organisations in caring for the older people have been suggested.

These highlight the societal value of interdependence in Maldives while facilitating the adaptation of older people to continue their engagement in the family and with friends in the wider environment (World Health Organization Regional Office for the South East Asia, p.18). However, this policy has yet to be adopted. The components of the Strategy highlight primary health care coupled with a referral mechanism to improve the older people's access to care, and the need for training and developing professional teams for the care of elderly, and guidelines for quality of care are noted. Additionally, health promotion on active ageing and building skills of family carers to provide long-term care are highlighted (World Health Organization Regional Office for the South East Asia, pp.15-16).

In addition, in order to maximise the participation of older people, the Strategy proposes intergenerational bonding programmes and involvement in planning and implementation. A need to increase employment opportunities, skill building and voluntary work has also been highlighted (World Health Organization Regional Office for the South East Asia, p. 17).

2.3.3.3 Other welfare benefits

Although not specific to older people, a disability allowance is provided, based on a needs assessment of physical, mental and social disabilities. In addition, the cost of assistive devices such as hearing aids and wheelchairs are covered by the disability support programme (National Social Protection Agency, 2013).

There is no policy for institutional care for older people as such, indicating that the policy perspective in Maldives is, by default, oriented towards family-based care. However, the Home for the People with Special Needs (*Haassa Eheeah Beynunvaa Meehunge Marukazu*), provides institutional care for older people in need of long-term nursing care. This institution is not specific to older people, but for people of any age with mental and/or physical disabilities who do not have any family for social support and care (World Health Organization Regional Office for the South East Asia, 2010). The older people are admitted to this institution based on a needs assessment. While the older person is being cared for in this institution, the person is not eligible for welfare benefits such as disability allowance or old age pension. This 'no-policy' policy towards institutional care is thus conducive, by default, to ageing-in-place strategies.

The existing public policies in Maldives discussed here suggest that there is a predominantly dependency view of ageing with an emphasis on economic welfare, care and support. This is, perhaps, due to the social construction of ageing that expects older people to be taken care of, usually by the family, but also by the government. Nevertheless, what emerges starkly is the limited attention to the social connectedness of older people, in policy and in practice.

2.3 Summary

Population ageing in SIDS is occurring at a rapid pace, bringing with it significant challenges for social and public institutions to provide services, given the unique geo-spatial and developmental characteristics. The situation in Maldives indicates that generally the current cohort of older people have low educational achievement, are not engaged in paid work, and rely on the traditional support mechanisms offered by the extended family living for care and social support. The public policy response is, however, largely focussed on providing financial assistance rather than catering to the health and social care needs of this growing group. The Maldives case points to the need to examine the important aspects of life that impact on the wellbeing of older people and the need to ensure policy and practices are appropriate in meeting the real needs of older people in SIDS. The following chapter examines the literature on wellbeing and ageing to inform the conceptualisation of wellbeing in the SIDS context.

CHAPTER 3: CONCEPTUALISING WELLBEING OF OLDER PEOPLE IN SMALL ISLAND DEVELOPING STATES (SIDS)

This chapter reviews research on wellbeing and ageing to identify theoretical perspectives and the key concepts that have informed other studies on this topic. The focus is the scholarship on wellbeing and ageing relevant to developing countries and, more specifically, SIDS⁵. The key philosophical perspectives on wellbeing and use of the ‘capabilities’ approach in the conceptualisation of wellbeing are critically analysed. Particularly, perspectives on ageing and the conceptualisations of the wellbeing of older people through life domains are discussed. Building on the eudaimonic philosophy of wellbeing, a specific theoretical perspective set within the ‘capabilities’ approach to wellbeing of older people in SIDS is developed. The chapter concludes with an outline of a hypotheses that will subsequently be examined in this research.

3.1 Perspectives on wellbeing and ageing

The following sections review key theoretical perspectives and concepts of wellbeing and ageing in different developmental contexts. The philosophies of hedonic and eudaimonic wellbeing and the perspectives that relate to these are discussed, identifying the key approaches by which wellbeing has been conceptualised in research. In addition, the different theoretical positions related to ageing, ranging from a dependency perspective to a view of ageing as an active process are discussed. These perspectives are reviewed with the goal of identifying the key life domains that impact on wellbeing in later life.

3.1.1 Theories of wellbeing

Wellbeing is a complex construct that is interpreted differently across disciplines, cultures and contexts (Deci & Ryan, 2008; Diener, Suh, Lucas, & Smith, 1999;

⁵ The University of Waikato’s library resources, Library Catalogue search engine and Google Scholar were used to access the literature. The online databases explored include EBSCO, ProQuest, SpringerLink, JSTOR, Scopus and APA Psycharticles. The key words used for the literature search included wellbeing, life satisfaction, quality of life, happiness, life domains, health and wellbeing, ageing, old age, elderly, older population, social contact, social connectedness, social networks, social values, development, developing countries, small island countries, small island developing states. In addition to the academic literature, information from websites of relevant government and other local institutions of SIDS and United Nations were reviewed.

Kahneman, Diener, & Schwarz, 1999; Manderson, 2005; Ryff & Keyes, 1995). There is a burgeoning literature on the theories of wellbeing, an overview of which is provided in Table 3.1.

Table 3.1: Brief overview of theoretical perspectives of wellbeing

Theory	Theory Characteristics
Hedonic philosophy (Kahneman, Diener & Shwarz, 1999).	1. Wellbeing is a subjective state, with the focus on the person's happiness. 2. The person's 'utility' is the basis of wellbeing - avoiding displeasure or pain depends on the person's experiences of positive and negative affect and mood.
Eudaimonic philosophy (Deci & Ryan, 2008)	1. Certain needs should be met for fulfilling one's life potential and wellbeing. It considers the conditions available to people that facilitates and diminishes their wellbeing. 2. Personal feelings/emotions are separate from the quality of life the person is able to live.
Prudence value theory (Griffin, 1986)	1. Wellbeing is associated with the fulfilment of prudence values. These values relate to "accomplishment; components of human existence (autonomy, physical capabilities, material goods); liberty/freedom; understanding/rationality; deep personal relations of love and friendship" (p.67). 2. Wellbeing is seen to encompass both objective and subjective states. It combines utility, the mental state or desires of enjoyment, and the objective accounts or the need accounts that demand a socially acceptable notion of wellbeing.
Theory of human needs (Doyal & Gough, 1991)	1. Wellbeing is associated with achieving life goals that depend on the fulfilment of a set of universal needs and these are described in a hierarchy of basic and intermediate needs, as well as societal conditions. 2. Satisfaction with basic needs are influenced by the fulfilment of intermediate needs and these are in-turn affected by societal conditions.
Capabilities theory (Nussbaum, 2003; Nussbaum & Sen, 1993; Robeyns, 2011; Sen, 1993,1999).	1. Certain capabilities are needed for wellbeing. The focus is on the valued functionings and the opportunities the person has – what the person can be and do to have a life that is valued. 2. There are variations in the capabilities of persons. These variations arise from inter-personal, social and environmental heterogeneities. 3. Examples of capabilities (beings and doings) are good health, having basic goods and resources, doing work and leisure activities, caring for others.
Self-determination theory (Ryan & Deci, 2000)	1. A macro-theory of human motivation, personality development, and well-being - focuses especially on the person's behaviour (the attitudes and preferences) as being determined by the individual, and the social and cultural conditions that promote it. 2. Wellbeing is not best captured solely by subjective conceptions of 'happiness' alone and objective circumstances are vital for wellbeing. However, fulfilment of a set of basic psychological needs is also necessary for wellbeing.
Socio-emotional selectivity theory (Carstensen et al., 2003)	1. Maintains that perceived limitations on time left in life leads to motivational shifts that direct attention to emotionally meaningful goals – critical for older people's wellbeing. 2. Age-related motivational shifts lead to changes in the interactions between individuals and their environments, such that emotionally rewarding experiences are prioritised in later life.

Generic definitions of wellbeing refer to health, happiness, comfort and prosperity, and a satisfactory existence (Cambridge University Press, 2011; Oxford University Press, 2012). Each of these constructs is complex and requires

further explanation, indicating that gaining a full understanding of wellbeing is not straightforward. Fleuret and Atkinson (2007) also note the importance of language and culture in the interpretation of aspects of wellbeing and observe that “it can be redefined, refined and reinterpreted at any place and time” (p.4).

3.1.1.1 Philosophical foundations: hedonic and eudaimonic views

The theories of wellbeing can be seen as being derived from two broad philosophical approaches, the hedonic and the eudaimonic perspectives (Kahneman et al., 1999; Ryan & Deci, 2001). From the hedonic perspective, wellbeing is understood as a subjective state, a state of happiness, enjoyment or fulfilment of desire (Griffin, 1986; Kahneman et al., 1999). Philosophers who hold this view regard happiness and the avoidance of displeasure or pain to be based on a person’s experiences of positive and negative affect and mood (Kahneman et al., 1999). Some proponents of this view consider happiness to be “a species of wellbeing of the second order” (Nordenfelt, 1993, p. 43), that it is the positive or negative affect experienced as result of one’s reflection on life as a whole or on certain aspects of life. Within the hedonic perspective, those taking a utilitarian view suggest that utility (or welfare) experienced through the satisfaction of certain preferences is the basis of wellbeing (Nussbaum, 2003, 2004). Looking at life as a whole, Veenhoven (2007) differentiates happiness from utility, with utility being seen as external while happiness is the enjoyment felt internally. Happiness is defined as the “combination of enduring satisfaction with life as a whole” (Veenhoven, 2007, p. 11). Thus, Veenhoven (2007) regards happiness as the feeling of overall life satisfaction felt internally by a person and based on a number of satisfying life experiences such as pleasure, best experiences and satisfaction with different aspects of life. The hedonic philosophy, therefore, associates wellbeing with happiness, a conception of wellbeing that underpins the subjective wellbeing approach in psychology and the utilitarian approach in economics (Griffin, 1986; Kahneman et al., 1999; Ryan & Deci, 2001; Veenhoven, 2003, 2007).

The eudaimonic philosophy differentiates between happiness and wellbeing, suggesting that the pursuit of pleasure does not necessarily improve wellbeing (Ryan & Deci, 2001). Instead, this perspective maintains that certain needs should be met if one’s life potential is to be fulfilled (Ryan & Deci, 2001). It is grounded within moral theory and the concern with achieving a state that is good (Griffin,

1986; Veenhoven, 2003). It seeks to recognise the place of ethical values in determining a person's wellbeing (Griffin, 1986; Nussbaum & Sen, 1993). Griffin suggested the prudence values theory that emphasised the importance of fulfilling certain needs for wellbeing, and that such accounts also include mental (subjective) states that result from socially acceptable achievements. Sen (1985), argues that the moral foundation of wellbeing has potential to be "extremely restrictive" and maintains that certain moral obligations demanded by the society may decrease wellbeing for an individual (p. 186). Both perspectives, thus, recognise the importance of subjective accounts of desire and enjoyment with objective accounts of human existence such as physical capabilities and material needs.

Closely related to the eudaimonic view is the human needs perspective proposed by Doyal and Gough (1991) that portrays wellbeing as a state achieved through the fulfilment of needs and universal goals in life as desired by the person. This perspective expands the idea of needs into basic and intermediate needs that must be fulfilled to achieve life goals. For instance, health is a basic need which is dependent on intermediate needs such as nutrition, health care and housing (Doyal & Gough, 1991; Gough, 2003).

The eudaimonic view, therefore, distinguishes wellbeing as the actual quality of life a person is able to lead rather than the subjective state or perceived feelings of affect (Deci & Ryan, 2008; Griffin, 1986). It provides an objective account of wellbeing that considers the conditions and resources available to people that facilitate or diminish the quality of their life, and it is interested in what people do or are capable of doing with these resources (Deci & Ryan, 2008).

3.1.1.2 Objective perspectives: the capabilities approach

Complementing the eudaimonic perspective is the theory of capabilities that takes in the objective life circumstances of the people (Nussbaum, 2004; Nussbaum & Sen, 1993; Sen, 1999). This approach claims that wellbeing is best understood by taking account of people's capabilities, or the real opportunities people have "to do and be what they have reason to value" (Robeyns, 2011, p.1). That is, wellbeing needs to be seen in terms of people's ability to lead the type of life they can and to be in a state they value, within the evaluative space of the person (Robeyns, 2011; Sen, 1993, 1999). Therefore, capabilities are the opportunities

people have to achieve the ‘beings and doings’, or in Sen’s terms, ‘functionings’ (2008, p.271). Sen’s definition of functionings encompasses various states of being and various activities a person can do. Examples of ‘beings’ are, “being adequately nourished, being in good health, or being socially integrated” (Sen, 1993, p. 31). Examples of the second component of functionings (the ‘doings’) include abilities to do things like “caring for a child, [or] donating money to charity” (Robeyns, 2011, p.3).

Since capabilities refer to the opportunities a person has to achieve a certain functioning, a distinction between ‘functionings’ and ‘capabilities’ is required. As noted by Robeyns (2011), the distinction is that of realised functioning (or the achievement) and the effectively possible functioning, or the opportunities from which the person can chose (p.4). For example, if being nourished is an achievement, the opportunity to obtain nutritious food can be the corresponding capability.

Nussbaum (2003) proposed a list of central capabilities that include life, bodily health, bodily integrity, senses, imagination and thought, emotions, practical reason, affiliation, play, and control over one’s environment (pp.41-42). Sen (1999), however, emphasises that there will be variations in the importance people attach to different functionings (beings and doings) and these variations in the capabilities arise from “personal heterogeneities, distributions within the family, variations in social climate, differences in relational perspectives and environmental diversities” (pp.70-71).

From this perspective, capabilities and functionings are the appropriate focus for research into wellbeing, because “these beings and doings are together held to constitute what makes a life valuable” (Robeyns, 2011, p. 4). In focussing on people’s valued functionings, and the opportunities they have to realise these, this approach stands in contrast to accounts of wellbeing that focus exclusively on subjective statuses such as happiness, or on the material means such as wealth (Robeyns, 2011; Sen, 1999).

Accounts of wellbeing, thus, require the adoption of a comprehensive, holistic perspective, one that asks what capability sets are open to individuals to achieve valued functionings. As such, the capabilities approach aligns with the view that

wellbeing is generated by the fulfilment of human needs (Doyal & Gough, 1991), but identifies that needs are fulfilled through capabilities. The capabilities approach regards wellbeing as the ability of the individual to achieve valued functionings in life (Sen, 1985), and that abilities to achieve these valued functionings can vary based on the opportunities within the interpersonal and socio-economic and environmental characteristics (Sen, 1999). The capabilities approach provides a broad framework that accommodates the insights from related perspectives concerned with person-environment exchanges, such as the person-environment fit theory that holds particular relevance for the wellbeing of older people (Lawton, 1983; Wahl et al., 2012).

The capability approach to wellbeing, along with its complementary perspectives within the eudaimonic philosophy is, therefore, appropriate to this research. It is a perspective that maintains wellbeing as a state of being that is good, and is based on multiple life aspects that are shaped according to the individual's context (Qizilbash, 1998, 2002).

3.1.1.3 Subjective perspectives: the self-determination approach

Conceptualisations of wellbeing in psychology hold the view that determining the status of wellbeing involves a subjective evaluation of the psychological needs in relation to the practical circumstances of the individual's life (Dykstra, 2009). This observation is supported by Deci and Ryan (2008) who emphasise the complementarity of the hedonic and eudaimonic perspectives of wellbeing. This is best illustrated in self-determination theory, a macro-theory of human motivation, personality and wellbeing that identifies wellbeing with self-determined behaviour and the socio-cultural conditions that affect it (Deci & Ryan, 2011; Ryan & Deci, 2000). This perspective asserts that the motivation for self-determined behaviour is the fulfilment of psychological needs necessary for wellbeing (autonomy, competence and relatedness), and emphasises that the socio-cultural context influences the construction and understanding of these needs (Deci & Ryan, 2008, 2011; Ryan & Deci, 2000). The psychological needs, in this theory, however, appear to be based on an individualistic point of view and it is possible that the psychological needs from a collectivist socio-cultural point of view may be different. For instance, inter-dependence rather than autonomy may be a psychological need that has to be fulfilled in a collectivist society that affects wellbeing. At the same time, Deci and Ryan (2008) notes that contextual factors

affect psychological needs and it is their effect on needs satisfaction that in turn affects wellbeing.

3.1.1.4 Other related perspectives on wellbeing

It has also been observed that individual conceptions of wellbeing change with age, and older people are likely to make more positive judgements than younger age groups (Westerhof, Dittmann-Kohli, & Thissen, 2001). This observation is explained by the 'socio-emotional selectivity theory' of motivation (Carstensen, Fung, & Charles, 2003), which maintains the view that being aware of the limitation on time and diminishing capabilities at older ages makes older people shift their motivation away from materialistic goals to emotionally rewarding goals (Carstensen et al., 2003). Thus, the capability sets for different age groups are likely to be different.

A related observation is that wellbeing is maintained in a homeostatic balance (Cummins, 2000a; Headey & Wearing, 1989). This assertion is based on the theory of 'wellbeing homeostasis' that suggests that the subjective wellbeing of individuals remains at a set point that is positive under normal situations, and is not influenced by changes in their environment unless such changes are extreme (Cummins, Eckersley, Pallant, van Vugt, & Misajon, 2003). Assertions that it is possible to observe a wellbeing homeostasis around a set point, however, have been challenged by comparative research which has shown differences in subjective wellbeing across different countries based on income, living conditions and cultural values (Diener, Napa-Scollon, Oishi, Dzokoto, & Suh, 2000). This is consistent with the findings that although subjective wellbeing homeostasis is maintained at a set point for a study population in a similar socioeconomic situation, it is not the case when applied to specific aspects of life that determine wellbeing (Cummins et al., 2003). Comparison of the national wellbeing of countries has shown that the subjective wellbeing homeostasis is set at a higher level in industrialised western populations than in non-western populations (Cummins, 2000a).

The influence of culture has been suggested as a plausible explanation of this difference (Lau, Cummins, & McPherson, 2005; Oishi & Diener, 2001) and flagged as an area needing further research. Studies in industrialised countries have not shown significant differences in the subjective wellbeing of populations

in urban and rural areas (Best, Cummins, & Lo, 2000; Cummins et al., 2003). The effect of geography and spatial variations on wellbeing is another aspect identified as needing further research (Fleuret & Atkinson, 2007; Helliwell, 2003). These findings are consistent with the observation by Manderson (2005) that “wellbeing is not the state of the individual bodies but that of bodies in the society” (p. 12). Hence, variations in social structures and conditions are expected to influence the level of wellbeing of individuals within that society.

As noted above, differences in wellbeing have been observed by the age and gender of individuals. Studies of the wellbeing of populations across America, Europe and Asia Pacific generally show a curvilinear relationship with age, forming a U shape, with wellbeing being its lowest during middle age (Blanchflower & Oswald, 2008). This U shaped trend is observed mostly in large industrialised countries. The same U shape is observed in some developing countries: Brazil, China, Iraq, Nigeria, Peru, but has not been found in some Asian countries: India, Indonesia, Bangladesh, Pakistan and Singapore and some Middle Eastern countries: Egypt, Morocco and Saudi Arabia (Blanchflower & Oswald, 2008). Singapore is the only SIDS where such a study does not show the U trend. But among older people, subjective wellbeing has been found to be higher among the ‘young-old’, usually 65 to 80 years old (Argyle, 1999; Blanchflower & Oswald, 2008; Cummins et al., 2003; Diener et al., 1999; Koopman-Boyden & Waldegrave, 2009), despite their frailty. Only among the ‘old-old’ (people 80+ years) does life satisfaction decline, associated with declining health (Gwozdz & Sousa-Poza, 2010). The higher levels of wellbeing among older people, in general, have been explained by perspectives of adaptation and socio-emotional selectivity that postulate older people have lower material aspirations, prioritise emotionally rewarding goals and adapt to the situations of life with time (Argyle, 1999; Campbell, Converse, & Rodgers, 1976).

Gender differences in wellbeing have been observed in New Zealand, China and Malaysia with women having lower levels of wellbeing than men (Diener et al., 1999; Koopman-Boyden & Waldegrave, 2009; Luo Lu, Kao, & Hsieh, 2010; Momtaz, Ibrahim, Hamid, & Yahaya, 2011). Nolen-Hoeksema and Rusting (1999) explain this apparent paradox in relation to the social context of the individuals, suggesting that gender roles, power status, abuse and stereotyping are reflected in the levels of wellbeing. A related perspective is that the gender

difference in wellbeing is mediated through marital status that in turn determines social roles and the status of women in several societies (Bailey & Snyder, 2007; Wood, Rhodes, & Whelan, 1989). Following a meta-analysis of research in different country contexts, Pinquart and Sörensen (2001) suggest that the lower level of wellbeing among women is a reflection of the lower health status and lower financial resources among women, influenced by their marital status and the self-concept of the individual. This perspective thus supports the notion that the social roles and status of men and women determines the gender differences in wellbeing.

In summary, the hedonic perspective underlies studies of happiness and subjective wellbeing while eudaimonic perspectives emphasise the circumstances and the capabilities of a person in studies of wellbeing. The capabilities approach emphasises functioning in critical areas of life, and the capability sets required to achieve wellbeing, and it recognises there are variations in the capability sets among individuals. More recent theoretical perspectives on wellbeing combine hedonic and eudaimonic views and draw on the person's socio-cultural and environmental context to identify valued psychological needs and capability sets. These perspectives converge in the way that they regard wellbeing as a universal state of being that is good, it is the sum of many experiences, and it depends on the person's capabilities which can vary based on the individual's characteristics and the context. It is, thus, feasible to integrate these perspectives to conceptualise wellbeing in different contexts. The existing theoretical perspectives on ageing and how they relate to the wellbeing of older people are now examined.

3.1.2 Theories of ageing and wellbeing

Old age has been described by Erikson (1959) as a stage of maturity where reflection on one's past life results either in wisdom or despair. As a person ages, certain capabilities diminish due to biological processes, and these bring about changes in individual needs. Early theories of ageing viewed the experience of old age from an external perspective, but in the latter half of the twentieth century these have been challenged by looking at ageing from the older individual's perspective (Angus & Reeve, 2006; Cumming, Dean, Newell, & McCaffrey, 1960; Cumming & Henry, 1961; Wilson, 1997). What follows is a review of theories of ageing and their implications for the study of wellbeing in later life (see Table 3.2 for summary).

Table 3.2: Overview of the theoretical perspectives on ageing and their wellbeing

Theories of ageing and wellbeing of older people	
Disengagement theory (Cumming & Henry, 1969)	1. Old age is associated with deterioration of physical and mental health and the contribution of older people to society decreases. 2. Focus on the preparation of the older person to disengage from society and prepare for death in ways that will satisfy the individual and the society. 3. Disengagement is, thus, seen as the path to wellbeing in old age.
Theory of gerotranscendence (Lornstam, 1997; Wadensten, 2006)	1. As a person reaches the final life stages there is a shift in life perspective from the rational view toward more spiritual or holistic view - a transcendent view – leading to gerotranscendence. 2. The disengagement from the rational world to a spiritual one is considered to be positive for the wellbeing of the older person. But this perspective does not reflect on changes in the capabilities of the individual that affect wellbeing.
Activity theory (Havighurst, 1963)	1. Older people adjust to ageing and continue to be active in the society and are involved in the social institutions of family and community. 2. The individual's previous roles and activities are replaced by pursuing new ones as the person ages. 3. Being active is, thus, viewed as promoting wellbeing.
Continuity theory (Atchley, 1989)	1. Views old age as socially constructed and not simply a temporal issue. 2. Suggests that older people continue their productive and social activities into old ages and should not be regarded as vulnerable. Emphasises that needs of older people arise as with any other age group, but does not recognise the heterogeneity among older people and their diminishing capabilities. 3. Continuity with past self is regarded to be critical for wellbeing.
Ecology theory of ageing (Nahemov & Lawton, 1973; Wahl et al., 2012)	1. Different combinations of personal and environmental characteristics determine an individual's level of adaptation and hence functioning. 2. Person-environment interactions are essential for successful ageing. These interactions create emotional and social experiences that affect the wellbeing of older people. 3. Emphasises that person-environment interaction is critical for the wellbeing of older people.

Within the external perspective (the outside looking in), initial theories of ageing were characterised by the notion of disengagement. 'Disengagement theory' maintained that the inevitable biological ageing processes were accompanied by disengagement from productive and social life as the older person prepared for inevitable poor health and death (Cumming et al., 1960; Cumming & Henry, 1961). This perspective provided justification for policies and practices to assist the older person's preparation for social and economic withdrawal. For instance, policies of a compulsory retirement age and old age pensions encouraged older people to withdraw from the workforce. A classic example is the forced retirement policies which continue in some countries today (Angus & Reeve, 2006; Townsend, 1981; Wilson, 1997). Disengagement theory has, however, been

criticised as being socially unacceptable as it is associated with creating and reinforcing assumptions about dependency, with resultant negative implications for older people's wellbeing (Gibson, 1987). The perspective has, thus, been associated with social structures and policies that encourage the seclusion of older people, with significant potential to undermine wellbeing (Angus & Reeve, 2006; Wilson, 1997).

A related theoretical proposition about ageing focused on gerotranscendence and proposed that in the final life stages there is natural progression towards maturity and wisdom during which a number of changes occur in the individual's perspective on life (Tornstam, 1997; Wadensten, 2006). Wadensten notes that these changes involve a shift in the "metaperspective from a materialistic and rational view of the world to a more cosmic and transcendent one" (p. 350), hence the term gerotranscendence. This notion aligns with the proposition of socio-emotional selectivity theory which seeks to account for the way older people shift their motivation to non-materialistic goals, as discussed above (Carstensen et al., 2003). Tornstam further asserts that "positive solitude" enhances wellbeing and should be regarded as a "positive developmental change" and not disengagement (p. 153). This perspective, however, emphasises only the positive aspects of disengagement and does not make any association between the capabilities of the individual and the environment in the progression towards gerotranscendence and how these impact wellbeing of the individual. Nor does it associate with any negative effects of disengagement on interactions with family, friends and community in such gerotranscendence.

Havighurst's response to the concerns related to the disengagement perspective considered Erikson's maturity age as a more dynamic time rather than one for reflecting on the past and preparing for death (1963). Thus emerged 'activity theory' with the idea that older people continue to be active even after retirement from work, and replace their previous roles and activities with new ones. This perspective is supported by the observation that developments in the field of medicine and the socio-economic environment are continuing to empower older people to lead an active life. As Hamerman notes, older individuals may experience different levels of frailty, despite having a number of co-morbidities, and they can be totally independent and coping well, or be dependent and cachexic (1999). A criticism of the activity perspective is that older people's

social networks and roles are formed in the early stages of life and in old age they have fewer opportunities for acquiring new roles and activities (Koopman-Boyden, 1988). Despite such criticism, the activity perspective gained popularity as it was seen to have the potential to enhance the wellbeing of the older individual by providing opportunities for creating new social roles and engagement in society (Wadensten, 2006).

Another perspective that ties in with activity theory is the continuity theory of ageing proposed by Atchley (1989), and supported by findings that older people continue to be productive and engage in society despite their older age. This perspective asserts that older people adapt to their diminishing capabilities and circumstances by relying on their existing resources and coping mechanisms (Atchley, 1999; Wadensten, 2006). The continuity perspective has similarities with activity theory in that ageing is viewed from the older individual's perspective with an emphasis on being active in society by continuing earlier and midlife activities and roles (Koopman-Boyden, 1988). This perspective is also seen as having the potential to enhance wellbeing as it reinforces the notion that the person is engaged in society by maintaining some continuity with their past self while finding new roles (Atchley, 1989; 1999; Wadensten, 2006). This proposition, however, differs from the activity perspective in that while old age is socially defined irrespective of the chronological age it does not recognise the heterogeneity among older individuals (Koopman-Boyden, 1988).

Complementing the continuity perspective of ageing is an ecological perspective that is concerned with the person-environment exchanges that determine the level of adaptation essential for successful ageing and wellbeing (Lawton, 1983; Nahemow, Lawton, & Center, 1973; Wahl et al., 2012). A fundamental notion within the ecological perspective is that different combinations of personal competence and environmental characteristics determine an individual's optimal level of functioning (Wahl et al., 2012). Grounded within this theory is the notion that older people adapt to their diminishing capabilities and environments, and construct coping strategies and engagement in personally valued tasks that enhance their wellbeing (Campbell et al., 1976; Diener & Lucas, 1999). This perspective recognises the heterogeneity among older people as well as the differences in the context that affect their wellbeing. For instance, older people living in urban areas have different interactions with the environment to those

living in isolated areas where there are limited services which in turn affect the type of support the older person receives (Bourne & McGrowder, 2010; Oppong, Ironside, & Kennedy, 1988). This perspective, thus, reinforces the importance of the interactions with the environment for wellbeing in addition to the individual's capabilities (Wahl et al., 2012).

The ecological perspective of ageing ties in with the socio-emotional selectivity theory of subjective wellbeing (Carstensen, 1992; Carstensen et al., 2003). As discussed earlier, this perspective maintains that as the older person recognises the limitation on time they have in life, there is a shift in their motivation towards emotionally rewarding goals. This perspective asserts that in later stages of life, changes occur in the person-environment exchanges such that "optimization of emotional experience is prioritized in later life" (Carstensen et al., 2003, p. 105). This notion can be seen as restrictive in that it is applicable to situations where the older person's material needs have been fulfilled and assumes there are sources and means for person-environment exchanges. The notion of adaptation to the social and physical environment is, however, important in understanding wellbeing and ageing.

This review of the theories of ageing and the wellbeing of older people indicates that the perspectives of ageing have evolved from views of old age as a stage of disengagement, to one that is dynamic, with older people being actively engaged in society by adapting their interactions in the environment (social and physical) to achieve emotionally rewarding goals. There is, in general, wide support for perspectives that see ageing as a dynamic process of engagement and interaction with the environment. At the same time, there is an indication that the disengagement perspective continues to be influential, especially in public policy, as evident in the retirement and pension policies in a number of societies. Therefore, the predominant theoretical perspectives on ageing in a given society will vary in different country contexts, with subsequent implications for the wellbeing of older people in that society as they affect the capabilities of the individual to adapt and interact with the environment. An ecological perspective on ageing, hence, appears to be appropriate in studying the wellbeing of older people in different contexts, as it provides for the integration of theoretical perspectives of wellbeing such as the capabilities, adaptation and socio-emotional selectivity that shape the determinants of wellbeing.

3.2 Measurement of the wellbeing of older people

The variations in the level of wellbeing across different countries and by individual characteristics (such as age, gender), raises the question as to how wellbeing is conceptualised and measured in research. The scholarship on wellbeing indicates that some researchers consider that since it is a subjective construct, it should be left as such (Bond & Corner, 2004). Others believe that the conceptualisations with objective indicators on life domains improve accuracy of the personal assessment of wellbeing (Schwarz & Strack, 1999). Capability sets for wellbeing have, thus, been conceptualised using life domains that relate to specific areas of functioning of the individual (Rojas, 2007). What follows is a review of the different approaches adopted in research for the measurement of wellbeing.

3.2.1 Subjective wellbeing

Wellbeing is most widely operationalised as ‘satisfaction with life’ (European Values Study Group & World Values Survey, 2011; International Wellbeing Group, 2006). The subjective measures include single item and multiple item scales and are widely used in studies of wellbeing and happiness. Single item measures include self-reported questions such as “*On the whole how satisfied are you with the life you lead?*” as used in Euro-barometer surveys with the responses recorded on a scale of 4, with 4 being ‘*very satisfied*’ and 1 as ‘*not at all satisfied*’ (Veenhoven, 2007, p. 11).

Multi-item scales that have been widely used include the Satisfaction with Life Scale (SWLS) and the Personal Wellbeing Index (Cummins et al., 2003; Diener, Emmons, Larsen, & Griffin, 1985; Lau et al., 2005; Veenhoven, 2007). The SWLS is a validated measure, widely used in research on subjective wellbeing in different country contexts (Diener, 2009). It is a summative measure based on self-reports on five items, covering life domains of social relationships, work and education, and self. The answers are rated on a scale of 1 to 7, with 7 being ‘*strongly agree*’ and 1 being ‘*strongly disagree*’ (Diener et al., 1985).

Another validated and widely used measure in research on wellbeing is the Personal Wellbeing Index (International Wellbeing Group, 2006). This is a multi-item measure containing eight items of satisfaction representing a first level deconstruction of the ‘overall satisfaction with life’ question. These are the life

domains of “standard of living, health, achieving in life, relationships, safety, community-connectedness, future security, and religion” (International Wellbeing Group, 2006, p. 8). Although the index has been modified for different population subgroups such as persons with intellectual disability and cognitive impairment, it has not been modified specifically for older populations (Cummins & Lau, 2005).

3.2.2 Measuring wellbeing through life domains

Perhaps because most societal perspectives on ageing consider older people as a special group requiring support and public policy action (Angus & Reeve, 2006), research into the wellbeing of older people is typically informed by the eudaimonic perspective and a capabilities approach (Argyle, 1999; Cummins, 1996; Koopman-Boyden & Waldegrave, 2009; Power & Shmidt, 2006; Rojas, 2007; van Praag, Frijters, & Ferrer-i-Carbonell, 2003). Conceptualisations based on the capabilities approach identify capability sets predominantly in broad areas of functioning in life, and are referred to as ‘life domains’ (Cummins, 1996; van Praag et al., 2003; World Health Organization, 1997). Diener and Suh (1997) note that the use of specific life domains enables the cognitive assessment of what is important for the wellbeing of older people, often using objective indicators.

One of the popular conceptualisations of wellbeing using objective measures is the Quality of Life model (QoL) of the World Health Organisation. Some researchers use the life domains of the QoL model as determinants of wellbeing (Cummins, 1996), while others include a subjective wellbeing measure as a component of QoL in addition to the life domains (Bond & Corner, 2004). The original conceptual model of QoL includes the domains of physical, psychological, social, environmental and spiritual aspects of life. Each life domain is viewed as a key component affecting health and wellbeing (World Health Organization, 1997). Brazier and Roberts (2004) regard this conceptualisation to be focussed solely on health (rather than wellbeing), and they relate findings accordingly. In addition, concerns regarding the applicability of the QoL model to the older population have led to the development of a modified version of QoL, namely the World Health Organisation’s Quality of Life - Old instrument (WHOQOL-OLD). This version for older people includes six life domains: sensory abilities, past present and future activities, social participation, death and dying, autonomy and intimacy (Power & Shmidt, 2006, p. 15). It has been used

mostly in western countries but apart from investigating its usefulness during the development stage of the research tool, no examples of its use in studies on wellbeing of older people in the developing countries was found in the literature.

Such conceptualisations have also been found to be useful in understanding the differences in wellbeing by age and gender among older people. Several studies have observed that wellbeing among people aged 80+ years is lower than that of people aged 65-79 years (Argyle, 1999; Blanchflower & Oswald, 2008; Cummins et al., 2003; Diener et al., 1999). This differential has been attributed to the poor health status of the older age group, specifically functional and cognitive decline with age (Gwozdz & Sousa-Poza, 2010). Gender differences in wellbeing, in general, have been associated with gender roles and the status of men and women in society (Nolen-Hoeksema & Rusting, 1999), with marital status suggested as the single most important factor determining this difference in wellbeing among older people (Bailey & Snyder, 2007; Pinquart & Sörensen, 2001). These differences point to the need to recognise the heterogeneity among older people and their environmental context when conceptualising wellbeing. Such observations further support the measurement of wellbeing conceptualised through life domains.

In summary, measurement of wellbeing has involved the use of both subjective and objective measures, often operationalised through life domains. Subjective indicators of wellbeing are commonly used in research into psychological wellbeing and by the proponents of the hedonic perspective. Such research has used either single item measures of ‘satisfaction with life’ or multiple-item indices that measure satisfaction with different life domains. Research informed by the eudaimonic perspective has used a combination of subjective and objective measures based on multi-dimensional conceptual models composed of life domains.

3.3 Key life domains affecting the wellbeing of older people

Researchers in different country contexts include different life domains when conceptualising the wellbeing of older people. The commonly studied life domains in relation to wellbeing include health, education, living condition, family, social support, social connectedness, work, income, family, religion and leisure and recreation (Argyle, 1999; Diener et al., 1999). The life domains such

as health, living arrangements, social connectedness and economic status have consistently shown robust correlations with the wellbeing of older people in different country contexts, for example in the European Study on Adult Wellbeing across six countries (Ferring et al., 2004), the Berlin Ageing Study (German Socio-economic Panel Study & Max Planck Institute for Human Development, 2011), the English Longitudinal Study on Ageing (Netuveli, Wiggins, Hildon, Montgomery, & Blane, 2006), the Enhancing Wellbeing of an Ageing Society in New Zealand study (Koopman-Boyden & Waldegrave, 2009), and Life and Living in Advanced Age Cohort Study (LiLACS) (Hayman et al., 2012). Other studies on successful ageing in the Asian countries of Indonesia, Thailand, Sri Lanka, and research on wellbeing among older people in China (Lamb & Myers, 1999; Wang, Shang, & Xu, 2011) have also shown that health, living arrangements, social support and income are essential for successful ageing (see Table 3.3 for a summary of studies using different life domains in conceptualising the wellbeing of older people).

As noted earlier, research into the wellbeing of older people has largely been concentrated in industrialised societies, much less in developing countries and even less in SIDS. Additionally, studies on older people in developing countries and SIDS generally do not focus on wellbeing, but instead have been more concerned with health and the determinants of health. Singapore is the only SIDS where older people's life circumstances have been studied through the Singapore Longitudinal Ageing Studies, which has included dimensions of health, social network, social support, and work and employment (Schwingel, Niti, Tang, & Ng, 2009). However, as Singapore is more economically advanced than other SIDS, the study did not address questions around access to basic goods and services which are often not available in developing countries (Kuan, Jiuan, & Keng, 2009; Zorondo-Rodríguez et al., 2014). Access to services, however, has been found to be an important aspect for the wellbeing of older people in rural areas, and even in industrialised countries such as Australia (Davis & Bartlett, 2008; Winterton & Warburton, 2011). Wang, Shang, & Xu (2011), for example, have observed that in China older people in rural areas have lower wellbeing than those in urban areas. Furthermore, in rural areas, access to health care, transport and communication, have been noted as factors that impacts on the health and

wellbeing of older people (Davis & Bartlett, 2008; Knight, Song, & Gunatilaka, 2009).

Table 3.3: Life domains covered in selected research related to wellbeing of older people

Research	Countries/ Territories	Domains covered
BASE- Berlin Ageing Study-I (Baltes & Smith, 1997)	Germany (Berlin)	Physical status, mental health, psychological functioning, social participation, economic status
Study of successful ageing in three Asian countries (Lamb & Myers, 1999)	Indonesia, Sri Lanka & Thailand	Health, life's work, attitude, money, household composition
SHARE-Survey of Health, Ageing and Retirement in Europe (Börsch-Supan, Hank, & Jürges, 2005)	Austria, Denmark, France, Germany, Greece, Netherlands, Italy, Spain, Sweden & Switzerland	Health, psychological health, economic status, social support
ELSA- English Longitudinal Study of Ageing (Netuveli et al., 2006)	England	Demographic characteristics, health, social relationship, education, & financial situation
The Australian Longitudinal Study of Ageing (Luszcz, 2006)	Australia (Adelaide)	Physical health, cognition & psychological health, health behaviours, health service use, education, & income
SABE-Survey of Health, Well-Being of Elders in Latin America & the Caribbean (Palloni & McEniry, 2007)	Argentina, *Barbados, Brazil, Chile, Cuba, Mexico & Uruguay	Health, household composition, work & income, property and assets, & intra-family & institutional transfers
General health and social status of elderly persons in Trinidad (Rawlins et al., 2008)	*Trinidad & Tobago	Health, living arrangement, loneliness, & income
Chinese Longitudinal Healthy Longevity Study (Yi, Vaupel, Zhenyu, Yuzhi, & Chunyuan, 2009)	China (22 provinces)	Health & disability, family, socioeconomic status, & behavioural risk-factors
Singapore Longitudinal Ageing studies (Schwingel, Niti, Tang, & Ng, 2009)	*Singapore	General health status & physical functioning, social network & support, & work & employment
EWAS – Enhancing Wellbeing in an Ageing Society (Koopman-Boyden & Waldegrave, 2009)	New Zealand	Health, education, work, economic standard, leisure & recreation, culture & religion, social connectedness, living arrangement, safety, rights
Active ageing: A qualitative study in six Caribbean countries (Cloos et al., 2010)	*Bahamas, *Barbados, *Guyana, *Jamaica, *Suriname, & *Trinidad & Tobago	Health & social services, social support, social participation, economic status
Psychological Wellbeing in Elderly (Momtaz et al., 2011)	Malaysia (11 states)	Mental health
Life and Living in Advanced Age (LiLAC study) (Hayman et al., 2012)	New Zealand	Health (physical, functional, psychological, mental), health behaviours and services, culture, social network and support, activities, transport, housing, environment, politics and rights

*Small Island Developing States (SIDS)

Among the several life domains associated with wellbeing, health, social connectedness, economic status and living arrangements have been found to be important correlates of the wellbeing of older people in a variety of developmental contexts. The findings on the relationship of these life domains with wellbeing, along with the measures of these life domains used in research, are now reviewed.

3.3.1 Health

Health is a consistently featured life domain in the models of wellbeing of older people, and is widely researched. This is to be expected given the World Health Organisation's broadly accepted definition of health as "the state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (2009, p. 1). This very inclusive definition, however, poses problems for scholars in conceptualising health and wellbeing as separate entities. Some researchers criticise the World Health Organisation's definition by suggesting that it correlates more with happiness than with health (Rodolfo, 1997). Health is conceptualised in the investigation of wellbeing in terms of the perception of health, as well as in terms of objective measures of health including measures of chronic disease conditions, measures of activities of daily living, and self-reported measures of health status (Clarke, Marshall, Ryff, & Rosenthal, 2000; Garatachea et al., 2009; Gómez-Olivé, Thorogood, Clark, Kahn, & Tollman, 2010; Netuveli et al., 2006). It is, however, the satisfaction with and perception of overall health status that has been shown to have the stronger correlations with wellbeing than the objective health conditions (Berg, Hassing, McClearn, & Johansson, 2006; Enkvist, Ekström, & Elmståhl, 2012).

The satisfaction with health and perceptions of good health have been found to correlate positively with subjective wellbeing despite the frailty and chronic disease conditions prevalent among older people (Berg et al., 2006; Pool, Amey, Cameron, & van der Pas, 2009). Objective measures such as poor physical health and co-morbidities have also been found to correlate negatively with subjective wellbeing (Kunzmann, Little, & Smith, 2000; Momtaz et al., 2011). A number of studies show that the perception of health status is linked to functionality and mobility, and a negative effect is observed in the subjective wellbeing of older people with functional restrictions (Bowling, Farquhar, Grundy, & Formby, 1993; Clarke et al., 2000; Larson, 1978; Netuveli et al., 2006). This observation is consistent with findings among younger adult populations, where those with

disabilities have lower subjective wellbeing compared to those without any disability (Mehnert, Krauss, Nadler, & Boyd, 1990; Uppal, 2006). Studies in Asia-Pacific countries such as Thailand show that despite the presence of chronic disease conditions, older people who experience more difficulty in their activities of daily living, rate their health to be poorer than those who have less difficulty (Haseen, Adhikari, & Soonthornthada, 2010). The stronger link between self-reported health and subjective wellbeing is explained as being due to the conceptualisation of health by older people based on their capabilities to carry out personally valued tasks (Garatachea et al., 2009; Netuveli et al., 2006).

In general, studies on older populations in developing countries focus on health status and access to health services, rather than associating health with wellbeing. Research in Caribbean SIDS such as Bahamas, Barbados, Guyana, Jamaica, Suriname, Trinidad and Tobago has shown that the health care services are often not accessible, do not provide continuity of care, and focus on curative services (Cloos et al., 2010). A study on the health of older people (50-90 years) in Maldives in 2001 showed that 45 per cent of this group did not feel that their health affected their normal activities, despite the presence of chronic disease conditions (Jameel, 2003). Although there are no studies linking wellbeing and health in most of the SIDS studies, studies in Singapore showed that satisfaction with health is a key determinant of wellbeing (Kuan & Jiuan, 2012; Kuan et al., 2009).

Health is, therefore, an important determinant of the wellbeing of older people in a range of country contexts. Although health is conceptualised in different ways, the self-reported level of health shows a significantly greater correlation with wellbeing than the objective health measures. Again, research into health and wellbeing is limited to industrialised or middle income countries where health services are well developed. Therefore, this does not provide a basis to draw conclusions about the extent to which health contributes to the wellbeing of older people in SIDS where health services are undeveloped and access is poor due to economic and geo-spatial challenges.

3.3.2 Social connectedness

Social connectedness is one of the life domains that has consistently shown a positive correlation with quality of life and wellbeing, especially among older

populations across different societies (Larson, 1978). Correspondingly, concepts such as social isolation and loneliness have been associated with poor wellbeing (Hawthorne, 2006; Thompson & Heller, 1990). In addition to being correlated with wellbeing, aspects of social connectedness have also shown positive effects on physical and mental health (Ashida & Heaney, 2008; Rowe & Kahn, 1987; Zimet, Dahlem, Zimet, & Farley, 1988).

Given this clear association with wellbeing, a careful definition of social connectedness is important. In research, social connectedness is defined by Ashida and Heaney as the “presence or absence of social ties” (2008, p. 857). In New Zealand, the Ministry of Social Development defines social connectedness as the “relationships people have with others” (2008, p. 110). Social connectedness is often conceptualised in conjunction with loneliness. de Jong Gierveld (1998) indicates that the concept of loneliness needs to be understood as being more than the number of contacts an individual has; that it is subjective with an emotional component and related to time. This view can be applied to social connectedness as a large number of social contacts does not always lead to a high level of social connectedness, and may even be associated with experiences of social disconnectedness or loneliness (van Baarsen, Snijders, Smit, & van Duijn, 2001). It can thus be inferred that if loneliness is “the situation experienced by the individual as one where there is an unpleasant or inadmissible lack of (quality of) certain relationships”, social connectedness is the opposite (de Jong Gierveld, 1998, p. 73).

Social connectedness is identified by some researchers by focusing on different aspects of social relationships such as social ties, social networks, social support and social integration (Berkman, Glass, Brissette, & Seeman, 2000). Others have also included social contact and participation in community organisations (Koopman-Boyden & van der Pas, 2009). While these aspects are examined under the broad umbrella of social connectedness, researchers also make distinctions between these terms and argue that these are different aspects of social relationships within the social network of an individual (Ashida & Heaney, 2008; Berkman & Glass, 2000). There is an ongoing critique regarding the assumption of the network size as an indication of social connectedness and social support. In a more Durkheimian approach, Berkman et al. (2000) examined the wider social and cultural context, and proposed a framework of a social network that includes

both upstream social structural conditions and downstream behavioural, psychological and physiological pathways that impact on health and wellbeing. This conceptualisation provides for a more comprehensive approach to identifying network characteristics that allow for social support, social engagement, person-to-person contacts and access to resources (Berkman et al., 2000; Berkman & Glass, 2000). Proponents of this concept view social connectedness through the opportunities provided in the context of a social network (Ashida & Heaney, 2008). The characteristics of social networks that shape social connectedness include the size and composition of the network, physical proximity of network members, and number of members with frequent contact (Ashida & Heaney, 2008). For example, in the English Longitudinal Study on Ageing, Netuveli et al. (2006) observed that having a number of close relationships and frequent contact with friends significantly increased the quality of life of older people. Social support, especially non-instrumental, emotional support, has been shown to operate through social networks affecting the social connectedness of an individual (Ashida & Heaney, 2008; Firoi, Antonucci, & Cortina, 2006). In studying aspects related to older people in developing countries, the focus has been more on social support in terms of the provision of care rather than on social connectedness as an end in itself. For example, research on ageing in Pacific and Caribbean SIDS has considered issues related to social support and care rather than social connectedness itself, perhaps due to the extended family norm and cultural belief that children should provide care and support for their elderly parents (Cloos et al., 2010; Hayes, 2009).

While social connectedness plays a critical role in wellbeing, research has shown that with age, the size of social networks declines (Lang & Carstensen, 1994; Pillmer, Moen, Wethington, & Glasgow, 2000). The life course perspective suggests that social relationships form a convoy around the individual from childhood to old age, but during the life course these relationships with colleagues, neighbours, family and friends terminate due to death, migration, divorce, retirement and health reasons (Havens et al., 2004; Kahn & Antonucci, 1980). However, van Tilburg (1998) argued that losses in the network may be compensated by gains through life events such as the birth of grandchildren, leading to changes in the composition of social networks and their function. Even those older people who have many social contacts, have been observed to focus

on maintaining a core social network that is emotionally supportive and rewarding (Lang & Carstensen, 1994; van Tilburg, 1998). This observation is explained by the socio-emotional selectivity of older people who become more discriminating in their social contacts and often choose to maintain only those social contacts that are emotionally meaningful, rather than acquaintances and novel social contacts (Carstensen, 1992; Carstensen et al., 2003). Thus, in older years, social connectedness is preferably maintained through a network of family and friends that provide emotionally rewarding experiences, rather than colleagues or casual acquaintances.

Research has shown that various aspects of social connectedness are associated with positive wellbeing (Koopman-Boyden & van der Pas, 2009; Larson, 1978; Pinquart & Sörensen, 2001). Furthermore, the Survey of Health, Ageing and Retirement in Europe and studies in China have shown that the degree and quality of social interactions with family members and friends enhances the wellbeing of older people, with the quality of the social contact having a more robust correlation with subjective wellbeing (Deng, Hu, Wu, Dong, & Wu, 2010; Kohli, Hank, & Kunemund, 2009; Merz & Huxhold, 2010; Pinquart & Sörensen, 2000). Similarly, research in New Zealand has shown that satisfaction with social contacts is associated with wellbeing while the number of contacts did not influence their wellbeing (Koopman-Boyden & van der Pas, 2009). Thus, these findings provide support for the theoretical perspective of socio-emotional selectivity related to the social network and social connectedness of older people.

Berkman et al. (2000) proposed that the characteristics of the wider social context (cultural norms and values), social change (urbanization), economic factors (poverty) and public policies also influence formation of networks and subsequent social relationships. For example, researchers have noted that religious activities which involve social interaction have a positive effect on wellbeing (Witter, Stock, Okun, & Haring, 1985). In countries such as China and Algeria, and among ethnic minorities in western countries and aboriginal populations as in Australia, the relationship between engagement in religious practices and wellbeing has been found to be significant, with the association of religiosity as practices that promote social connectedness (Brown & Tierney, 2009; McEwan, Tsey, & Empowerment Research Team, 2008; McFadden, 1999; Tiliouine, Cummins, & Davern, 2008). In Singapore, social relationships with children,

parents and friends, and involvement in leisure and spiritual activities were found to be important dimensions that correlate with wellbeing (Kuan et al., 2009). A study among Caribbean SIDS found that older people often engage in a number of informal social activities, but have noted that the level of social engagement is linked by their socioeconomic situation (Cloos et al., 2010).

Proximity has been identified as a factor closely related to the extent and quality of social interaction, either with family or friends (Bultena, 1969; Pillermer et al., 2000). In the context of spatially isolated populations of SIDS (such as those in very small islands dispersed over the ocean or hard to reach rural areas), physical proximity to network members is of special interest when examining social connectedness. Characteristics of spatially isolated societies include few occupational choices, limited health and social services, poor transport, sensitivity to traditional and religious values, and limited privacy (Leipert & Reutter, 1998). The spatial isolation, with its associated characteristics, leads to migration of the younger age groups to urban areas for work and education, leaving a predominantly older population in the isolated setting (Havens et al., 2004). Migration of adult children causes a reduction in the opportunities for social contact, thereby undermining family interactions for older people (Bultena, 1969; Cloos et al., 2010). In Pacific SIDS, older people in both rural and urban areas were found to be socially isolated, perceived as receiving a low level of respect and facing a more difficult financial situation than younger people (Havens et al., 2004). It can, thus, be inferred that the older people in spatially isolated areas experience a number of factors that have the potential to decrease their opportunities for social contact with their family and thereby increase their wellbeing. As Berkman et al. (2000) suggest, there is a need for further study of the contextual aspects such as the socio-economic situation, cultural values and norms, and physical proximity to better understand the association of these characteristics with social connectedness, many of which are present in SIDS.

Among the measures of social connectedness that have been operationalised in previous research is the Social Connectedness Scale that includes aspects of 'connectedness', 'affiliation' and 'companionship' (Lee & Robbins, 1995, p. 236) and the Register-Connectedness Scale for older people which contains 72 items (Register, Herman, & Tavakoli, 2011). Other instruments to measure related aspects such as social support include the Social Support Scale with six items

(Sarason, Sarason, Shearin, & Pierce, 1987) and the 2-Way Social Support Scale (Shakespeare-Finch & Obst, 2011). Other instruments related to aspects of social connectedness include the Friendship Scale (Hawthorne, 2006) and the subscale of intimacy in the WHOQOL-OLD instrument (Power & Shmidt, 2006). These scales use items measuring network structure and functionality, including network size, composition and frequency of contacts. Social participation includes items related to engagement in the leisure, cultural, religious and voluntary community activities. These scales, however, have not been widely used in different socio-cultural settings across countries.

An alternative approach has been to measure the opposite effect to social connectedness as a proxy measure of social connectedness, as set out in the Loneliness Scale (de Jong Gierveld & van Tilburg, 2006) and the Social Disconnected Scale (Cornwell & Waite, 2009). The Loneliness Scale has been widely used in different socio-cultural contexts and is internationally validated, but it does not capture aspects of social engagement.

This review of research shows that social connectedness in itself is strongly correlated with wellbeing and that different aspects of social connectedness vary as important determinants of wellbeing of older people. The numerous definitions of social connectedness have resulted in different conceptualisations that cover aspects of social ties, social network, social participation and social support. Another striking observation is that social connectedness has not been commonly researched as a life domain in developing countries, and, when studied, the focus has been on social support and care. This review of research, therefore, cannot provide a comprehensive understanding of how contextual aspects shape social connectedness in a developing country context. Instead it is suggested that in addition to individual network characteristics being studied, in SIDS specifically the characteristics of the wider social networks and social engagement in society need to be accounted for in the investigation of the social connectedness of older people.

3.3.3 Economic status

The relationship between economic status and wellbeing has not been consistent across countries. Cross-country data from the World Values surveys and the Gallop World Poll have shown that in developed countries the relationship

between income (in all age groups) and wellbeing becomes curvilinear as income increases until such time as there is no equivalent increase in wellbeing despite increases in income. The curvilinear relationship between income and wellbeing in developed countries is generally referred to as the 'Easterlin's paradox', and is explained by the needs theory that suggests that income acts a predictor of wellbeing until such time as the biological and basic needs are met, and thereafter the association decreases, as has been observed in the economic theory of diminishing marginal utility (Cummins, 2000b; Diener & Biswas-Diener, 2002; Diener & Suh, 1997; Easterlin, 2001, 2006). However, in developing countries there is a positive correlation of income and wellbeing, suggesting that the level of income is still low (Clark, Frijters, & Shields, 2008; Kahneman & Deaton, 2010). Singapore, a more economically advanced country than other SIDS, shows a similar pattern to other developing countries, with a significant increase in the level of wellbeing associated with increased income (Kuan et al., 2009). Researchers have proposed alternative explanations based on psychological processes such as relative income and aspirations of people for such observations (Clark et al., 2008; Diener & Biswas-Diener, 2002; Easterlin, 2005; Ferrer-i-Carbonell, 2005; Piquart & Sörensen, 2000).

In contrast to the Easterlin's paradox over all age groups, economic status has been found to have a positive correlation with wellbeing of older people (Clark, Westergård-Nielsen, & Kristensen, 2009; Deaton, 2010; Dolan, Peasgood, & White, 2008), but it has been noted that the size of the correlation is smaller than with social aspects such as health and social relationships (Deaton, 2010; Howell & Howell, 2008). This observation has been linked with the perspective that older people value non-material goals more than material or financial goals, suggesting a shift in their aspiration from public goals to more personal goals (Carstensen et al., 2003; Piquart & Sörensen, 2000). Other researchers have suggested that older people base judgements on their past financial situation and in comparison with others around them when responding to their current financial situation (Easterlin, 2001, 2006). In the UK, a satisfaction paradox has been observed in older ages where older people had high financial satisfaction even with lower material resources (Burholt & Windle, 2006). It has been suggested that in addition to the lower aspirations of older people for material resources,

psychological processes rather than cognitive processes mediate a person's satisfaction (Cummins, 2000b; Diener & Biswas-Diener, 2002).

In the context of developing countries, income sources include a number of in-kind payments and informal remittances (Smith, Sim, Scharf, & Phillipson, 2004; Tiliouine, Cummins, & Davern, 2006). Researchers in the Asia-Pacific region have observed that older people often hold a position of authority in their households, and the relationships with kin often protects them from financial stresses (Camfield, Choudhury, & Devine, 2009; Diener & Biswas-Diener, 2002; Rudkin, 1993). Older women in these countries were observed to receive greater filial piety than older men, but they receive lower remittances and have lower material resources than men (Emmerson & Muriel, 2008; Rudkin, 1993).

There is ongoing debate as to the most relevant measure of economic status for wellbeing studies, and whether relative income is a better measure than absolute income (Clark et al., 2009; Easterlin, 2006; Ferrer-i-Carbonell, 2005), while others observe that a measure of change in income, an increase or a decrease over a specified time period, is preferable to absolute income (Deaton, 2010). While it has been observed that composite measures, such as household wealth indicators, have a stronger correlation with wellbeing than individual's income measures (Howell & Howell, 2008), it has been suggested that it is not the absolute income itself but the perceived adequacy of the income to meet the individual's own needs that is important for their wellbeing (Ferrer-i-Carbonell, 2005). While a number of measures are used to determine the economic status, the subjective measure of satisfaction with the financial situation (be the person wealthy or poor) has been shown to make a stronger contribution to wellbeing than objective economic indicators such as monetary income (Diener & Biswas-Diener, 2002; Dolan et al., 2008).

Thus, although there is a correlation between economic status and the wellbeing of older people, the relationship differs depending on the developmental situation of the research context. The association varies further among older age groups and has been attributed to the motivational shifts at older ages, and the filial piety with associated informal remittances that protects older people in collectivistic societies such as SIDS. Economic status, therefore, needs to be conceptualised in a form best suited to the research context. This review suggests that in developing

country contexts, such as SIDS, factors related to family and household structures will determine the older person's perception of their economic status rather than their monetary income.

3.3.4 Living arrangements

Living arrangements are generally conceptualised in research on the wellbeing of older people as taking into account the social structure of the household: whether an individual lives alone or co-resides, and the interactions that occur within the household. Studies of wellbeing of older populations in different country contexts, such as the United States, New Zealand and Malaysia show that being married and living with a spouse or partner has a positive correlation with wellbeing (Argyle, 1999; Larson, 1978; Momtaz et al., 2011; van der Pas, 2009). This observation has been attributed to the companionship that results from living with someone else, the absence of loneliness, and the mutual support that partners provide (Peters & Liefbroer, 1997; Rawlins et al., 2008).

Living arrangements are an important aspect of the wellbeing of older people in developing countries, especially where co-residence with extended family is the norm, with older parents residing with adult children and grandchildren (United Nations, 2010b). This situation is common in SIDS where households are multigenerational, as observed in the Pacific SIDS and also Maldives (Hayes, 2009; Ministry of Planning and National Development, 2008). However, with urbanisation, multigenerational households in Asia-Pacific countries including SIDS are disintegrating and moving towards nuclear families (Cloos et al., 2010; Hayes, 2009; United Nations, 2002a). Among some developing countries such as Malaysia, Philippines and Korea, and SIDS such as Fiji, co-residence with children and relatives is more common in the urban areas than in non-urban areas, even when the older person is living with his or her spouse (DaVanzo & Chan, 1994; Martin, 1989), perhaps due to higher cost of housing in urban areas. There is broad consensus that it is not the physical aspects of living conditions that are significant for the wellbeing of older people (Frankenberg, Chan, & Ofstedal, 2002), but it is the social aspect of co-residence, where the interactions and relationships with the family and kin are seen to contribute to the wellbeing of the older people (Cramm, van Dijk & Nieboer, 2013; de Jong Gierveld & van Tilburg, 1999; Oswald, Jopp, Rott & Wahl, 2011; Phillips et al., 2005). Studies in Asia have not shown a significant correlation between health status and co-

residence (DaVanzo & Chan, 1994; Lamb & Myers, 1999). Nevertheless, a positive correlation with health has been observed in studies in some European countries such as Spain, and this has been attributed to the support provided by kin and children in the co-residence setting (Beekman et al., 1997; Zunzunegui, Béland, & Otero, 2001).

These findings indicate that the correlation between living arrangements and the wellbeing of older people acts through social relationships and interactions. The research is lacking, however, as to how co-residence affects the wellbeing of older people in an environment where co-residence is almost universal, as is the case of SIDS.

In summary, overall the conceptualisation and measures used for the life domains often vary according to the socio-economic context of the research. Despite this, it is the life domains of health and social connectedness that have consistently shown a robust correlation with wellbeing, irrespective of the measures used, and in different developmental contexts. The effects of living arrangements on wellbeing appear to be mediated through social interactions, and the relationships were found to be not significant in societies where collectivist social arrangements prevailed. The effects of economic status on wellbeing were also found to vary according to the context and measures used in research. The review of research has, thus, not been able to provide a basis to draw conclusions about critical life domains that impact on the wellbeing of older people in SIDS. Nevertheless, it has provided useful insight as to some of the differences that need to be considered in conceptualising important life domains that impact on wellbeing in the current research.

3.3.5 Summary of the review of research on wellbeing and ageing

Wellbeing continues to be broadly viewed from either a hedonic or eudaimonic perspective, with some suggesting that it encompasses features of both. For the proponents of the hedonic view, wellbeing relates to happiness and utility, while for those of the eudaimonic view, wellbeing has a moral notion and is achieved through the attainment of certain valued goals based on the circumstances of the individual. These goals are self-determined and selective, and are mediated by psychological needs that are in turn affected by the socio-economic environment. The capabilities approach is set within this perspective and bases accounts of

wellbeing on the capabilities of the individual – the ability to be and to do that which is valued. This approach recognises that capabilities vary from individual to individual based on interpersonal, social and environmental differences. Hence, important capabilities for wellbeing are perceived differently across societies in that valued functionings and goals are different for people in different life stages and contexts.

The wellbeing of older people has been conceptualised with the view that ageing is a dynamic process where older people continue to be active and engage with their environment. In identifying important capabilities for older people, there is potential to draw on the ecological perspective that emphasises the importance of adaptation and person-environment interactions, selectivity and motivational shifts to non-material goals. The capabilities for wellbeing are generally conceptualised and measured through life domains that correspond to areas of functioning in life, using subjective or objective measures or a combination of both. To date, the common conceptualisation of important functioning using the capabilities approach in research is primarily based on industrialised country contexts and, therefore, does not capture the unique contextual aspects relevant to developing societies with different socio-cultural values and developmental challenges. For instance, living arrangements have been observed to be a significant life domain that impacts on wellbeing in industrialised contexts, but not in developing countries. Another gap noted is that the capabilities approach is applied strictly to capabilities of the individual and hence capabilities that correspond to the wider environment are not reflected in these conceptualisations. A wider application of the capabilities approach is required since, unlike in industrialised contexts, in SIDS there are unmet needs for basic goods and services, and dependency and inter-dependency predominates. The review of the research, nevertheless, provides a valuable platform to develop a relevant theoretical perspective for conceptualising the wellbeing of older people in SIDS.

3.4 Theoretical approach for the current research

What follows is an approach to theorise and subsequently understand the wellbeing of older people in SIDS contexts where people live in geographically isolated, small island communities that are collectivist, consist of closely knit families, and where older people have a certain social standing within the family and community. It is informed by the eudaimonic view of wellbeing that maintains certain socially accepted needs should be fulfilled in order to attain a state of wellbeing, and it builds on the notion of capabilities that determine a person's state of being (Deci & Ryan, 2008; Griffin, 1986; Nussbaum & Sen, 1993; Sen, 1993). Wellbeing is regarded as being achieved through experiences in a range of life domains, based on the opportunities available to the person. This approach is also informed by the ecological perspective of ageing that emphasises the person-environment interactions where older people's functioning is determined by their adaptation to the environment and engagement in personally valued tasks (Clark & Gough, 2005; Clark & Anderson, 1967; Diener & Lucas, 1999; Diener, Oishi, & Lucas, 2003; Wahl et al., 2012). This position further draws on the theories of socio-emotional selectivity and self-determination (Carstensen et al., 2003; Deci & Ryan, 2011; Ryan & Deci, 2000) which recognises that people in their later years shift their motivation away from materialistic goals to emotionally rewarding goals.

Additionally, the valued functioning and the evaluative norms that correspond with the capability sets for older people's wellbeing will be different, based on the socio-cultural and geo-spatial environment. This is because the socio-cultural aspects that are valued by people in an individualistic society (industrialised countries) will be different from those in a collectivistic society (as is in SIDS), and the geo-spatial characteristics in SIDS affects the extent to which a person has access to the opportunities necessary to live a valued life.

Thus the theorising of the wellbeing of older people in SIDS also requires some integration of the theoretical perspectives on wellbeing and ageing with theories of development in SIDS. Considering that the process of development in SIDS is often challenged by providing access to goods and services, and changes in economic, political and social institutions (Division of Sustainable Development, 2014a, 2014b; Mohanty, 2011; Ogan, 2005), this research draws on the

developmental perspective where the goal of development is the wellbeing of the society (White, 2009, 2010). In the SIDS context, the capabilities approach is embraced in its broadest sense in that capabilities also include social and material resources in the wider environment (Cohen, 1993; Sen, 1993). The capability approach ties in the eudaimonic perspective of wellbeing and complements the ecological perspective of ageing, specifically in the SIDS context. Thus, the wellbeing of older people is seen to be determined not only through the person's individual capability sets but also through the capability sets derived from the socio-cultural and geo-spatial characteristics of SIDS.

Hence, the premise of this research is that, in the context of SIDS, an older person's wellbeing is a state of being achieved by the person's capabilities to fulfil emotionally rewarding goals, engage in activities that are valued by the older person, and interact in the socio-cultural and geo-spatial environmental where they live. In SIDS, older people's goals, valued functionings and the evaluative norms are different due to the collectivist social norms of the small island societies and the distinct geo-spatial features of the islands. This results in differences in the valued capability sets for achieving wellbeing, being determined not only by the person's individual characteristics, but also by those related to the wider socio-cultural and geo-spatial environment of the island where the older person lives.

3.5 Conceptual model of wellbeing of older people in SIDS

The proposed integrated theoretical perspective is conceptualised in a multi-dimensional model of wellbeing of older people relevant to the socio-cultural and geo-spatial context of SIDS. The set of capabilities that determine wellbeing is conceptualised through life domains that represent areas of valued functioning in life (Rojas, 2007; van Praag et al., 2003). Although numerous life domains have been researched with respect to the wellbeing of older people, in this research, based on the stakeholder consultations in Maldives, five life domains are identified as relevant to the developmental context of SIDS: health, social connectedness, economic status, access to goods and services, and conformity to social values and norms (Figure 3.1).

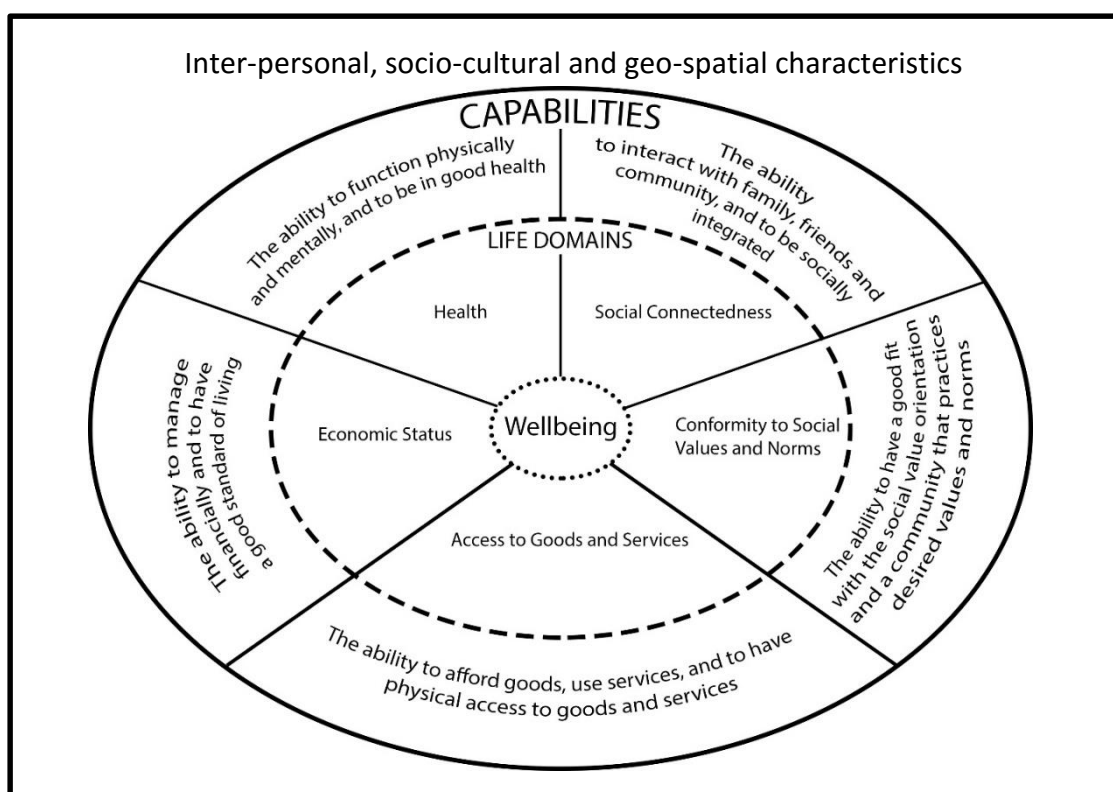


Figure 3.1: Conceptual model of the wellbeing of older people in a SIDS context

Health: This has consistently been found across different country contexts to be an important life domain that provides capabilities for wellbeing. Not only does it allow for important functioning, but good health provides for a sense of wellness and is often used interchangeably within some cultural contexts. For instance, as discussed earlier in this chapter, the definition of health often includes the term wellbeing, while many definitions of wellbeing include health, as it is difficult to untangle health from wellbeing. Hence, the health status of the individual is expected to be an important aspect that impacts on wellbeing, with physical and mental health influencing the perception of health status and the ability of the individual to engage in valued functions.

Social connectedness: Given the collectivist nature of the societies and extended family norm in the SIDS, social connectedness is expected to be a key area of functioning for older people. Although research has focussed on different aspects of social connectedness as a determinant of wellbeing, in this research it is regarded as a single life domain that encompasses structural and functional characteristics of social interactions. These characteristics in a SIDS context are, however, different from industrialised country contexts as socio-cultural practices

assert the central role of family in social networks, while the geo-spatial situation results in the separation of older people from their kin and other family relations. Hence, the factors constituting social connectedness in the context of SIDS will be different, with the family taking a central place in the social networks, social support and social engagement. These factors characterise the ability to interact with family, friends and community, and to be socially integrated thereby constituting the important aspects of social connectedness that contributes to wellbeing.

Economic status: This life domain is an area of functioning which goes beyond the individual to the household in the SIDS context. This is due to the extended family characteristic of households and the social norm of the responsibility of the kin to look after older people. It is expected that the ability to manage financially and have a good economic standard of living will be an important capability that corresponds to this life domain. However, the extent of the contribution of this life domain to wellbeing may be small given the socio-cultural and developmental context of SIDS and the importance older people in SIDS place on economic functions. In addition, given the familial and public welfare systems that provide financial security for older people, the ways in which older people receive income and perceive their economic standard of living in the context of an extended household will influence the impact of this life domain on wellbeing.

Access to goods and services: This life domain is conceptualised specifically in the context of SIDS as an important area of functioning, where the capabilities relate to the wider geo-spatial environment. This life domain is not included in wellbeing research in industrialised country contexts, perhaps because of the universality of access to goods and services. However, due to the geo-spatial situation of SIDS, there are large gaps in access to a range of goods and services, especially between those residing in urban islands where the population is dense, and the more rural, less populated, isolated islands. Yet, certain goods and services are essential for survival and to sustain day-to-day living and wellbeing. The difficulties in access make the wider living environment less conducive to wellbeing and creates social and financial dependency with the potential of having a negative impact on wellbeing. Hence, factors related to the ability to afford and the actual use of goods and services are expected to be important for wellbeing in a SIDS context.

Conformity to social values and norms: This is an important life domain conceptualised in the wellbeing of older people, where the area of functioning relates to the wider social environment, given the predominant collectivist social characteristics in SIDS. It is introduced in this research on the basis of insights from the scholarship that identify societal conformity to accepted values and norms as an important aspect for wellbeing for older people, this being confirmed by the stakeholder consultation on the research design. The socio-cultural characteristics in SIDS are, however, changing with urbanisation and development. As noted before, families are becoming smaller and there is a gradual disintegration of traditional practices. These changes are leading to a mismatch in the social values and norms held by older people and those held by younger generations. The characteristics of this life domain that are likely to have an impact on the wellbeing of older people, therefore, correspond with the practice of desired social values and norms in the community from the older individual's perspective.

Overall, it is recognised in this conceptualisation that experiences of wellbeing and the life domains are influenced by interpersonal factors such as gender, and the geo-spatial factors that isolate the islands. In SIDS, as noted earlier, gender equality has not progressed as in developed countries resulting in lower social and economic achievements among women. Hence, significant gender differences in wellbeing and the life domains can be expected. The geographic isolation of the islands is of particular relevance to SIDS as there are important differences in the density of population linked to the level of isolation and consequent economic and social transitions. It is presumed that the geographic isolation of the islands will be associated with significant differences in wellbeing and the life domains.

3.6 Hypotheses

In operationalising the conceptual model described above, the relationship between the capabilities of each of the life domains (as areas of important functioning) and wellbeing will be described and the level of statistical significance in the relationship will be observed. Specifically, the following hypotheses will be examined.

3.6.1 Determinants of wellbeing

Since the wellbeing of older people is conceptualised as the sum of experiences in a number of life domains, the five selected life domains (health, social connectedness, economic status, access to goods and services, and conformity to social values and norms) are expected to have a significant impact on wellbeing. The five life domains were identified as the most relevant areas of functioning for the wellbeing of older people in a SIDS context. These life domains do not represent all possible life domains that impact on wellbeing, but are expected to play a large role in doing so. As the assessment of wellbeing involves both psychological and cognitive processes, subjective and objective measures are expected to identify different impacts. Thus, the following hypotheses are proposed for considering the impact from the life domains on wellbeing.

Hypothesis 1: Each of the five life domains (health, social connectedness, economic status, access to goods and services, and conformity to social values and norms) will have a significant correlation with the wellbeing of older people in Maldives.

1.1 Subjective levels in each life domain correlate positively with wellbeing.

1.2 Objective levels attained in each life domain also correlate positively wellbeing.

Hypothesis 2: The cumulative impact of the contributions from all five life domains on wellbeing of older people in Maldives will be significantly large.

2.1 The cumulative contributions from subjective levels of the five life domains will be larger than that of objective levels.

Hypothesis 3: The set of five life domains (health, social connectedness, economic status, access to goods and services, and conformity to social values and norms) will produce significant improvement in predicting the wellbeing of older people in Maldives from a base model of demographic characteristics.

3.1 The set of subjective measures of the five life domains will produce a significant improvement in predicting wellbeing.

3.2 The set of objective measures of the five life domains will produce a significant improvement in predicting wellbeing.

Hypothesis 4: Each of the five life domains (health, social connectedness, economic status, access to goods and services, and conformity to social values and norms) has a significant association with the wellbeing of older people in Maldives.

3.6.2 Life domains of health and social connectedness

Since health has been consistently associated with wellbeing, and given the inclusion of health in general definitions of wellbeing, across different contexts, the following hypothesis is proposed for the impact of health on wellbeing.

Hypothesis 5: Health is the single most important determinant of the wellbeing of older people in Maldives.

As with health, various aspects of social connectedness have also been associated with wellbeing. As SIDS have historically been collectivist societies, social interactions with family, friends and community are an integral part of life. Furthermore, the extended family norm allows for social contact, social support and engagement in social activities among the family. Hence, the following hypotheses are proposed for the impact of social connectedness and its components.

Hypothesis 6: Social connectedness has a significantly large impact on the wellbeing of older people in Maldives, making a contribution as large as the contribution by health.

6.1 Social connectedness with family makes a larger contribution to wellbeing than social connectedness with friends.

6.2 Contributions from the network of family produces a larger contribution to subjective levels of overall social connectedness than the contribution from the network of friends.

3.6.3 Interpersonal and geo-spatial variations.

Interpersonal factors, specifically gender, have been shown to be associated with differences in wellbeing. Explanations based on differences in marital status, health status, and social roles have also been provided as reasons for these differences. In the context of SIDS, gender differences which favour men exist in social and economic areas. Thus the following hypotheses are proposed for gender.

Hypothesis 7: Significant gender differences exist in the wellbeing of older men and women in Maldives.

7.1 Men have a higher level of wellbeing than women.

7.2 Men have higher subjective and objective levels in the five life domains (health, social connectedness, economic status, access to goods and services, and conformity to social values and norms).

Since the geo-spatial context of SIDS is particularly challenging given the scarcity of land and environmental risks, the population is widely dispersed and families are separated due to migration of people for economic and social purposes. This situation has the potential to impact on wellbeing directly or through its impact on the functioning in the life domains. Thus, the following hypotheses are proposed for the impact of geographic isolation.

Hypothesis 8: The geographical isolation of the Maldives islands is negatively associated with wellbeing and the life domains (health, social connectedness, economic standard of living, access to goods and services, and social values and norms).

8.1 The more isolated the population, the lower the level of wellbeing.

8.2 The more isolated the population, the lower subjective and objective levels of wellbeing attained in the life domain (health, social connectedness, economic status, access to goods and services, and conformity to social values and norms).

3.7 Summary

The review of theories and concepts of wellbeing and ageing has provided an important basis for theorising and developing a conceptual model of wellbeing appropriate for SIDS. The review further identified important determinants of wellbeing for older people and highlighted a significant gap in the conceptualisation and measurement of wellbeing that needs to be addressed in research in developing island country contexts. The eudaimonic philosophy of wellbeing provides the basis for identifying the objective circumstances in the lives of older people in SIDS. Hence, a wide application of the capabilities approach set within this philosophy has allowed the identification of capabilities that not only relate to the person's individual being, but also to the wider

environment. This approach was used to conceptualise the capabilities that determine wellbeing through life domains specific to SIDS contexts and to develop a set of hypotheses.

The following chapter outlines the research methods adopted in operationalising the conceptual model and examining these hypotheses.

CHAPTER 4: RESEARCH METHODS

This chapter describes the broad methodological approach and the methods adopted to examine the wellbeing of older people in Maldives as conceptualised in the previous chapter. It details the relationship between the conceptual model of wellbeing and the variables that were developed to operationalise it, as well as the process by which the model itself and the variables were verified within the research context. The initial stages of the research involved in-depth stakeholder consultations with key actors in Maldives and the scripts were analysed to inform the development of the broad conceptual model and the related research instruments. The indicators and the measures used to operationalise the variables are also described in detail. Since the research is predominantly quantitative, based on a sample survey in Maldives, the survey instrument is also described, including the process for sampling and recruiting participants, and conducting the interviews. Finally, the process for the management of the data and for addressing ethical considerations relevant to the research is outlined.

4.1 Research paradigm

The positivist paradigm continues to predominate in the field of demography, relying largely on quantitative forms of inquiry (Riley & McCarthy, 2003). However, demographic researchers have begun to extend their fields of inquiry into identifying causes and consequences of demographic change in addition to the traditional statistical analysis of levels and trends, and to this end they have drawn more readily on qualitative methods (Coast, Hampshire, & Randall, 2007). This is particularly so in gerontology research where epistemologies of social sciences that focus on constructionist knowledge claims are often adopted to explain issues related to ageing (Estes, Swan & Gerard, 1982). This research asks questions about the wellbeing of a specific demographic age group in a distinctive developmental context, with the dual objectives of knowledge development and information for policy. It traverses the disciplines of demography and other social sciences, requiring the integration of the predominant research paradigms in these disciplines. While qualitative methods can be combined with quantitative methods to enrich knowledge, Creswell and Miller (2000) claim qualitative and

quantitative methods can be seen as belonging to two contrasting philosophical paradigms - the constructivist and positivist paradigms with regard to ontology, epistemology, axiology and logic (Creswell & Clark, 2007). More recently, Creswell (2013) identifies this mixed approach as having both constructivist and positivist ontology and epistemology used for knowledge claims in a single research project as a “pragmatic paradigm”.

Qualitative research is typically based on the constructivist paradigm and its knowledge claims are characterised by the pursuit of an in-depth understanding of situations. The focus is on recognising variations and complexities rather than on narrowing down variables. This type of knowledge is acquired through discussions and interactions with research participants, through the observation of historical practices and cultural norms, and the development of patterns of meaning or inductive knowledge (Creswell, 2013, pp. 8-9). A constructivist approach thus allows for building theoretical knowledge and provides explanations for theory and concepts in the research context (Bengtson, Rice, & Johnson, 1999).

Quantitative research, on the other hand, is based on positivist knowledge claims and is characterised by the study of cause and effect through theories, the narrowing down to and focussing on selected variables gathered from literature, statistical analysis, and the testing of hypotheses (Creswell & Clark, 2007, p. 22). Despite the contrasting features of the positivist and constructivist philosophies, there are some similarities. For instance, both approaches involve the reducing of data to manageable units – in qualitative research this is typically in the form of concepts and in quantitative research in the form of statistics. Both types of research are concerned with answering research questions, either open-ended or closed-ended, both relate their findings with literature, and both seek to identify variations, and the factors associated with such variations (Hardy & Bryman, 2004, pp.1-11).

4.2 Methodological approach

A pragmatic approach, using both qualitative and quantitative methods of inquiry was adopted for this research. Such an approach was chosen on several grounds. The audience for the research is expected to comprise individuals in academia and well as policy makers, and the methodological approach has taken into account

the knowledge needs of these potential readers (Creswell & Clark, 2007). As Riley and McCarthy (2003) note, policy makers are typically interested in achieving specific targets, hence the emphasis on quantitative research methods informing policy. However, among social policy researchers there is an increasing recognition of the value of qualitative methods in understanding the concepts and findings of such research (Coast et al., 2007; Hesse-Biber, 2010). The use of a mix of methods has become common in social and human sciences disciplines (Johnson & Onwuegbuzie, 2004; Creswell, 2013).

A sequential approach to the implementation of the methods was applied, beginning with open-ended research, the results of which were used to adjust the quantitative research instruments that subsequently allowed for generalisations to be made (Creswell, 2013; Creswell & Clark, 2007; Hanson, Creswell, Clark, Petska, & Creswell, 2005). The practice of following a qualitative inquiry with a quantitative study has been found to allow for a fuller understanding of the different perspectives and concepts being studied, as well as providing the opportunity for the refinement of the proposed relationships between concepts in the quantitative inquiry (Clark, 2010). This approach was appropriate in this research as there was insufficient research to conclude the conceptualisation of wellbeing in a SIDS context. The use of an open-ended method in the initial phase of the research allowed for the verification of the concepts drawn from the literature, prior to their empirical verification through the quantitative study. Quantitative inquiry subsequently allowed for the verification of theory and empirical measurement through the development of various indicators and statistical analysis.

At the outset, the open-ended discussion with key stakeholders (described in the following section of this chapter), was used to verify the concepts that would inform the study of the wellbeing of older people in a SIDS context. These initial concepts had been drawn from a comprehensive review of the related research. In addition to the verification of the concepts, the discussion helped in identifying relationships and indicators that could subsequently be measured through existing research instruments, or would require new instruments, in the quantitative inquiry (Hanson et al., 2005). It also provided the opportunity to verify the appropriateness of the measures and reliability of the research instrument (Clark, 2010; Collins, Onwuegbuzie & Sutton, 2006).

Quantitative survey research methods were subsequently adopted. This involved the selection of a sample of the target population, and allowed the results to be generalised to that population for descriptive and explanatory purposes (Babbie, 2004; Creswell, 2014; Neuman, 2012). In addition, survey research allowed for empirical measurement and theory verification through statistical analysis and the testing of hypotheses (Creswell & Clark, 2007). Cross-sectional survey design uses individuals as the unit of analysis and gathers information directly from participants at a single point in time (Neuman, 2012). The technique of questioning in survey research is typically through structured questionnaires administered to the participant, as in mail surveys or face-to-face interviews, or through computer assisted telephone interviews (Rossi, Wright, & Anderson, 2013). Rossi et al. note that survey research is expensive and, with the reduction in funding for research, a decline in survey research has been occurring since the 1980s. Despite this, the importance of survey research, especially for policy, continues to be evident in periodic social surveys conducted in different countries and in multi-country research (European Values Study Group & World Values Survey, 2011; Ferring et al., 2004; Netuveli et al., 2006; Schwingel et al., 2009). As the findings of survey research provide a description of the situation and allow the following of trends, surveys have been widely used in gerontology studies across different contexts, by governments, institutions and individual researchers (Baltes & Smith, 1997; Luszcz, 2006; Momtaz et al., 2011; Palloni & McEniry, 2007). The details of the survey methods used in this research are described later in this chapter.

Maldives was selected for several reasons: in relation to the developmental context the country has characteristics similar to the least developed countries as well as the developing countries; it is a SIDS where the population is widely dispersed, posing significant challenges to sustained socio-economic development; the social development indicators are in the mid-range among the SIDS; the older population is increasing in both numerical and structural terms, as in most SIDS; and the researcher has local experience and knowledge of the society of Maldives. Thus, the findings from this research will provide the impetus to conduct similar research in other SIDS.

4.3 Verifying concepts and developing indicators

As noted in the previous chapter, the conceptual model of the wellbeing of older people was verified by the findings of stakeholder consultations. The insights from this process were also used to identify appropriate indicators to assess and monitor the wellbeing of older people in Maldives. The following section describes the rationale behind the stakeholder consultations, the methods by which they were conducted, and the key insights from this process. It does involve presenting finding from interviews, something that is not typically included in a description of research methods, but they are presented here in some detail as they played a key role in the development of the survey instrument which is introduced later in the chapter.

4.3.1 Stakeholder consultations

Stakeholder consultations have been used in ageing research to enable improvements in the concepts and measures, and to ensure that they are appropriate and relevant to the research context (Waldegrave, 2006). The aims of the consultations carried out in this study were primarily to gain access to local knowledge on wellbeing in Maldives, to verify the appropriateness of the conceptual model and the research instrument developed for this research, and to facilitate local collaboration at the developmental stage of the research. Subsequent to the survey, these stakeholders will also provide an avenue to disseminate the research findings and increase the potential of its use by policy makers, service providers and other end users.

The specific objectives of the stakeholder consultations in relation to the survey were to:

- (i) verify the appropriateness of the proposed conceptual model of the life domains of wellbeing in the context of Maldives
- (ii) identify the relevance of the indicators for the end users in monitoring the wellbeing of people 65+ years in Maldives, and
- (iii) ensure the appropriateness of the research instrument for a sample survey of people 65+ years in Maldives (e.g. in the use of language).

A qualitative design using in-depth interviews was chosen for the stakeholder consultations. This method provided for a deeper understanding of the context and

allowed better insight into what the participants saw as relevant information to be obtained through survey interviews (Bryman, 2001; Creswell, 1994). The selection of stakeholder participants from different areas and spheres of work was expected to be sufficient to provide a good understanding of the research context. A semi-structured interview guide (see Appendix D) was used to maintain the focus on the study goals while allowing for flexibility in exploring the views of the participants (Bryman, 2001).

The stakeholder consultations were held in Maldives from December 2011 to January 2012. The stakeholders consulted included officials from government institutions responsible for policy, other key individuals in public and private agencies providing services for older people, as well as key professionals and older people themselves. The list of agencies was obtained from published information regarding government and non-governmental organisations. Letters were sent to the agencies informing them about the study and requesting participation, followed up by phone calls. Discussions were held with those agencies and professionals agreeing to participate in the research. Individual older people were also approached through personal contacts. Individual professionals were identified through the stakeholder agencies and personal contacts of the researcher. Interviewees included people with many years of experience in their fields and decision makers at the top level of many organisations. Among the participants were the heads of the organisations, and people working with older people (with work experience ranging from 6-10 years) at programme and service level. A total of 18 people – four older persons and 14 people from nine stakeholder organisations – participated in the consultations (Table 4.1).

Table 4.1: Organisation affiliation, expertise stakeholders and number

Stakeholders		No. of people
Government policy bodies	National Social Protection Agency	2
	Ministry of Health	3
	Department of Gender and family	1
Service providers	Maldives Pension Administration office	1
	Male' Health Service Corporation	1
Non-governmental organisation	Aged Care Maldives and Manfaa Centre	3
Professionals	Public Health professional	1
	Social scientist	1
	Developmental economist	1
Older people from the public		4
TOTAL		18

The participants were from the following organisations and individual groups:

- **Government agencies:** Ministry of Health and Family, National Social Protection Agency, Department of Family Protection Services and Maldives Pension Administration Office.
- **Service providers:** Male' Health Service Corporation.
- **Non-Government Organisations:** Aged Care Maldives and the Manfaa Centre on Ageing.
- **Professionals:** key informants from the disciplines of social science, public health and developmental economics.
- **Older people:** people 65+ residing in islands of different population sizes and development stages.

Prior to the interviews, potential participants were provided with a summary of the research proposal including the proposed conceptual model, indicators, and the questionnaire for their review. The questions were focussed on identifying the key life domains that shape the wellbeing of older people, including those related to the wider socio-cultural, economic and geo-spatial characteristics of Maldives, as a SIDS; the relevant indicators included the individual, family and contextual factors corresponding to the life domains; and several questions relating to the appropriateness of the survey instrument.

Although the stakeholder discussion was very broad, it was closely focussed on the purpose of obtaining information to confirm the conceptual model and the indicators of wellbeing. What follows is a brief review of the insights obtained from these interviews, in particular, how the stakeholder responses guided the finalisation of the life domains and their indicators, the way the impact of geo-spatial differences was considered, and the survey instrument. The responses showed considerable commonality, while also highlighting issues specific to the stakeholder's area of service, and thus provided a deeper understanding of the social context and insight into what the participants saw as relevant (Bryman, 2001; Creswell, 1994).

4.3.1.1 Verifying the conceptualisation of the life domains of wellbeing

The stakeholders were asked to discuss the areas of life most important for the wellbeing of older people in Maldives. The discussion on the life domains is summarised below.

- All the participants identified social connections, such as social contact with family and friends and social support, as a critical aspect affecting the wellbeing of older people. Changing family structures and family values were identified by two thirds of the stakeholders as aspects affecting the social support, social relationships and, thereby, wellbeing.
- Health was also identified as a critical aspect, especially those health issues impacting on the functionality of the older people.
- The third most commonly identified area was related to economic and financial issues. This was explained as relating not just to the income of the older person, as a number of their expenses are borne by the family. The practice of informal remittances and goods from friends and family members who do not co-reside was identified as important for the economic status of the older person.
- About half of the participants noted issues related to the geospatial and living environment such as housing, access to health care and other services. These included access to basic goods, especially commodities for personal care and health, services such as communication, and transport services that would allow the older person to stay in touch with friends and family.
- More than half of the stakeholders noted the relevance of socio-cultural values and voiced concern about the deterioration of the traditional social values in society, and the mismatch between the values of older people and those of the younger generation. They noted that some values are important for the vital functioning of a society. The most commonly noted social values and norms were respect for older people, trust, helpfulness and the traditional norms such as caring for the elderly in the family and community. The level at which this domain should be investigated in the research was also discussed e.g. whether the research should look at the individually held values of the older person or those values held collectively by the community in which the older person resided. The theme emerging from the discussion was that although values begin with the individual and extend to family and community, it is the upholding of these values by the family and community that impacts on the wellbeing of the older person.

4.3.1.2 Geo-spatial differences

In considering geo-spatial factors, the stakeholder interviewees suggested that some of the differences in the wellbeing of older people related to living on a bigger urban island or on smaller, more isolated islands.

- They noted that life was socially better for older people on the smaller islands because of the peacefulness and existence of familiar social traditions and values. Some interviewees also suggested that even though adult children often moved to urban islands, social networks with remaining friends and community members often made the older people less lonely. However, the point was made that when older people moved to urban islands to live with their children, they often lost contact with friends and other social network members, and their actual social connectedness with the family members they had followed was poor due to the busy lifestyle on the urban islands. Some stakeholders, however, believed that apart from material goods available in urban islands, living conditions were not very different on bigger islands. In both locations, older people were housebound (mobility was restricted) and dependent on family members due to problems of access and the absence of any social programmes for older people.
- The second major aspect identified was the poor access to services on the smaller islands. Most stakeholders alluded to the limited access to health care and the discontinuity of services and treatment, particularly for older people living on the smaller islands. Even when health care was available, as in most of the bigger islands, stakeholders noted that the older people had difficulty accessing the services without a caregiver to accompany them. They suggested that health care delivery should be more responsive to the needs of older people, by bringing in community-based social services and orienting services to allow older people to be more independent. Limitations in access to transport for those living on smaller islands were also identified as increasing the dependence of otherwise functional older people on family and friends, and thereby increasing the burden on island-bound families.
- The third major issue that was identified related to the housing situation. In the capital city, which by comparison with smaller islands was highly

congested, the structure and design of housing was not conducive to older people's mobility. The stakeholders interviewees noted that many older people in the capital were housebound as almost all housing was in multi-storey buildings (often three or four storeys), many without an elevator. This made it difficult for older people to engage in social activities outside the household with friends and even with family. Furthermore, a large proportion of people in the more urbanised islands had migrated from other islands and lived in small rented spaces that were expensive. This situation often led to difficulties in social engagement and also to problematic relationships within the family when an older parent lived with adult children. By comparison, in the smaller islands, housing was usually single storey with adequate land for extended families, providing a friendlier environment for older people, despite being away from their children. While these differences existed, all interviewees indicated that they believed social life was better in the smaller islands than the bigger urban islands like Male'.

4.3.1.3 Developing indicators for the survey

The stakeholder interviews confirmed that there was no specific set of existing indicators appropriate for monitoring the wellbeing of older people in Maldives. The available indicators for people 65+ years from routinely collected data included age-specific mortality, morbidity indicators, cohort life expectancy, health insurance coverage and pension coverage, but there was no recent data on income, work status, social conditions or the social relationships of older people. Although the 2006 Census had collected information on the living arrangements of older people, this information was not a consistent feature of the censuses in Maldives and was not collected in the 2014 Census.

Most interviewees were not aware of any measures used in research for monitoring wellbeing. However, they emphasised that international measures and indicators needed to be adapted to the country context and additional measures should be included for the research to be useful for policy planning. It was suggested that indicators that allowed for international comparison, as well as indicators specific to the Maldives context, should be used to provide an evidence base for programmes and policies to enhance wellbeing.

The stakeholder interviews, therefore, informed the development of the core indicators for the wellbeing of older people in Maldives. The indicators were also informed by the conceptual model of wellbeing described in Chapter 3. The resulting survey instrument was designed to collect information on respondent characteristics, the subjective and objective measures relevant to the conceptual model, and questions relevant to the policy options. The questionnaire drew on validated measures used in previous research as well as measures constructed by adapting some of these items to increase their relevance to SIDS contexts. Specifically, the indicators were compiled taking into consideration the World Health Organisation (1997), Quality of Life (WHO QOL) instrument, the New Zealand General Social Survey, and a study on Enhancing Wellbeing in an Ageing Society in New Zealand, (Koopman-Boyden & Waldegrave, 2009; Ministry of Social Development, 2007; World Health Organization, 1997). The majority of the stakeholder participants (13 out of 18) identified the proposed indicators (listed in Table 4.2) as appropriate for monitoring the wellbeing of older people in Maldives.

In addition to these indicators, the interviewees from stakeholder organisations noted some aspects where information would be useful for them to plan future programmes. These included comparative information on:

- The relationship between wellbeing and social connectedness with separate indicators for family and friends, e.g. social activities with family and friends, social support
- The sources of social support
- Information on the constraints older people face in socialising with family and friends in bigger urban islands compared to smaller islands, and
- The affordability of health care, especially the instances where older people had to pay for their health care, despite the existence of social health insurance.

Table 4.2: Indicators for monitoring the wellbeing of older people identified by the stakeholders in Maldives

LIFE DOMAINS	INDICATORS OF WELLBEING
WELLBEING	Overall satisfaction with life
HEALTH	Life expectancy at age 65 years Self-rated level of health Access to health care (utilisation) Health care financial cover (population coverage by health insurance) Out-of pocket expenditure on health care Access to social support (family and others) Satisfaction with health status
SOCIAL CONNECTEDNESS	Living arrangement (with family or other arrangement) Satisfaction with living arrangement Social engagement (with family, friends and community) Level of social connectedness (with family and others and overall) Satisfaction with the social connectedness (family, friends and overall)
ECONOMIC STATUS	Level of economic standard (adequacy of money) Old age pension coverage Satisfaction with economic standard of living
ACCESS TO GOODS & SERVICES	Affordability of essential goods (food, housing, personal goods, health care goods) Access to communication (telephone, internet) Access to transport (land, sea) Level of access to goods and services (in general overall) Satisfaction with access to goods and services
SOCIAL VALUES & NORMS	Safety, trust, helpfulness/voluntarism, respect and care for older people Level of conformity to social values and norms (in the community) Satisfaction with community's conformity to social values and norms.

Overall, the detail of the discussion and the range of concepts generated during the stakeholder interviews was extremely valuable. All interviewees subsequently noted that the proposed survey instrument was relevant to the socio-cultural, economic and geo-spatial context of Maldives. The need for appropriate phrasing in the translation of the survey instrument to the local language, Dhivehi, was emphasised. A few stakeholders proposed additional question items in areas related to their service area and suggested paraphrasing some questions for ease of translation to Dhivehi.

The survey instrument was amended to ensure the appropriateness of the language and to enable adequate information on the indicators for end-user applications. Drawing on these insights, the indicators for the conceptual model were developed. What follows is a description of the indicators and the measures that were subsequently operationalised in this research.

4.4 Operationalising the conceptual model and indicators

The multidimensional conceptual model was operationalised using both subjective and objective indicators for each life domain (Table 4.3). These indicators represented the variables at the first level of deconstruction of wellbeing. In selecting the indicators, consideration was given to their relevance and practical applicability in the context of SIDS, as well as possible comparison with international research on the wellbeing of older people.

One objective and one subjective measure of each life domain (except for social connectedness) was operationalised in the survey, as information on other indicators was available through other sources such as government institutions. Subjective indicators at the life domain level were operationalised as the ‘satisfaction’ with each of the domains. It was presumed that the satisfaction measures captured not only the individual’s current level of functioning, but also what the individual could achieve in the particular area of functioning (i.e. possible capabilities).

Table 4.3: Indicators of wellbeing and life domains operationalised in the research

LIFE DOMAINS	WELLBEING INDICATORS
WELLBEING	Satisfaction with life as a whole
HEALTH	Level of health attained Satisfaction with health status
SOCIAL CONNECTEDNESS	Level of overall social connectedness attained Satisfaction with overall social connectedness Satisfaction with social connectedness of family Satisfaction with social connectedness of friends and others
ECONOMIC STATUS	Level of economic standard attained Satisfaction with the economic standard of living
ACCESS TO GOODS & SERVICES	Level of overall access to goods and services Satisfaction with overall access to goods and services
CONFORMITY TO SOCIAL VALUES & NORMS	Level of conformity to social values and norms Satisfaction with conformity to social values and norms.

The objective indicators represented the current level of functioning (i.e. the current capabilities) in each domain. Objective indicators for the domains ‘health’ and ‘economic standard of living’ were measured using single item indicators, adopted from previous research. Multi-item scales were developed for the objective indicators for the life domains of ‘social connectedness’, ‘social values and norms’, and ‘access to goods and services’.

The definitions of wellbeing and of the functionings corresponding to the life domain, and the subjective and objective measures of the indicators are now described.

4.4.1 Wellbeing

Wellbeing is regarded as a global construct and defined in this research as the ‘state of being as a sum of experiences in a range of life domains’. Keeping with this definition, the indicator used for the construct of wellbeing is the satisfaction with life as a whole (see Table 4.4). This is one of most commonly used indicators of wellbeing and therefore allows for further comparison with international research. The measure used for this indicator is the self-reported satisfaction level to a single item question with the responses reported on a Likert scale of 5-1. Likert scales were used with five response categories as this did not force the choice of extreme responses as in dichotomous scales (Clark & Watson, 1995). Five response scales have been shown to be easy to use and produce higher reliability compared with those with a smaller number of options (Preston & Colman, 2000).

Table 4.4: Subjective indicator measures of wellbeing and life domains

Subjective indicators		Measure (Question item)	Question number*
Life Domains	Overall satisfaction with life (wellbeing)	Taken all together how satisfied are you with your life as a whole (on a scale of 5 – 1, with 5 being ‘very satisfied’ and 1 being ‘very dissatisfied’)?	Q.61
	Satisfaction with health status	How satisfied are you with your health status on a scale of 5 – 1, with 5 being ‘very satisfied’ and 1 being ‘very dissatisfied’?	Q.60
	Satisfaction with social connectedness	On a scale of 5-1, with 5 being ‘very satisfied’ and 1 being ‘very dissatisfied’ how satisfied are you with your overall social connectedness with family, friends and community members all together?	Q.44
	Satisfaction with economic standard of living	How satisfied are you with your economic standard of living? How would you rank it on a scale of 5 – 1, with 5 being ‘very satisfied’ and 1 being ‘very dissatisfied’?	Q.19
	Satisfaction with conformity to social values & norms	How satisfied are you with the extent your community practices accepted social values and norms (like the values we just talked about.. trust, respect...) of your community (on a scale of 5 – 1, with 5 being ‘very satisfied’ and 1 being ‘very dissatisfied’)?	Q.30
	Satisfaction with access to goods & services	How satisfied are you with your overall access to basic goods and services you need (on a scale of 5 – 1, with 5 being ‘very satisfied’ and 1 being ‘very dissatisfied’)?	Q.24

*refers to the question's number in the survey instrument (see Appendix E).

Each item was scored as an ordinal measure on an un-weighted scale and with the distance between the measures on the scale assumed to be equidistant.

5	4	3	2	1
Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very Dissatisfied

As the number of items for each score on the 5 item scale was too small for the statistical tests of associations, the scales for all the five items were collapsed to a scale of 3-1. For the analysis, the data were compressed (4 to 5=3), (3=2) and (1 to 2=1) and recoded. This compression of data overrides the assumption of equidistance in the original scale; however, collapsing data to a shorter scale in this way has been found to not affect the reliability or validity of the scores (Preston & Colman, 2000). The computed score for each respondent was used as the score for the level of satisfaction.

Item\Score	3 High	2 Moderate	1 Low
Overall satisfaction with life	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied

The responses in the scale are regarded as corresponding to the subjective level of wellbeing and the life domain indicator. As such, for wellbeing, ‘satisfied’ corresponds to a ‘high’ level of wellbeing, ‘neither satisfied nor dissatisfied’ corresponds to a ‘moderate’ level of wellbeing, and ‘dissatisfied’ corresponds to a ‘low’ level of wellbeing.

4.4.2 Health

Health is defined in this research as the ‘state of overall physical and mental functioning of the individual’. Although this definition allows for variations between individuals, it was considered that a social definition of health that tied in with the ecology theory of ageing was more appropriate in the investigation of wellbeing of older people than a narrower medical definition of health. As discussed in the review of research, perception of good health correlates positively with wellbeing and older people perceive their health as good despite often having chronic diseases. Both the research on older people in SIDS and the stakeholder consultations emphasised the importance of health, especially where it affected functionality for wellbeing. Previous research on health and wellbeing has used many different indicators, including measures of chronic disease conditions,

measures of activities of daily living, and self-reported measures (Clarke et al., 2000; Garatachea et al., 2009; Hambleton et al., 2005; Netuveli et al., 2006). However, among older people it is the perception of overall health status that has been found to correlate significantly with wellbeing (Berg et al., 2006; Enkvist et al., 2012; Smith, 2001).

The view on the most appropriate measure of health continues to be debated and it has been suggested that the measure adopted has to be most relevant to the aspect being studied. For instance, research on wellbeing and work has shown that use of self-reported health is more useful as it reflects the person's ability to adapt to the disease condition (e.g. diabetes) rather than the pure objective levels of health as measured using clinical or biomedical indicators (Berg, et al, 2006; Bound, 1989; Enkvist 2012; Smith, 2001). A central point that has been stressed in favour of using self-reported health in studies of wellbeing is that respondents cognitively evaluate the impact of physical and mental health, such as the number of diseases and symptoms, functional ability, problems with vision and hearing, number of medical drugs being used, more than social aspects (Singh-Manoux et al., 2006). It is also anticipated that the responses to the question of self-reported health from older people captures not only conditions of disease and disability, but also levels of adaptation that take account of the environmental resources available for older people to be functional (Lim et al., 2001). This is seen to be appropriate given the high prevalence of chronic diseases and comorbidities among older populations (von Faber et al., 2001). Furthermore, research has also shown that many of the weaknesses related to the reliability and validity of self-reported health are also shared by more objective measures of using disease and functional ability, as they are also based on cognitively evaluated self-reports of the respondent (Baker, Stabile & Deri, 2004). In this research, therefore, the indicators of the health domain include satisfaction with health as the subjective indicator and self-reported health status as the objective indicator.

The measure for the subjective indicator, 'satisfaction with health', is a single item measure similar to wellbeing (see Table 4.4) with the same scoring format.

For the objective indicator, in considering the context and the participants of this study, a single item measure of self-reported health is adopted (as in the World Health Organisation's Quality of Life instrument), with the response based on a

four-week recall period reporting on a Likert scale of 5-1. The question (Q.45 of survey questionnaire - see Appendix E) was “How would you describe your health? Would you say it is....:”

5	4	3	2	1
Very good	Good	Neither poor nor good	Poor	Very poor

These scores were collapsed to a scale of 3-1 as the score for the level of health for the analysis.

Score	3	2	1
Health status	Good	Neither poor nor good	Poor

In addition, the measures of physical health and mental health (as in the World Health Organisation’s Quality of Life instrument) were used as it was presumed that health status is achieved through physical and mental functioning. Scoring of these items used the methodology prescribed for this instrument (World Health Organisation, 1997). Item measures of the physical health and mental health are found in the questionnaire (Appendix E).

4.4.3 Social connectedness

Social connectedness is defined as the ‘state of social integration of the individual through networks of family and friends, social engagement and social support’. As social connectedness is a complex construct that can include interactions with family and friends as well as engagement in society, it is operationalised using different aspects of social relationships such as social networks, social support and social integration (Berkman et al., 2000). The social aspects, such as contact with family and friends and social support, were identified by the stakeholders as critical for the wellbeing of older people. As noted in research on SIDS, the effect of changing family structures from extended family to nuclear families on older people’s social contact and social support is of particular concern (Cloos et al., 2010; Mohanty, 2011).

The subjective indicator of social connectedness was the ‘satisfaction with overall social connectedness’. This was a single item measure similar to wellbeing (see Table 4.4) with the same scoring format. In addition, ‘satisfaction with social connectedness with family’, and ‘satisfaction with social connectedness with

friends’ was also used to allow for a comparison of the contribution of these two indicators to overall social connectedness and wellbeing (see Table 4.3). A similar measure and approach to scoring was used as for ‘satisfaction with overall social connectedness’ for these indicators.

The objective indicator was a composite measure which recognised that social connectedness occurs through the opportunities provided by the social network of the individual, social support and social engagement. The social network included contact with family, friends and other close persons influenced by network characteristics such as composition, frequency, mode of contact and place where social contact occurs. Social support mechanisms also provide opportunities for social contact and contribute to the connectedness of a social network. Personal activities outside the household, participation in group activities with family and friends, and participation in religious and community activities were also recognised as constituting different opportunities for social engagement.

As there are no validated standard instruments for measuring the level of social connectedness, this research drew on the items used in international research, discussed in Chapter 3. A multi-item scale was constructed to consider social connectedness in a SIDS context. The level of overall social connectedness is thus a composite indicator computed from responses to a number of questions related to three components of social connectedness.

The initial scale had 13 items that loaded onto three components (five items on the family network component, four items on the friend network and four items on social engagement). The scale was revised for the final analysis following a principal component analysis and a reliability analysis of the scale (results of the confirmatory factor analysis are detailed in Appendix G). The final scale used in the analysis had 11 items, with four items on the family network (including social support), three items on the friend network and four items on the social engagement component reported over a four-week recall period (Table 4.5).

The items used in the scale are un-weighted ordinal measures scored on a Likert scale. Each item was scored on a scale of 3 to 1 (see Table 4.5) except the item social support from family, which was scored only in two categories. The score of items in the social engagement components include ‘A few times’ which indicates

engagement in the activity 1-3 times, while ‘Quite often’ indicates engagement in the activity ‘4 or more times’ in the four-week recall period. The items in the scale are un-weighted and the distances between the categories are assumed to be equal.

Table 4.5: Item scores for the variables of the social connectedness scale

Item\Score	3	2	1
FAMILY NETWORK			
Number of family contacts	5 or more	1-4 contacts	No contacts
Frequency of contact	Daily	Weekly	Monthly
Type of contact	Mostly in person	Mostly by phone	No contact
Receive social support from family	Receive social support	-	Do not receive any support
FRIENDS’ NETWORK			
Number of friend contacts	5 or more	1-4 contacts	No contacts
Frequency of contact	Daily	Weekly	Monthly
Type of contact	Mostly in person	Mostly by phone	No contact
SOCIAL ENGAGEMENT			
Go out with friends	Quite often (4 or more times)	A few times (1-3 times)	Not at all
Go to the mosque	Quite often (4 or more times)	A few times (1-3 times)	Not at all
Go shopping	Quite often (4 or more times)	A few times (1-3 times)	Not at all
Go to community meeting	Quite often (4 or more times)	A few times (1-3 times)	Not at all

The measure of overall social connectedness for each respondent was the mean score of the 11 items used in the scale, computed using SPSS. The mean score for each respondent was then computed on a scale of 3-1 with 3 being ‘good’, 2 ‘moderate’ and 1 ‘poor’.

Item\Score	3	2	1
Level of overall social connectedness	Good	Moderate	Poor

4.4.4 Economic status

Economic status was defined in this research as ‘having adequate amounts of money to meet the needs of the individual to lead a reasonable standard of living’. Measures for economic status vary depending on the research context, with measures of either income or consumption, or both, being used in most research. As discussed previously, there is ample evidence from different settings to show a higher economic situation correlates positively with subjective wellbeing up to a certain level of wealth, but it plateaus thereafter (Cummins, 2000b; Diener & Suh, 1997; Easterlin, 2001; Kahneman & Deaton, 2010). Ownership of assets and

informal remittances from family and close relatives or friends are important sources of income for older people in developing countries and SIDS, although work and welfare benefits such as old-age pensions may also contribute to the income (Connell & Conway, 2000; Williams et al., 2013). As suggested by Ferrer-i-Carbonell (2005), a perceived financial adequacy to meet needs is likely to provide a better indication of economic status in the current research context.

The subjective indicator of economic status was, ‘satisfaction with economic standard of living’, and a single item measure similar to wellbeing (see Table 4.4) with the same scoring format.

A self-reported single item question on the adequacy of money to meet needs based on a four-week recall period was used. In constructing this item, it was postulated that in the socio-cultural context of this research, the overarching item is likely to include in-kind and other remittances from all sources including work, assets, welfare benefits (such as old age pension), and informal remittances from family and friends. The respondents reported on a Likert scale of 5-1. The question was “Have you enough money to meet your need?”(Q.15 of survey questionnaire, Appendix E).

5	4	3	2	1
Completely	Mostly	Moderately	A little	Not at all

Again, the item was scored as an ordinal measure and the distance between the measures on the scale were assumed to be equal. Again, for the analysis, the scale was collapsed to a scale of 3-1 and the re-coded score for each respondent used as the score for the measure of economic status.

Item\Score	3	2	1
Economic status	Good	Moderate	Poor

4.4.5 Access to goods and services

Access to goods and services was defined as ‘having the resources to afford goods and utilise services that are needed by the individual’. This definition includes aspects of potential access, the financial resources, and the realised access that take into account the physical and social aspects of accessing goods and services. As discussed in conceptualising this domain, access in terms of affordability and utilisation are important in the context of SIDS where there are geo-spatial

limitations in the availability of goods and services (Division of Sustainable Development, 2014a, b). Hence, the measure for access to goods and services incorporates aspects of affordability of basic goods and the utilisation of services (Gold, 1998).

The subjective indicator was a single item question on satisfaction with access to goods and services as for wellbeing (see Table 4.4) with the same scoring format.

The objective indicator, level of access to goods and services, is a composite indicator developed for the geo-spatial context of SIDS (Table 4.6). Access was found to be most commonly operationalised in research with respect to health care where measures of access have evolved from availability to affordability to utilisation and acceptability (Gulliford et al., 2002; Penchansky & Thomas, 1981). The measure further adapts items from the environment domain of the WHOQOL instrument (World Health Organization, 1997). Thus, a multi-item scale using items related to two components (the affordability of goods and the utilisation of services), was used to measure level of access to goods and services, including specifically personal items, durable goods, housing, communication, transport services and health care.

The initial scale for access to goods and services had nine items (four items on the affordability of goods component and five items on the utilisation of services component). The scale was revised for the final analysis following a principal component analysis and reliability analysis of the scale (results of the confirmatory factor analysis are detailed in Appendix G). The final scale used in the analysis has seven items (four items on the ‘affordability of goods’ component, three items on the ‘utilisation of services’ component).

The items used are un-weighted ordinal measures scored on a Likert scale based on a four-week recall period. The items on affordability were scored on a scale of 3 to 1 (Table 4.6), and the questions were negatively framed, hence the data was reverse coded, with 3 being ‘No, can afford’, 2 ‘sometimes’ and 1 being ‘Yes, cannot afford’. In the scale, ‘Sometimes’ indicates that they had difficulty 1-3 times during the recall period, ‘Yes, cannot afford’ indicates that they had faced the situation three or more times in the four-week recall period, and ‘No, can afford’ indicates that they had never faced the situation in the recall period.

Table 4.6: Item scores for access to goods and services scale

Item\Score	3	2	1
Difficult to afford housing	No, can afford	Sometimes (1-3 times)	Yes cannot afford (3 or more times)
Difficult to afford clothing	No, can afford	Sometimes	Yes cannot afford
Difficult to afford durable items	No, can afford	Sometimes	Yes cannot afford
Difficult to afford health care items	No, can afford	Sometimes	Yes cannot afford
Used phone	A lot (4 or more times)	Some (1-3 times)	No
Used internet	A lot (4 or more times)	Some (1-3 times)	No
Used land transport	A lot (4 or more times)	Some (1-3 times))	No

The items on utilisation were also scored on a scale of 3 to 1, based on a four-week recall period (Table 4.6), with 3 being ‘a lot’, 2 ‘some’ and 1 being ‘none’. ‘Some’ indicates that the service was used 1-3 times, while ‘a lot’ indicates the service was used 4 or more, ‘no’ indicates not using the service at all, during the recall period.

To compute the score for the measure of access to goods and services, the mean score of all seven items (four items on affordability and three items on utilisation) was computed using SPSS. The mean score of access, combining the affordability and utilisation items for each respondent was then computed on a scale of 3-1 with 3 being ‘good’, 2 ‘moderate’, and 1 ‘poor’.

Item\Score	3	2	1
Level of access to goods and services	Good	Moderate	Poor

4.4.6 Conformity to social values and norms

Conformity to social values and norms was defined in this research as the society’s fit with the values and norms that are desired by the older people, drawing on the idea of sharing or collective acceptance of what is good in the society (Knafo, Roccas, & Sagiv, 2011, p. 179). Conformity to desired social values and norms are especially significant for older people living in SIDS, as discussed earlier. It is common for these societies to have strong cultural beliefs and give importance to harmony and embeddedness values that focus on maintaining traditional attitudes and practices. As the research context of Maldives is predominantly a collectivist society, the measure focuses on value

types of harmony and embeddedness values (Schwartz, 1999; Schwartz & Bardi, 2001).

The subjective indicator of this life domain was the person's 'satisfaction with the conformity to social values and norms' within the resident community. A single item question on satisfaction with conformity to social values and norms (see Table 4.4) with the same scoring format as the measure for wellbeing was used.

The objective indicator was a composite indicator of the perceived 'level of the conformity to the social values and norms' in their resident community. The indicator aims to capture the extent to which the desired values and norms are practiced in the community from the older person's perspective. The most widely used instruments to measure human values are the World Values Survey (Inglehart, Basanez, & Moreno, 1998) and on a smaller scale, the Schwartz Value Survey instruments (Lindeman & Verkasalo, 2005; Schwartz et al., 2001). However, these measures of personal values were not appropriate for measuring the level of conformity to social values and norms in the community as conceptualised in this research. Furthermore, conformity to social values and norms has not been conceptualised in models of wellbeing research and there are no standard scales or indices available for this indicator from previous studies of wellbeing.

A multi-item scale with social values and norms relevant to the SIDS context was therefore constructed to measure the conformity to desired social values, drawing on the World Values Surveys and the Schwartz Values Surveys and also previous research on social capital and social wellbeing in the European Social Survey (Huppert, Clark, Frey, Marks, & Siegrist, 2005; Narayan & Cassidy, 2001). In addition, research from other SIDS and developing countries that highlighted norms and values of collectivist societies (Hayes, 2009; Panapasa et al., 2012), and the stakeholder consultations informed the development of this measure. The scale consisted of items belonging to Schwartz's individual values that correspond to societal value types of harmony and embeddedness (Schwartz & Bardi, 2001). The scale used questions on observed levels of safety, trust, respect, altruism and traditional norms in the community (Factor analysis of the item scale is provided in Appendix G).

The level of conformity to social values and norms was computed from responses to five items related to the practice of socio-cultural values and norms in the community (Table 4.7). The items provide an indirect measure (the respondents' feeling) of the practice of social values and norms based on the respondents' observation over a four-week recall period.

Each item was scored on an un-weighted Likert scale of 3 to 1 as an ordinal measure and the distance between the measures were assumed to be equal (Table 4.7). At the same time, it is acknowledged, given the indirect nature of the measure, that it will contain semantic differentials.

Table 4.7: Item scores for social values and norms scale

Item\Score	3	2	1
Safe to walk on streets	Mostly	Sometimes	Not at all
Trust others	Most can be	Some	Have to be very careful
Respect elders	Most do	Some do	Most don't
Look after elders	Most do	Some do	Most don't
Help neighbours/others	Most do	Some do	Most don't

The mean score of all five items was used as the score for the measure of conformity to social values and norms computed using SPSS.

Item\Score	3	2	1
Level of conformity to social values and norms	Good	Moderate	Poor

4.5 Survey

The conduct of the survey included finalising the survey instrument, sampling and recruiting participants, and conducting the interviews.

4.5.1 Survey instrument

The survey questionnaire was initially developed in the English language and then translated to Dhivehi, the local language of Maldives. The translation was done by the researcher (a native speaker of Dhivehi), and another native speaker, both of whom have graduate level qualifications. The translated instrument was reverse translated to verify the consistency of the concepts used. The questionnaire was piloted in three steps: first with professional social science and demography researchers at the National Institute of Demographic and Economic Analysis

(NIDEA), University of Waikato, using the English version; second among Dhivehi speaking individuals in Hamilton, New Zealand; and thirdly among the older people in an island of Maldives not included in the sample of the survey. The questionnaire was also trialled with regard to the coding for data entry and analysis. The final questionnaire can be found in Appendix E.

4.5.2 Sampling and recruiting participants

The minimum sample size estimated for the survey was 374 (Table 4.8), calculated using a standard sample size estimation tool available online (Creative Research Systems, 2010). The sample size was estimated allowing for a confidence level of 95 per cent that ensured the sample size was representative of the true population value with a precision of plus or minus 5 per cent. In the calculations, a degree of variability of 5 per cent was considered reasonable for the sample. In defining the sample size, consideration was also given to ensuring that it was adequate to conduct the planned analysis, such as correlation and regression analysis and comparison of subgroups (Israel, 2009).

Given the complexity of the population distribution in Maldives, a multi-stage cluster sampling method was adopted, which has often been used in studies with natural geographic areas where the population is widely dispersed (Groves et al., 2001; Weinstein, 2010). This method of sample selection allows for internal comparison to be undertaken among populations living in smaller and bigger island populations which may not be possible if a simple random sample is selected from the total population.

Table 4.8: Sampling island clusters and estimated sample size for each cluster

Cluster	No. of islands	*Target population (65+ years)	% of target population	Estimated minimum sample size (N)
Dense Cluster (island population 100,000 or more)	1	2,752	20.02	75
Moderate Cluster (island population from 1,000 to 99,999)	63	7,165	52.12	195
Sparse Cluster (island population less than 1,000)	127	3,829	27.86	104
Total	196	13,746	100	374

*Population figures derived from 2006 Census dataset, Maldives (Ministry of Planning and National Development, 2007).

In Stage One, the islands of Maldives were grouped into three clusters based the island populations (Table 4.8) as recorded in the 2006 Census. The population of Maldives is homogenous, so that other characteristics such as religion, language and ethnicity were not considered relevant. Cluster 1 includes islands with a population of 100,000 or more (Dense Cluster), Cluster 2 includes islands with a population between 1000 and 99,999 (Moderate cluster), and Cluster 3 includes islands with a population less than 1000 (Sparse Cluster).

In Stage Two, 5-6 per cent of the islands were selected randomly for Clusters 2 and 3, to ensure their representation in the sample. As Cluster 1 consisted of only Male' (the capital city), this stage was omitted for Cluster 1.

In Stage Three, selecting the sample, a proportional sample was drawn from each cluster. Proportional sampling ensured that equal representation of the study population was obtained from smaller as well as bigger islands (Gillham, 2008). In Clusters 2 and 3, the number of participants required from the cluster was equally divided among the number of islands selected in that cluster, to ensure equal representation of participants from the islands selected in these clusters. The sampling frame was a list of people 65+ years obtained from the National Social Protection Agency (NSPA) in Maldives.

To recruit participants in Cluster 1, potential participants were drawn randomly from the NSPA list of 65+ years and approached directly by telephone. In Clusters 2 and 3, informal contacts and locally appropriate methods using '*Messengers*' were used to reach the potential participants in the NSPA list, update the list and obtain contact numbers. This was necessary as the list did not have a comprehensive record of the telephone numbers and this approach was found to be effective in recruiting participants (Moosa & Koopman-Boyden, 2015). The only way to obtain phone numbers of potential participants was to approach the households directly, as the isolated island communities mostly use mobile phones, and some older people used the phones of their children or friends (Ibrahim, 2010). Furthermore it was effective as the messengers, as local residents, had current, in-depth knowledge of the households and were familiar with the way of doing things in the community. They were, thereby, able to achieve greater acceptance in the island community than would have been possible if the approaches had been made by the researchers. In addition, this was a locally

accepted way of reaching people in the isolated islands of Maldives, meaning the approach was culturally appropriate, as well as being logistically simple when compared with the costs of having researchers travel to the islands.

Once the sampling frame was updated with phone numbers, the participants on each island in Cluster 2 were drawn randomly. However, in the islands of Cluster 3, considering the small number of older people in each of these islands, the total population 65+ years in each island was taken in the interest of maintaining harmony among peers of the participants. The process and methods of sampling and recruiting the participants has been described in detail in a separate publication (Moosa & Koopman-Boyden, 2015).

Table 4.9: Distribution of the sample and response rate

Sample cluster	Island	Number of participants enrolled	Number of completed Interviews	Response rate by island %	Response rate by cluster%
Dense Cluster (island population 100,000 or more)	Male'	118	85	72	72
Moderate Cluster (island population from 1000 to 99,999)	Hanimadhoo	54	52	96	86
	Thoddoo	56	50	89	
	Vilingili	61	45	74	
	Fuahmulah	52	44	85	
Sparse cluster (island population less than 1000)	Goidhoo	20	20	100	95
	AdhOmadhoo	20	19	95	
	Dihurah	16	12	75	
	Lhohi	24	23	96	
	ThOmadhoo	21	21	100	
	Finey	22	22	100	
Total		464	393	85	85

The potential participants were provided with information about the survey through informal contacts, while consent for participation was obtained prior to the structured telephone interview.

A sample of 464 was selected for the survey from the 11 islands of the three clusters (Table 4.9). A total of 393 participants completed the survey, providing an overall response rate of 85 per cent.

4.5.3 Conducting the interviews

Structured telephone interviews were conducted over a period of three months, (June to August 2012). The telephone interview method was chosen for the following reasons.

- Postal services are not well established in the smaller islands of Maldives, ruling out the possibility of using self-enumerated postal questionnaires.
- Across the islands of Maldives, there is wide telephone coverage using mostly mobile technology, even in the more isolated islands, with the number of mobile telephones per 100 people reaching 141 (Ibrahim, 2010).
- Because of the geographically dispersed nature of the country, face-to-face interviews would incur very high financial cost (due to the high cost of travel by sea), increasing the cost of the study about six fold. In addition, when the time required to travel to the islands is considered, it would have taken three times as long to complete the study.
- Exposure fatigue is expected to be minimal as telephone surveys are infrequent in Maldives.

In addition, the academic discourse on interview methods indicates that each method has advantages and disadvantages. While face-to-face interview methods have the advantage for the researcher that the respondent understands the question, telephone interviews elicit more open responses that are not affected by the characteristics of the interviewer (Bryman, 2001). However, even though the quality of data is slightly better in personal interviews, the differences between face-to-face and telephone interviews have become less over the years (Groves et al., 2001) and are no longer considered significant.

The interviews were conducted by the researcher and a research assistant who worked under the supervision of the researcher. Prior to each interview taking place, the participants were screened, verified and verbal consent obtained to proceed with the interview. Multiple calls were made to some participants rather than have them become unduly fatigued. The overall response rate was high (see Table 4.9), and non-responses to specific items were encountered only occasionally.

4.6 Data management and analysis

A key aspect of the data management was to ensure accuracy and confidentiality of the data. The survey data was entered in a computer programme during the interviews to generate a Microsoft Excel file. The data were imported to the statistical software IBM SPSS 20 for coding and analysis. The dataset was stored in the personal computer of the researcher, as well as a computer at the National Institute of Demographic Analysis (NIDEA) at the University of Waikato, both of which are password protected and accessible only to the researcher and authorised persons at the University of Waikato (as agreed in the Ethical statement, Appendix F).

The focus of the statistical analysis was to obtain results for the research questions and test the hypotheses. The analysis included simple frequencies, percentage distributions, cross tabulations, correlation analysis and multiple regression methods. In addition, confirmatory factor analyses were applied to assert the reliability of the scales used for the composite measures developed. As measurement errors could affect the results of the statistical analysis, the data from completed questionnaires only was used because the response rate was quite high. In addition, to address the errors due to item-nonresponse, the analysis used list-wise selection of the data in the correlation and regression tests.

In the analysis, data were disaggregated by gender and geographic isolation of the islands as they related to the hypotheses. Gender was categorised into male and female. For geographic isolation the participants were grouped according the population size of the islands. The geographic isolation of the islands was categorised according to the population size of islands, consistent with the clusters used in sampling: a dense population cluster (island population 100,000 and more) that is least isolated, a moderate population cluster (island population 99,999 to 1,000) that has a medium level of isolation, and a sparse population cluster (island population less than 1,000) that is most isolated.

The results of the survey are presented in frequency tables and cross tabulations including comparisons of the indicators by gender and geographic isolation of the island clusters based on population size of the islands, and significant differences identified by using Pearson's chi-square tests (see Chapter 5). As noted earlier, as the number of items for each score on the 5 item scale was too small for statistical

tests of associations and significance test, the data for the scales on the life domains were compressed into a scale of 1 to 3. For the analysis, the data were compressed (4 through 5=3), (3=2) and (1 through 2=1), and recoded. Pearson's correlation statistics for the conceptual model of wellbeing were analysed to identify the relationship of the life domains with wellbeing, their significance, direction and size of the association and the predictability of wellbeing by the set of five life domains. For this purpose, dummy variables were created on a 0-1 scale for the variables that had scores on the scale of 1-3 to ensure the test was appropriate and results are valid (see data dictionary in Appendix H).

The results of the indicators of wellbeing and the tests of statistical associations were then examined and are discussed in subsequent chapters identifying unique characteristics applicable to the Maldives context. The analysis is further used to identify the relevant indicators to monitor the wellbeing of the population aged 65+ years in Maldives and other SIDS.

4.7 Ethical considerations

The University of Waikato's Regulations on Ethical Conduct in Human Research and Related Activities (University of Waikato, 2008) guided this research. Ethical approval was granted by the University of Waikato's Faculty of Arts and Social Sciences Human Research Ethics Committee (dated 23 August 2011). Ethical approval was also obtained from the National Health Research Committee, Ministry of Health and Family of Maldives (dated 12 September 2011). Copies of the approvals granted from these institutions are in Appendix F.

4.8 Summary

The research adopts a pragmatic approach to knowledge claims and uses a mix of qualitative and quantitative methods. The qualitative inquiry is used at the outset mainly to identify the appropriateness of the conceptualisation of the determinants of wellbeing and to inform the development of operational indicators and research instrument. Hence, the research is primarily quantitative and undertakes survey research in Maldives for the empirical measurement and verification of theory through a set of hypotheses. The results of the survey are presented in the following chapters.

CHAPTER 5: SUMMARY INDICATORS OF WELLBEING OF OLDER PEOPLE IN MALDIVES

This chapter presents an initial summary of the survey findings. The demographic and socio-economic characteristics of the sample are described, followed by the descriptive statistics on the indicators of the life domains in the conceptual model of wellbeing that were operationalised. The chapter reports on the levels of wellbeing and life domain indicators, to establish baseline information on the important indicators of the wellbeing of older people in Maldives, one of the objectives of this study. The results of each life domain's subjective and objective indicators are presented as cross-tabulations with respect to gender and geographic isolation that provide the basis to understand the findings in relation to the research questions. In addition, the descriptive statistics on the main components of the composite indicators of social connectedness, access to goods and services, and social values and norms are reported to gain a detailed understanding of the circumstances that influence these life domains.

5.1 Characteristics of the sample

As noted in the previous chapter, 393 people in Maldives aged 65+ years were surveyed. What follows is a description of the demographic and socio-economic characteristics of these participants. Specifically the findings related to their family, living arrangements, education, work and income are presented to provide the basis to understand how they relate to the achievements in the life domains and wellbeing.

5.1.1 Demographic characteristics

A summary of the key characteristics of the sample with respect to age, gender and island cluster is provided in Table 5.1. The age of the participants ranges from 65 years to 101 years, with a median age of 73.27 years. When compared to the total population of 65+ year olds in Maldives (in 2006), the sample has an appropriate representation of the age group divisions beyond 65+ years. It also has an equal representation of males (50.1%) and females (49.9%), the M:F ratio being 1.01:1, although the M:F ratio in the total population of this age group at 2006 Census was 1.27:1 (Ministry of Planning and National Development, 2008).

Out of the three island clusters from which the sample was drawn, the moderate population cluster had the majority of the participants (48.6%), while 21.6 per cent were from the dense population cluster, and 29.8 per cent were from the sparse population cluster. The age and geographic distribution of the sample closely matches the wider demographic profile of older people in Maldives (see Table 5.1) and provides a solid basis for considering questions of wellbeing and its correlates among this group.

Table 5.1: Representativeness of the survey sample compared to the total population of 65+ years, 2006, Maldives (N=393)

Sample Characteristics	Sample (N)	Sample (%)	Total population 65+ years in 2006 (%)*
Age groups			
65 - 69 years	116	29.5	40.7
70 - 74 years	139	35.4	30.0
75 - 79 years	76	19.3	17.1
80 + years	62	15.8	12.2
Gender			
Male	197	50.1	55.9
Female	196	49.9	44.1
Island Clusters (geographic isolation)			
Dense population cluster (pop >= 100,000)	85	21.6	22.1
Moderate population cluster (pop 1000 to 99,999)	191	48.6	50.5
Sparse population cluster (pop <1000)	117	29.8	27.4

* Data from Census 2006 data set (Ministry of Planning and National Development, 2007b).

5.1.2 Marriage and children

Marriage is almost universal among the participants with only 1.3 per cent ‘never married’ (Table 5.2). At the time of the survey, 35.6 per cent of the participants were ‘widowed’ and 8.4 per cent were ‘divorced’. Widowhood was higher among females (26.7%) than widowerhood among men (8.9%). Although 54.7 per cent of the sample was married, the majority were men (35.9%) with 18.8 per cent being married women. This is consistent with the findings from the 2006 Census in Maldives where higher widowhood was also observed among older females (Ministry of Planning and National Development, 2007b).

As described in Chapter 2, multiple marriages are common in Maldives, with the majority of the participants (71.5%) having had more than one partner during their life time, and only about a quarter of the participants, both male and female (27.2%), having had only one partner during their lifetime.

Table 5.2: Current marital status and number of marriages during the life time, by gender (N=393)

Marital status	Married		Widowed		Divorced		Never married		Total	
	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total
Male	141	35.9	35	8.9	17	4.3	4	1.0	197	50.1
Female	74	18.8	105	26.7	16	4.1	1	0.3	196	49.9
Total	215	54.7	140	35.6	33	8.4	5	1.3	393	100

Number of marriages during life time										
No. of people married	1		2		3		4 or more		Total	
	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total
Male	49	12.5	53	13.5	39	9.9	52	13.2	197	50.1
Female	58	14.8	44	11.2	47	12.0	46	11.7	196	49.9
Total	107	27.2	97	24.7	86	21.9	98	24.9	393	100

With regard to children, most of the participants (96.2%) had children ranging in total between 1-16 (Table 5.3).

Table 5.3: Number of children by gender (N=393)

No. of children	0		1-5 children		6-10 children		11 or more		Total	
	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total
Male	7	1.8	82	20.9	93	23.7	15	3.8	197	50.1
Female	8	2.0	87	22.1	87	22.1	14	3.6	196	49.9
Total	15	3.8	169	43.0	180	45.8	29	7.4	393	100.0

5.1.3 Living arrangements

Living in an extended family continues to be the norm in Maldives, with 45.8 per cent of the participants living in the household with ‘spouse and children’ and another 36.4 per cent living with ‘children only’ (Table 5.4). Only 7.1 per cent of the participants lived with ‘spouse only’ and another 7.4 per cent lived alone. The living arrangements of the respondents by gender and residential island cluster are presented in Table 5.4.

The proportion of men who lived with ‘spouse and children’ was twice that of women (30.8% compared to 15%) while the proportion of women living with ‘children only’ was more than twice that of men (25.2% compared to 11.2%). This is most likely a reflection of higher widowhood among females than males. These gender differences were, however, not statistically significant.

Of those participants who lived with ‘spouse and children’ and with ‘spouse only’ the majority lived in the moderate population cluster (23% out of 45.8% of all living with ‘spouse and children, and 4.8% out of 7.1% of those living with ‘spouse only’). Although more participants who lived ‘alone’ were also in the

moderate population cluster, examination of data within the island clusters shows that those who lived ‘alone’ were highest in the sparse population island cluster, this being 9.4 per cent (11 / 117) compared with 6.3 per cent (12 / 191) in the moderate population cluster and 7.1 per cent (6 / 85) in the dense population cluster (see Table 5.4).

Table 5.4: Living arrangements by gender and island cluster (N=393)

Living arrangement	Spouse only		Spouse & children		Children only		Relatives		Friends & others		Alone		Total	
	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total
Gender														
Male	16	4.1	121	30.8	44	11.2	3	0.8	0	0.0	13	3.3	197	50.1
Female	12	3.1	59	15.0	99	25.2	8	2.0	2	0.5	16	4.1	196	49.9
Total	28	7.1	180	45.8	143	36.4	11	2.8	2	0.5	29	7.4	393	100
Island cluster (population)														
Dense	5	1.3	36	9.2	37	9.4	1	0.3	0	0.0	6	1.5	85	21.6
Moderate	19	4.8	94	23.9	55	14.0	9	2.3	2	0.5	12	3.1	191	48.6
Sparse	4	1.0	50	12.7	51	13.0	1	0.3	0	0.0	11	2.8	117	29.8
Total	28	7.1	180	45.8	143	36.4	11	2.8	2	0.5	29	7.4	393	100

The percentage of older people living alone was higher in this study compared to the findings of the 2006 Census, in which the figure was only 3 per cent. This could indicate a change since then. In 2006, the percent of those living with friends and non-relatives was higher (2%) than that observed in this study (0.5%). It could indicate that when the older people do not have the option to live with family, they may be preferring to live alone rather than with friends and others.

The majority of the participants (79.1%) lived in their own or their spouse's home (Table 5.5). Another 16.3 per cent lived in houses owned by ‘another family member’ (i.e. children, siblings and other relatives). Very few participants (4.1%) lived in rented places, while living in a place owned by a friend or a non-relative was a rare occurrence.

Table 5.5: Ownership of house by gender and island cluster (N=393)

Home ownership	Own or spouse		Family member		Rented		Friend & others		Total	
	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total
Gender										
Male	172	43.8	19	4.8	6	1.5	0	0.0	197	50.1
Female	139	35.4	45	11.5	10	2.5	2	0.5	196	49.9
Total	311	79.1	64	16.3	16	4.1	2	0.5	393	100
Island cluster (population)										
Dense	62	15.8	12	3.1	11	2.8	0	0.0	85	21.6
Moderate	153	38.9	31	7.9	5	1.3	2	0.5	191	48.6
Sparse	96	24.4	21	5.3	0	0.0	0	0.0	117	29.8
Total	311	79.1	64	16.3	16	4.1	2	0.5	393	100

Ownership of the house was higher among men (43.8% compared to 35.4% of women), although this difference was not statistically significant. The difference in gender could be due to inheritance laws in Maldives that favour men. Although the differences by island cluster were not significant, home ownership was lowest in the dense population island cluster (15.8%) and highest in the moderate population cluster. The differences in island cluster could be a reflection of land shortages and higher cost in the dense population cluster compared to the other two clusters of islands.

5.1.4 Education

The educational attainment of the participants was low, with 64.4 per cent being able to ‘read and write’, and 12 per cent of the participants being illiterate (see Table 5.6). Although the differences observed by gender were not statistically significant ($p>.05$), among those who were illiterate, there were more men than women (7.1% and 4.8% respectively), and more women than men can ‘read and write’ (33.3% compared to 31.0% men). At ‘primary’, ‘secondary’ and ‘vocational’ levels the difference is very small (Table 5.6). This reflects the historical impact of the adult literacy programme in the 1980s (described in Chapter 2).

Table 5.6: Educational attainment by gender and island cluster (N=393)

Educational attainment	Illiterate		Read & write*		Primary		Secondary		Vocational certificate		Total	
	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total
Gender												
Male	28	7.1	122	31.0	37	9.4	4	1.0	6	1.5	197	50.1
Female	19	4.8	131	33.3	38	9.7	3	0.8	5	1.3	196	49.9
Total	47	12.0	253	64.4	75	19.1	7	1.8	11	2.8	393	100.0
Island cluster (population)												
Dense	4	1.0	38	9.7	33	8.4	7	1.8	3	0.8	85	21.6
Moderate	21	5.3	134	34.1	30	7.6	0	0.0	6	1.5	191	48.6
Sparse	22	5.6	81	20.6	12	3.1	0	0.0	2	0.5	117	29.8
Total	47	12.0	253	64.4	75	19.1	7	1.8	11	2.8	393	100.0

*‘Read and write’ is defined as being able to read and write the local language only.

There were more illiterate participants in the sparsely and moderate population clusters (5.6% and 5.3% respectively) than the dense population cluster (1%); however, these differences were not significant ($p>.05$). The moderate and sparse population clusters had lower educational levels, with a higher proportion of participants who were able to ‘read and write’, while in the dense population cluster the proportion with ‘primary’, ‘secondary’ education was greater. The literacy rate of the sample is lower (88%) than the literacy rate recorded for 65+

year olds in the 2006 Census: 90.4 per cent (Ministry of Planning and National Development, 2007b).

5.1.5 Income and work

Almost all participants (99.2%; N=387) had some means of income, with only 0.8 per cent (N=3) reporting not getting any money. Most participants had more than one source of income (see Table 5.7). The most common source of income was the old-age pension with 95.1 per cent of participants receiving it, followed by informal remittances from family and friends (58.7%), and work (29.0%). The most common ‘other’ source of income was the allowance for long-service from former employers. There were no significant gender differences among those who received the old-age pension ($p>.05$), although more men (17.9%) than women (11.0%) received income from work, while more women (34.4%) received money from family and friends compared to men (24.4%). The majority of the old-age pension recipients (46.4%) lived in the moderate population cluster with the lowest number living in the dense population cluster.

Table 5.7: Sources of income by gender and island cluster (N=390)

Source of income	Old-age pension		Work		Owned assets		Family & friends		Other	
	N	% of Total	N	% of Total	N	% of Total	N	% of Total	N	% of Total
Gender										
Male	185	47.4	70	17.9	23	5.9	95	24.4	6	1.5
Female	186	47.7	43	11.0	17	4.4	134	34.4	1	0.3
Total	371	95.1	113	29.0	40	10.3	229	58.7	7	1.8
Island cluster (population)										
Dense	77	19.7	13	3.3	21	5.4	46	11.8	4	1.0
Moderate	181	46.4	70	17.9	17	4.4	113	29.0	1	0.3
Sparse	113	29.0	30	7.7	2	0.5	70	17.9	2	0.5
Total	371	95.1	113	29.0	40	10.3	229	58.7	7	1.8

Although the old-age pension is universal for people 65+ years (i.e. without a means-test), the findings show that a small proportion do not receive it. This could be a result of difficulty in registering or personal choice given existing wealth.

A large proportion of the participants (73.6%) were engaged in informal household work (Table 5.8), 41.5 per cent women and 32.1 per cent men. About one fifth (19.2%) of the participants were not engaged in any type of work (either paid or unpaid), the majority of these being women (12.3% compared with 6.9% men). These differences, however, were not statistically significant ($p>.05$). A third of the older people (33.1%) were engaged in paid work, with 3.1 per cent as

employees and 30.1 per cent self-employed. Engagement in any type of paid work was more common among men (21.6%) than women (11.5%). Self-employment was most prevalent in the moderate population cluster, and least in the dense population cluster (see Table 5.8).

Although the differences by gender and island clusters were not significant, the gender difference reflects the traditional role of men as the income earner and women as the home-maker. Island cluster difference also reflect the most common occupations in the islands – fishing and other self-managed small businesses in the more isolated islands, compared with the more commercial businesses in the dense population cluster.

Table 5.8: Engagement in work by gender and island cluster (N=390)

Engagement in work	Paid work				Informal work		No work	
	Employed		Self employed		Household work		Don't do any work	
	N	% of Total	N	% of Total	N	% of Total	N	% of Total
Gender								
Male	10	2.6	74	19.0	125	32.1	48	12.3
Female	2	0.5	43	11.0	162	41.5	27	6.9
Total	12	3.1	117	30.0	287	73.6	75	19.2
Island cluster (population)								
Dense	6	1.5	12	3.1	61	15.6	17	4.4
Moderate	5	1.3	71	18.2	143	36.7	30	7.7
Sparse	1	0.3	34	8.7	83	21.3	28	7.2
Total	12	3.1	117	30.0	287	73.6	75	19.2

5.2 Wellbeing

As described in the previous chapter, wellbeing was measured using the indicator ‘overall satisfaction with life’ on a scale of 1-5, subsequently collapsed to a scale of 1-3 (1 being low and 3 being high) for analysis. The mean level of wellbeing for the sample was 2.55 (Std. Error = 0.033) and the majority (64.5%) of older people surveyed had a high level of wellbeing (reported as ‘satisfied’ with life). The levels of wellbeing in the sample are presented in Table 5.9.

Significant differences in the levels of wellbeing exist by gender (chi square=9.681, df=2, p=.008), with fewer women reporting a high level of wellbeing (28.6% being satisfied with life) compared to men (35.8%). Among those who reported low levels of wellbeing (reported as ‘dissatisfied’ with life), the proportion of women was higher than men (5.9% and 3.1% respectively).

Moderate levels of wellbeing (‘neither satisfied nor dissatisfied’ with life), were reported by more women (15.6%) than men (11.0%).

Table 5.9: Levels of wellbeing by gender and island cluster* (N=391)

Wellbeing (Overall satisfaction with life)	LOW (Dissatisfied)			MODERATE (Neither satisfied nor dissatisfied)			HIGH (Satisfied)			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	12	6.2	3.1	43	22.1	11.0	140	71.8	35.8	195	49.9
Female	23	11.7	5.9	61	31.1	15.6	112	57.1	28.6	196	50.1
Total	35	9.0	9.0	104	26.6	26.6	252	64.5	64.5	391	100.0
Island cluster (population)											
Dense	12	14.3	3.1	15	17.9	3.8	57	67.9	14.6	84	21.5
Moderate	13	6.8	3.3	36	18.9	9.2	141	74.2	36.1	190	48.6
Sparse	10	8.5	2.6	53	45.3	13.6	54	46.2	13.8	117	29.9
Total	35	9.0	9.0	104	26.6	26.6	252	64.5	64.5	391	100.0

*Island clusters represent geographic isolation and are based on population size - see Chapter 3 for details.

The majority of the participants (36.1%) with high levels of wellbeing (‘satisfied’ with their life) resided in the moderate population cluster (Table 5.9). When data within the island clusters are examined, a similar result is observed, i.e., the largest proportion of those with high levels of wellbeing (74.2%) were from the moderate population cluster, while the sparse population cluster had the lowest proportion of those with high levels of wellbeing (46.2%). Within the sparse population cluster, however, a similar proportion of participants (45.3%) reported their wellbeing to be moderate (‘neither satisfied nor dissatisfied’ with life). The highest proportion of those with low levels of wellbeing (‘dissatisfied’ with life) was found among those living in the dense population cluster (14.3%, compared to 6.8% and 8.5% in the moderate and sparse population clusters respectively). Chi-square tests (see Chapter 5) indicate that these differences in the levels of wellbeing by island cluster are significant (chi square=34.650, df=4, p=.000).

The results of the statistical analysis on the relationship between wellbeing and the life domains are presented in Chapter 6.

5.3 Life domain indicators

Subjective and objective indicators were used for each of the five life domains conceptualised to correlate with wellbeing. The subjective indicators measured the respondent’s satisfaction with each life domain. The respondents were asked to rank their level of satisfaction with the five domains of life: health status, social

connectedness, economic standard of living, social values and norms, and access to goods and services. The objective indicators were obtained through single item questions for the domains of health and economic standard of living, while a composite indicator was computed from multiple items for the domains of social connectedness, conformity to social values and norms, and access to goods and services (details of the indicator measures were discussed in Chapter 4). The results of the statistical relationships of the five life domain indicators with wellbeing will be presented in Chapter 6. What follows are the survey results on the level of the objective and subjective indicators of the life domains, and the differences by gender and wellbeing as they relate to the hypotheses of the research.

5.3.1 Health

The indicators for health are the subjective measure, ‘satisfaction with health’, and the objective measure, ‘self-reported health on a four week recall period’. Both measures were based on the single item questions described in Chapter 4.

5.3.1.1 Satisfaction with health

Half of the respondents (50.4%) were ‘satisfied’ with their health status, while 18.3 per cent were ‘dissatisfied’, and 33.5 per cent ‘neither satisfied nor dissatisfied’ (Table 5.10). The mean value for satisfaction with health on the scale of 1 to 3 was 2.32 (Std. Error = .039) for the sample (N=393). A statistically significant (chi square=6.201, df=2, p=.045) difference is observed in the satisfaction with health status by gender, with males being more satisfied (28%) than females (22%). Within gender, 55.8 per cent of the men were ‘satisfied’, and 44.9 per cent of women.

Table 5.10: Satisfaction with health status by gender and island cluster (N=393)

Satisfaction with health	Dissatisfied			Neither satisfied nor dissatisfied			Satisfied			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	28	14.2	7.1	59	29.9	15.0	110	55.8	28.0	197	50.1
Female	44	22.4	11.2	64	32.7	16.3	88	44.9	22.4	196	49.9
Total	72	18.3	18.3	123	31.3	31.3	198	50.4	50.4	393	100.0
Island cluster (population)											
Dense	15	17.6	3.8	23	27.1	5.9	47	55.3	12.0	85	21.6
Moderate	25	13.1	6.4	55	28.8	14.0	111	58.1	28.2	191	48.6
Sparse	32	27.4	8.1	45	38.5	11.5	40	34.2	10.2	117	29.8
Total	72	18.3	18.3	123	31.3	31.3	198	50.4	50.4	393	100.0

A significant difference in satisfaction with health was observed by island clusters (chi-square=19.634, df=4, p=.001) as well. Within the island clusters, the moderate population cluster had the largest proportion of the respondents (58.1%) who were ‘satisfied’ with their health, followed by those in the dense population islands (55.3%), and the lowest in the sparse population cluster (34%). Correspondingly, the proportion of respondents ‘dissatisfied’ with their health status was highest (27.4%) in the sparse population cluster, compared with 13.1 per cent in the moderate population cluster, and 17.6 per cent in the dense population cluster.

5.3.1.2 Level of health

The results showed that health status was ‘good’ for the majority of the respondents (42.5%), with about a quarter (24.7%) reporting ‘poor’ health, and 32.8 per cent reporting that their health was ‘neither good nor bad’(see Table 5.11). The mean value for the level of health on the scale of 1-3 was 2.18 (Std. Error = .040) for the sample (N=393). There was a significant difference in the level of health by gender (chi square=11.496, df=2, p=.003) with more men (25.2%) among those who reported ‘good’ health compared to women (17.3%). This translates to 50.3 per cent of men reporting ‘good’ health compared to 37.4 per cent of women.

The level of health showed a significant difference (chi square=16.296, df=4, p=.003) by island cluster, with the highest proportion of respondents reporting their health to be ‘good’ (52.9%) being from the dense population cluster, followed by the moderate (46.1%) and sparse population cluster (29.1%).

Table 5.11: Level of health by gender and island cluster (N=393)

Level of health	Poor			Neither good nor poor			Good			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	47	23.9	12.0	51	25.9	13.0	99	50.3	25.2	197	50.1
Female	50	25.5	12.7	78	39.8	19.8	68	34.7	17.3	196	49.9
Total	97	24.7	24.7	129	32.8	32.8	167	42.5	42.5	393	100
Island cluster (population)											
Dense	13	15.3	3.3	27	31.8	6.9	45	52.9	11.5	85	21.6
Moderate	50	26.2	12.7	53	27.7	13.5	88	46.1	22.4	191	48.6
Sparse	34	29.1	8.7	49	41.9	12.5	34	29.1	8.7	117	29.8
Total	97	24.7	24.7	129	32.8	32.8	167	42.5	42.5	393	100.0

(a) Physical and mental health: The results showed that for the sample the mean score out of 100 for physical health was higher (64.88, SD=22.88, N=391) than mental health (63.35, SD=17.99, N=389). Men had significantly higher scores ($p<.01$) for both physical and mental health with a larger proportion of men than women having ‘good’ levels (see Table 5.12). The differences by island cluster were significant only for the physical health ($p<.01$), with a larger proportion of people (61.4%) living in the dense population cluster having ‘good’ physical health (scores in the upper third of the score) compared with those in the moderate (59.7%) and the sparse population cluster (34.2%).

Table 5.12: Physical and mental health status by gender and island cluster

Physical & mental health	Poor (scores in lower third)			Moderate (scores in middle third)			Good (scores in upper third)			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Physical health											
Gender											
Male	19	9.7	4.9	56	28.6	14.3	121	61.7	30.9	196	50.1
Female	23	11.8	5.9	88	45.1	22.5	84	43.1	21.5	195	49.9
Total	42	10.7	10.7	144	36.8	36.8	205	52.4	52.4	391	100.0
Island cluster (population)											
Dense	10	12.0	2.6	22	26.5	5.6	51	61.4	13.0	83	21.2
Moderate	15	7.9	3.8	62	32.5	15.9	114	59.7	29.2	191	48.8
Sparse	17	14.5	4.3	60	51.3	15.3	40	34.2	10.2	117	29.9
Total	42	10.7	10.7	144	36.8	36.8	205	52.4	52.4	391	100.0
Mental health											
Gender											
Male	8	4.6	2.3	71	41.0	20.6	94	54.3	27.3	173	50.3
Female	12	7.0	3.5	101	59.1	29.4	58	33.9	16.9	171	49.7
Total	20	5.8	5.8	172	50.0	50.0	152	44.2	44.2	344	100.0
Island cluster (population)											
Dense	6	8.1	1.7	28	37.8	8.1	40	54.1	11.6	74	21.5
Moderate	7	4.1	2.0	73	42.9	21.2	90	52.9	26.2	170	49.4
Sparse	7	7.0	2.0	71	71.0	20.6	22	22.0	6.4	100	29.1
Total	20	5.8	5.8	172	50.0	50.0	152	44.2	44.2	344	100.0

5.3.2 Social connectedness

The indicators for social connectedness were the subjective measure ‘satisfaction with overall social connectedness’ (including family, friends and others), and the objective measure of ‘level of overall social connectedness’. In addition, the subjective measure of ‘satisfaction with family’s social connectedness’, and ‘satisfaction with friends’ social connectedness’ were used to identify distinctive characteristics of social connectedness. The subjective measure was based on single item questions, while the objective measure was a composite, computed from multiple items as described in Chapter 4.

5.3.2.1 Satisfaction with overall social connectedness

The satisfaction with overall social connectedness was high, with 62.1 per cent of the respondents being ‘satisfied’, while 8.2 per cent were ‘dissatisfied’. About a third (29.7%) were ‘neither satisfied nor dissatisfied’ (see Table 5.13). The mean value for satisfaction with social connectedness on the scale of 1 to 3 was 2.54 (Std. Error = .033) for the sample (N=391). Although, gender difference was not statistically significant, the proportion of women who were ‘dissatisfied’ with their overall social connectedness was higher (5.1% of total and 10.2% of women) than men (3.1% of the total and 6.2% of men),

A significant difference (chi square=14.449, df=4, p=.006) was observed in the satisfaction with overall social connectedness by island cluster. The majority of older people (70.2%) in the moderate population cluster were ‘satisfied’, as well as in the sparse population cluster (60.3%), while fewer were ‘satisfied’ with their overall social connectedness in the dense population cluster (46.4%).

Table 5.13: Satisfaction with overall social connectedness by gender and island cluster (N=391)

Satisfaction with overall social connectedness	Dissatisfied			Neither satisfied nor dissatisfied			Satisfied			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	12	6.2	3.1	59	30.3	15.1	124	63.6	31.7	195	49.9
Female	20	10.2	5.1	57	29.1	14.6	119	60.7	30.4	196	50.1
Total	32	8.2	8.2	116	29.7	29.7	243	62.1	62.1	391	100.0
Island cluster (population)											
Dense	9	10.7	2.3	36	42.9	9.2	39	46.4	10.0	84	21.5
Moderate	12	6.3	3.1	45	23.6	11.5	134	70.2	34.3	191	48.8
Sparse	11	9.5	2.8	35	30.2	9.0	70	60.3	17.9	116	29.7
Total	32	8.2	8.2	116	29.7	29.7	243	62.1	62.1	391	100.0

5.3.2.2 Satisfaction with social connectedness with the family

In addition to the overall social connectedness, satisfaction with social connectedness with family was examined. There was a high level of satisfaction with social connectedness with family, with the majority of the respondents (75.7%) reporting that they were ‘satisfied’ (see Table 5.14). Although there were differences by gender and island cluster, these were not significant. Among women 11.7 per cent were ‘dissatisfied’ with the social connectedness with family compared to 8.2 per cent of men. The proportion of those ‘dissatisfied’ with the social connectedness with family was highest within the dense population cluster

(16.7%), followed by 8.6 per cent of those within sparse population cluster and 7.9 per cent within the moderate population cluster.

Table 5.14: Satisfaction with social connectedness with family by gender and island cluster (N=391)

Satisfaction with social connectedness with family	Dissatisfied			Neither satisfied nor dissatisfied			Satisfied			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	16	8.2	4.1	26	13.3	6.6	153	78.5	39.1	195	49.9
Female	23	11.7	5.9	30	15.3	7.7	143	73.0	36.6	196	50.1
Total	39	10.0	10.0	56	14.3	14.3	296	75.7	75.7	391	100.0
Island cluster (population)											
Dense	14	16.7	3.6	11	13.1	2.8	59	70.2	15.1	84	21.5
Moderate	15	7.9	3.8	24	12.6	6.1	152	79.6	38.9	191	48.8
Sparse	10	8.6	2.6	21	18.1	5.4	85	73.3	21.7	116	29.7
Total	39	10.0	10.0	56	14.3	14.3	296	75.7	75.7	391	100.0

5.3.2.3 Satisfaction with social connectedness with friends

With regard to satisfaction with social connectedness with friends, satisfaction was high, with the majority of the respondents (73.9%) reporting that they were ‘satisfied’ (see Table 5.15).

Table 5.15: Satisfaction with social connectedness with friends by gender and island cluster (N=391)

Satisfaction with social connectedness with friends	Dissatisfied			Neither satisfied nor dissatisfied			Satisfied			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	17	8.7	4.3	33	16.9	8.4	145	74.4	37.1	195	49.9
Female	29	14.8	7.4	23	11.7	5.9	144	73.5	36.8	196	50.1
Total	46	11.8	11.8	56	14.3	14.3	289	73.9	73.9	391	100.0
Island cluster (population)											
Dense	8	9.5	2.0	13	15.5	3.3	63	75.0	16.1	84	21.5
Moderate	19	9.9	4.9	23	12.0	5.9	149	78.0	38.1	191	48.8
Sparse	19	16.4	4.9	20	17.2	5.1	77	66.4	19.7	116	29.7
Total	46	11.8	11.8	56	14.3	14.3	289	73.9	73.9	391	100.0

Although there are differences by gender and island cluster, the differences in this type of social connectedness were not significant. More women than men (14.8% compared with 8.7%) were ‘dissatisfied’ with their social connectedness with friends, but an equal percentage of men and women were also ‘satisfied’ (see Table 5.15). The proportion of those ‘dissatisfied’ with the social connectedness with friends was highest within the sparse population cluster (16.4%), followed by 9.9 per cent within the moderate population cluster and 9.5 per cent within the dense population cluster.

5.3.2.4 Level of social connectedness

The level of overall social connectedness among the participants was moderate to good. The majority of the respondents (61.8%) reported a ‘moderate’ level of overall social connectedness, with another 36.6 per cent reporting ‘good’ overall social connectedness (see Table 5.16). The mean value for the level of social connectedness on the scale of 1 to 3 was 2.35 (Std. Error = .026) for the sample (N=393). Although there appears to be a significant difference (chi square=66.063, df=2, p=.000) in the level of overall social connectedness by gender, the results also show that the data are inadequate (in that a number of cells have less than the desired count of 5 in the cross tabulations – see Chapter 6 for details), and should be interpreted with caution, with more men having ‘good’ overall social connectedness (28.2% of total and 56.3% of men) compared with women (8.4% of total and 16.8% of the women). A large proportion of women (40.5%) also had ‘moderate’ levels of social connectedness.

Table 5.16: Level of overall social connectedness by gender and island cluster (N=393)

Level of overall social connectedness	Poor			Moderate			Good			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	2	1.0	0.5	84	42.6	21.4	111	56.3	28.2	197	50.1
Female	4	2.0	1.0	159	81.1	40.5	33	16.8	8.4	196	49.9
Total	6	1.5	1.5	243	61.8	61.8	144	36.6	36.6	393	100.0
Island cluster (population)											
Dense	4	4.7	1.0	53	62.4	13.5	28	32.9	7.1	85	21.6
Moderate	2	1.0	0.5	111	58.1	28.2	78	40.8	19.8	191	48.6
Sparse	0	0.0	0.0	79	67.5	20.1	38	32.5	9.7	117	29.8
Total	6	1.5	1.5	243	61.8	61.8	144	36.6	36.6	393	100.0

Although there were marked differences in the level of overall social connectedness by island cluster, the results were inadequate to confirm a statistically significance difference (see Chapter 6). The largest proportion of those having ‘good’ social connectedness were in the moderate population cluster (40.8%). The dense and sparse population clusters had 32.9 per cent and 32.5 per cent of respondents with ‘good’ social connectedness (see Table 5.16). The proportions having ‘poor’ social connectedness within the dense population cluster were 4.7 per cent compared with 1.0 per cent in the moderate population cluster and 0 per cent in the sparse population cluster.

A number of factors were examined in computing the level of social connectedness related to network characteristics, social engagement and social support. The findings with regard to these factors are described below.

(a) Social network: Respondents were asked about the numbers of family and friends with whom they had close social contact within the preceding four weeks.

Table 5.17: Network size of family and friends by gender and island cluster (N=392)

Number of close contacts	None			1-4 contacts			5 or more contacts		
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total
Family									
Gender									
Male	2	1.0	0.5	78	39.8	19.9	116	59.2	29.6
Female	4	2.0	1.0	91	46.4	23.2	101	51.5	25.8
Total	6	1.5	1.5	169	43.1	43.1	217	55.4	55.4
Island cluster (population)									
Dense	3	3.6	0.8	43	51.2	11.0	38	45.2	9.7
Moderate	1	0.5	0.2	76	39.8	19.4	114	59.7	29.1
Sparse	2	1.7	0.5	50	42.7	12.7	65	55.6	16.6
Total	6	1.5	1.5	169	43.1	43.1	217	55.4	55.4
Friends									
Gender									
Male	8	4.1	2.0	95	48.5	24.2	93	47.4	23.7
Female	10	5.1	2.6	128	65.3	32.7	58	29.6	14.8
Total	18	4.6	4.6	223	56.9	56.9	151	38.5	38.5
Island cluster (population)									
Dense	5	6.0	1.3	45	53.6	11.5	34	40.5	8.7
Moderate	8	4.2	2.0	117	61.3	29.8	66	34.6	16.8
Sparse	5	4.3	1.3	61	52.1	15.6	51	43.6	13.0
Total	18	4.6	4.6	223	56.9	56.9	151	38.5	38.5

The majority of the respondents had at least one social contact who was a family member (98.5%) or a friend (95.4%). More than half (55.4%) had a family network of ‘5 or more family contacts’ (see Table 5.17). Only 1.5 per cent (N=6) had ‘no family contact’. With regard to the friend network, most of the respondents (56.9%) had ‘1- 4 friend contacts’, and 38.5 per cent had ‘5 or more friend contacts’. A small proportion of the respondents (4.6%; N=18) had no friend contacts.

There were no significant differences in the family network size by gender or island cluster. Although the numbers were very small, more women had ‘no family contact’ (4 out of 6) and ‘no friend contact’ (10 out of 18) compared to men (Table 5.17). Similarly, when considering family network size in relation to island cluster, a smaller proportion of people in the dense population cluster had

‘5 or more’ family contacts compared with the other two clusters (45.2% in the dense population cluster compared with 59.7 per cent in the moderate population and 55.6% in the sparse population cluster).

With regard to friend network size, a significant difference was observed between men and women ($p < .01$). A larger proportion of men had ‘5 or more friend contacts’ than women (47.4% of men had ‘5 or more friends contacts’ compared to 29.6% of women). However, there were no significant differences between the island clusters for the friend network size (see Table 5.17). The proportion of those having ‘5 or more friend contacts’ was lower in the moderate population cluster (34.6%) compared with the other two island clusters (40.5% in the dense population cluster and 43.6% in the sparse population cluster).

(b) Frequency of contact: A large proportion of the respondents were in frequent contact with family and friends (see Table 5.18). The respondents were asked about the frequency of contact in the preceding four weeks with family members who were not living with them (family living elsewhere), and with friends. The respondents were informed that the contact could have been by any means either in-person or with the use technology such as telephone or internet.

A large proportion of the respondents (67.3%) reported that they met family members living elsewhere ‘daily’ or ‘weekly’, and 91.1 per cent reported to meeting friends ‘daily’ or ‘weekly’ (see Table 5.18). Only 4 per cent did not meet friends or family at any time (4.3% and 4.1% respectively).

Although the difference is not significant, women met family living elsewhere and friends less frequently than men (Table 5.18). Among those who met with family members living elsewhere and friends ‘daily’ or ‘weekly’, there were more men than women (a total 36.5% men compared to 30.9% women met ‘family who they do not live with ‘daily’ or ‘weekly’, and 46.2% of men compared to 44.9% women met friends ‘daily’ or ‘weekly’). Likewise, more women ‘do not meet’ family and friends (women account for 10 out of the 16 respondents who ‘do not meet’ family living elsewhere and 11 out of 17 who ‘do not meet’ friends).

The differences by the island clusters in the frequency of meeting family who live elsewhere were not significant, but were lowest was among people living in the dense population cluster (53.6% meeting ‘daily’ or ‘weekly’ compared to 77.0%

in moderate population cluster and 61.5% in sparse population cluster, see Table 5.18). The frequency of meeting with friends ‘daily’ or ‘weekly’ was high in all island clusters (90.5% meet 'daily' or 'weekly' in the dense population cluster, 93.7% in the moderate population cluster and 87.2% in the sparse population cluster). However, these differences were not statistically significant ($p>.05$).

Table 5.18: Frequency of contact with family and friends by gender and island cluster (N=392)

Frequency of contact	Don't meet			Monthly or less			Weekly			Daily		
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total
Family living elsewhere (not co-residing)												
Gender												
Male	6	3.1	1.5	47	24.0	12.0	80	40.8	20.4	63	32.1	16.1
Female	10	5.1	2.6	65	33.2	16.6	68	34.7	17.3	53	27.0	13.5
Total	16	4.1	4.1	112	28.6	28.6	148	37.8	37.8	116	29.6	29.6
Island cluster (population)												
Dense	6	7.1	1.5	33	39.3	8.5	33	39.3	8.5	12	14.3	3.0
Moderate	5	2.6	1.3	39	20.4	9.9	75	39.3	19.1	72	37.7	18.4
Sparse	5	4.3	1.3	40	34.2	10.2	40	34.2	10.2	32	27.4	8.2
Total	16	4.1	4.1	112	28.6	28.6	148	37.8	37.8	116	29.6	29.6
Friends												
Gender												
Male	6	3.1	1.5	9	4.6	2.3	37	18.9	9.4	144	73.5	36.7
Female	11	5.6	2.8	9	4.6	2.3	58	29.6	14.8	118	60.2	30.1
Total	17	4.3	4.3	18	4.6	4.6	95	24.2	24.2	262	66.8	66.8
Island cluster (population)												
Dense	5	6.1	1.4	3	3.6	0.8	19	22.6	4.8	57	67.9	14.5
Moderate	8	4.2	2.0	4	2.1	1.0	40	20.9	10.2	139	72.8	35.5
Sparse	4	3.4	1.0	11	9.4	2.8	36	30.8	9.2	66	56.4	16.8
Total	17	4.4	4.4	18	4.6	4.6	95	24.2	24.2	262	66.8	66.8

(c) Type of social contact: The respondents were also asked about the most common way of contacting family members living elsewhere (i.e. not co-residing with the participants) and friends with the response options ‘in person’, ‘by phone/internet’ (ICT), and ‘both – in person and by ICT’.

The most common way of contacting family (who they do not live with) and friends was ‘in person’, with 67.3 per cent contacting friends ‘in person’ and 43.9 per cent contacting family ‘in person’ (see Table 5.19). About a quarter of the respondents (25.5%) contacted friends by ‘both – in person and by ICT’, while a larger proportion (37.8%) used ‘both – in person and by ICT’ to contact family living elsewhere. A small proportion contacted family and friends ‘by phone/internet’ (ICT), more so to contact friends (3.6% contact friends ‘by

phone/internet’), while a larger proportion of the participants (16.1%) contacted family living elsewhere this way.

A number of differences were observed in the type of contact with family and friends by gender and island cluster (see Table 5.19), but they were not statistically significant. Although the gender difference in the type of contact with family and friends was small, the proportion who contacted family living elsewhere ‘in person’ was higher for males (48% of men and 39.8% of women meet family ‘in person,’ and 69.4% of men compared to 65.3% of women meet friends ‘in person’). However, more females use ‘both – in person and by ICT’ (43.9% of women and 31.6% of men use ‘both – in person and by ICT’ for contacting family, and 27.0% of women compared to 24.0% of men ‘both – in person and by ICT’ for contacting friends).

Table 5.19: Type of contact with family and friends by gender and island cluster (N=392)

Type of contact	In person			Phone/ Internet (ICT)			Both (in person & ICT)		
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total
Family living elsewhere (not co-residing)									
Gender									
Male	94	48.0	24.0	36	18.4	9.2	62	31.6	15.8
Female	78	39.8	19.9	27	13.8	6.9	86	43.9	21.9
Total	172	43.9	43.9	63	16.1	16.1	148	37.8	37.8
Island cluster (population)									
Dense	21	25.0	5.4	18	21.4	4.6	40	47.6	10.2
Moderate	85	44.5	21.7	31	16.2	7.9	73	38.2	18.6
Sparse	66	56.4	16.8	14	12.0	3.6	35	29.9	8.9
Total	172	43.9	43.9	63	16.1	16.1	148	37.8	37.8
Friends									
Gender									
Male	136	69.4	34.7	6	3.1	1.5	47	24.0	12.0
Female	128	65.3	32.7	8	4.1	2.0	53	27.0	13.5
Total	264	67.3	67.3	14	3.6	3.6	100	25.5	25.5
Island cluster (population)									
Dense	42	50.0	10.7	3	3.6	0.8	34	40.5	8.7
Moderate	131	68.6	33.4	10	5.2	2.6	46	24.1	11.7
Sparse	91	77.8	23.2	1	0.9	0.3	20	17.1	5.1
Total	264	67.3	67.3	14	3.6	3.6	100	25.5	25.5

NB: Table does not include those who have no contact.

Within the island clusters, the proportion of those who contacted family members ‘in person’ was lowest (25.0%) within the dense population cluster (see Table 5.19) and highest in the sparse population cluster (56.4%). The opposite was observed in the use of ‘by phone/internet’ (ICT) and ‘both – in person and by ICT’ where highest proportion was within the dense population cluster (21.4%

contacted ‘by phone/internet’ (ICT) and ‘47.6% for ‘both – in person and by ICT’).

(d) Place of contact: The majority of the respondents (74%) met with family contacts at their houses and another 21.4 per cent met either at home or in the street (see Table 5.20). Similarly 70.7 per cent of the respondents met their friends also at their houses. Other common meeting places with friends included ‘the street’ (54.1%), ‘near the mosque’ (43.6) and ‘at the beach side’ (41.8%). A smaller proportion (21.7%) met ‘at the market/shops’ and very few (4.8%) met friends ‘at work’.

Table 5.20: Meeting place with family and friends (N=393)

Meeting place	N	% of total
Family (not co-residing)		
At house	291	74.0
On the street	7	1.8
At house and on the street	84	21.4
Friends		
At house	277	70.7
On the street	212	54.1
At beach side	164	41.8
At market/shops	85	21.7
Near mosque	171	43.6
At work	19	4.8

No significant gender difference was observed in the meeting place of family members, but with friends there were significantly more men than women meeting at places other than ‘house’ and ‘street’. For instance, significantly more men met ‘near the mosque’ ($p<.01$) and ‘at the beach side’ than women (66.0% of men met ‘near mosque’ compared to 21% of women; and 49.2% of men met friends at the beach side, 34.4% of women.). Similarly, significantly more men met friends ‘at market/shops’ and ‘at work’ ($p< .05$ for both variables). A small percentage of older people met friends at ‘work’ (26.4% of men meet friends at ‘market/shops’ compared to 16.9% of women and 7.1% of men meet friends at ‘work’ compared to 2.6% women).

Among those living in different island clusters, there are significant differences in the meeting place with family as well as friends (data tables not shown here). Meeting family ‘at house’ was significantly higher ($p<.01$) among the moderate and dense population clusters (84.3% and 75.3% respectively) compared to the sparse cluster (56.4% meet family ‘at house’). Alternatively, meeting with friends

‘at house’ was significantly lower ($p < .01$) within the dense population cluster compared with the moderate and sparse population clusters (47.6% of dense cluster meet friends ‘at house’ compared to 79.6% and 72.6% in the moderate and sparse clusters). Another significant difference ($p < .05$) between the island clusters was ‘market/shops’ as a meeting place with friends, with more older people (39.3%) in the dense population cluster meeting friends at ‘market/shops’ compared to 20.9 per cent and 10.3 per cent in the moderate and sparse population clusters. However, with respect to the older people meeting friends ‘on the street’, ‘at mosque’, ‘at the beach’, and ‘at work’ there were no significant differences among people living in the different island clusters ($p > .05$ for all the variables).

(e) Social engagement: Respondents were asked to recall their social activities in the previous four weeks and respond to five types of social activity with the response options being ‘quite often’, ‘no’, and ‘a few times’. The five types of social activity were: with family (e.g. sharing a meal), religious social activity (e.g. going to the mosque for prayers or religious sermons), personal social activity (e.g. going shopping), social activity with friends (e.g. going for walks or just to ‘hang-out’), and a community social activity (e.g. preparing for a celebration, community meeting or island clean up). The results are presented in Table 5.21.

The majority of the respondents (82.4%) had engaged ‘a few times’ or ‘quite often’ in a social activity with family and 81.2 per cent with friends. Engagements in religious social activities and personal social activities were less common (54.3% went to the mosque and 37.4% went shopping). Only a quarter of the respondents (25.3%) engaged in community social activities.

Differences in participation in these activities were varied, and not always significant. For example, although more men engaged in all types of social activities, no significant gender differences in activities with family or personal social activities were observed. However, a significant difference was observed for engagement in religious activities ($p < .01$), with the majority of women (74.4%) reporting that they did not participate in religious activity such as going to mosque while a very small percent (17.3%) of men did not go to mosque.

Table 5.21: Engagement in social activity by gender and island cluster

Engagement in social activity		Gender		Island cluster (population)			Total
		Male	Female	Dense	Moderate	Sparse	
Family social activity							
No	N	35	34	12	32	25	69
	% within group	17.9	17.3	14.3	16.8	21.4	17.6
	% of Total	8.9	8.7	3.1	8.2	6.4	17.6
Yes (a few times or quite often)	N	161	162	72	159	92	323
	% within group	81.5	82.6	85.7	83.2	78.7	82.4
	% of Total	41.0	41.4	18.4	40.6	23.5	82.4
Total	N	196	196	84	191	117	392
	% of Total	50.0	50.0	21.4	48.7	29.8	100.0
Social activity with friends							
No	N	26	48	16	27	31	74
	% within group	13.2	24.6	19.0	14.1	26.5	18.9
	% of Total	6.6	12.2	4.1	6.9	7.9	18.9
Yes (a few times or quite often)	N	171	147	68	164	86	318
	% within group	86.8	75.4	80.9	85.8	73.5	81.2
	% of Total	43.6	37.5	17.3	41.9	22	81.2
Total	N	197	195	84	191	117	392
	% of Total	50.3	49.7	21.4	48.7	29.8	100.0
Religious social activity							
No	N	34	145	52	70	57	179
	% within group	17.3	74.4	61.2	36.6	49.1	45.7
	% of Total	8.7	37.0	13.3	17.9	14.5	45.7
Yes (a few times or quite often)	N	163	50	33	121	59	213
	% within group	82.7	25.7	38.9	63.4	50.9	54.4
	% of Total	41.6	12.8	8.4	30.8	15	54.4
Total	N	197	195	85	191	116	392
	% of Total	50.3	49.7	21.7	48.7	29.6	100.0
Personal social activity							
No	N	56	72	19	66	43	128
	% within group	28.6	36.7	22.4	34.6	37.1	32.7
	% of Total	14.3	18.4	4.8	16.8	11.0	32.7
Yes (a few times or quite often)	N	140	124	66	125	73	264
	% within group	71.4	63.2	77.6	65.4	62.9	67.4
	% of Total	35.7	31.7	16.8	31.8	18.6	67.4
Total	N	196	196	85	191	116	392
	% of Total	50.0	50.0	21.7	48.7	29.6	100.0
Community social activity							
No	N	130	162	61	143	88	292
	% within group	66.7	82.7	72.6	75.3	75.2	74.7
	% of Total	33.2	41.4	15.6	36.6	22.5	74.7
Yes (a few times or quite often)	N	65	34	23	47	29	99
	% within group	33.4	17.4	27.4	24.7	24.8	25.3
	% of Total	16.7	8.7	5.9	12.1	7.4	25.3
Total	N	195	196	84	190	117	391
	% of Total	49.9	50.1	21.5	48.6	29.9	100.0

The gender differences in social activities in the community and with friends were small, but significant ($p < .01$ for both variables), where more men engaged in these activities (24.6% women did not engage in social activity with friends compared to 13.2% men). Community engagement in general was low, with 82.7

per cent women not engaging in any community activity compared with 66.7 per cent men (Table 5.21).

Within the island clusters, the proportion engaging in social activities with family and with friends was lower in the sparse population cluster compared to the other two island clusters (see Table 5.21). There were no significant differences in engagement in family social activity or community social activities among people residing in different island clusters.

There were significant differences, however, in social activities with friends ($p < .05$), personal social activities ($P < .01$) and religious social activities ($p < .01$) between the island clusters. Engagement in social activities with friends was lowest in the sparse population cluster with 26.5 per cent not engaging in social activity with friends, compared to 14.1 per cent in the moderate population cluster, and 19.0 per cent in the dense population cluster. Similarly, more people in the sparse population cluster did not engage in personal social activity (37.1%) compared with 34.1 per cent in the moderate population cluster, and 22.4 per cent in the dense population cluster. Engagement in religious social activities was least in the dense population cluster while engagement in personal social activities was highest in the dense population cluster.

(f) Social support: Social support from family was prevalent, with 95.2 per cent of the participants receiving this type of support (see Table 5.22). About a quarter of the participants also received social support from friends (27.6%) and a smaller proportion (11.2%) received support from a paid carer as well.

Table 5.22: Sources of social support by gender and island cluster (N=392)

Sources of social support	Family			Friends			Paid carer			No support		
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total
Gender												
Male	186	94.4	47.4	45	22.8	11.5	12	6.1	3.1	8	4.1	2.0
Female	187	95.9	47.7	63	32.3	16.1	32	16.4	8.2	3	1.5	0.8
Total	373	95.2	95.2	108	27.6	27.6	44	11.2	11.2	11	2.8	2.8
Island cluster (population)												
Dense	77	90.6	19.6	44	51.8	11.2	31	36.5	7.9	3	3.5	0.8
Moderate	183	96.3	46.7	28	14.7	7.1	9	4.7	2.3	6	3.2	1.5
Sparse	113	96.6	28.8	36	30.8	9.2	4	3.4	1.0	2	1.7	0.5
Total	373	95.2	95.2	108	27.6	27.6	44	11.2	11.2	11	2.8	2.8

There was no significant gender difference among the participants receiving support from family but the difference was significant in terms of support from

friends ($p<.05$), with more women than men receiving support from friends (32.3% women compared with 22.8% men). Similarly, significantly more women than men ($p<.01$) received support from a paid carer (16.4% women compared with 6.1% men).

Although the differences by island cluster are not significant, the proportion of the participants receiving social support from family in the dense population cluster was 90.6 per cent compared with 96.3 per cent in the moderate and 96.6 per cent in the sparse population clusters (Table 5.22). However, a significantly higher proportion of older people from the dense population cluster (51.8%) received support from a friend ($p<.01$) compared with 14.7 per cent in the moderate and 30.8 per cent in the sparse population clusters. Similarly, significant differences ($p<.01$) are observed among the older people receiving social support from a paid carer in the island clusters, with 36.5 per cent receiving support from a paid carer in the dense population cluster (compared with 4.7% in the moderate and 3.4% in the sparse clusters).

More than half of the respondents (59.8%) reported that their social support was reciprocal ('receive support as much as they give'), 23.3 per cent reported they 'gave support to others more than they received', while 16.9 per cent felt that they 'received more support than they gave others' (see Table 5.23).

Table 5.23: Reciprocity of social support by gender and island cluster (N=391)

Reciprocity of support	Receive more support			Give more support			Receive support as much as given			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	30	15.3	7.7	50	25.5	12.8	116	59.2	29.7	196	50.1
Female	36	18.5	9.2	41	21.0	10.5	118	60.5	30.2	195	49.9
Total	66	16.9	16.9	91	23.3	23.3	234	59.8	59.8	391	100.0
Island cluster (population)											
Dense	14	16.9	3.6	22	26.5	5.6	47	56.6	12.0	83	21.2
Moderate	31	16.2	7.9	37	19.4	9.5	123	64.4	31.5	191	48.8
Sparse	21	17.9	5.4	32	27.4	8.2	64	54.7	16.4	117	29.9
Total	66	16.9	16.9	91	23.3	23.3	234	59.8	59.8	391	100.0

There were no significant differences by gender and island cluster among those participants who reported reciprocity of support. Yet, there were more men who felt that they gave more than they received (25.5% of men compared to 21.0% of women), and more women who felt that they received more than they gave (18.5% compared to 15.3% men). Most of the respondents living in the moderate

population cluster reported reciprocity of support (66.4%) compared with 56.6 per cent in the dense population cluster and 54.7 per cent in the sparse population cluster (see Table 5.23).

5.3.3 Economic status

The indicators for economic standard of living were the subjective measure ‘satisfaction with the economic standard of living’, and the objective measure ‘self-reported adequacy of money on a four week recall period’. Both measures were based on single item questions described in Chapter 4.

5.3.3.1 Satisfaction with economic status

The majority of the respondents (58.2%) were ‘satisfied’ with their economic status (see Table 5.24), with 29.5 per cent being ‘neither satisfied nor dissatisfied’ and 12.3 per cent ‘dissatisfied’. On the scale of 1-3 the mean value for satisfaction with economic status was 2.46 (Std. Error = .036) for the sample (N=390).

Table 5.24: Satisfaction with economic status by gender and island cluster (N=390)

Satisfaction with economic status	Dissatisfied			Neither satisfied nor dissatisfied			Satisfied			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	29	14.9	7.4	62	31.8	15.9	104	53.3	26.7	195	50.0
Female	19	9.7	4.9	53	27.2	13.6	123	63.1	31.5	195	50.0
Total	48	12.3	12.3	115	29.5	29.5	227	58.2	58.2	390	100.0
Island cluster (population)											
Dense	9	10.8	2.3	29	34.9	7.4	45	54.2	11.5	83	21.3
Moderate	20	10.5	5.1	43	22.6	11.0	127	66.8	32.6	190	48.7
Sparse	19	16.2	4.9	43	36.8	11.0	55	47.0	14.1	117	30.0
Total	48	12.3	12.3	115	29.5	29.5	227	58.2	58.2	390	100.0

While the gender difference in satisfaction with economic status was not significant among those who were ‘satisfied’ with their economic status, the proportion of women was higher (31.5%) than men (26.7%). Nevertheless, a significant difference was observed (chi square=13.245, df=4, p=.010) when the satisfaction with economic status was compared among the island clusters. The highest satisfaction was found among those in the moderate population cluster (66.8%), followed by dense population cluster (54.2%) and lowest (47.0%) in the sparse population cluster (see Table 5.24).

5.3.3.2 Level of economic status

With regard to the level of economic status, the majority of the participants (53.2%) had a ‘good’ economic status, 25.3 per cent ‘moderate’ and 21.5 per cent

‘poor’ (see Table 5.25). The mean value for the level of economic status on the scale for 1-3 was 2.32 (Std. Error = .041) for the sample (N=391). Although there are no significant gender differences, a slightly greater proportion of women reported a ‘moderate’ economic status (26.5%) than men (23.9%).

Table 5.25: Economic standard of living by gender and island cluster (N=391)

Level of economic standard	Poor			Moderate			Good			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	44	22.3	18.4	47	23.9	21.7	105	53.3	44.0	196	50.1
Female	40	20.4	3.1	52	26.5	3.6	103	52.6	9.2	195	49.9
Total	84	21.5	21.5	99	25.3	25.3	208	53.2	53.2	391	100.0
Island cluster (population)											
Dense	7	8.2	1.8	18	21.2	4.6	58	68.2	14.8	83	21.2
Moderate	48	25.1	12.3	38	19.9	9.7	105	55.0	26.9	191	48.8
Sparse	29	24.8	7.4	43	36.8	11.0	45	38.5	11.5	117	29.9
Total	84	21.5	21.5	99	25.3	25.3	208	53.2	53.2	391	100.0

Although a larger proportion of the participants (68.2%) from the dense population cluster had a ‘good’ economic status compared with the other two island clusters (55.0% in the moderate population cluster and 38.5% in the sparse population cluster), the results are inadequate to ascertain if these differences are statistically significant (see Chapter 6 for chi-square test results).

5.3.4. Access to goods and services

The indicators for access to goods and services are the subjective measure ‘satisfaction with overall access to goods and services’, and the objective measure ‘level of access to goods and services’. For the subjective indicator, a single item question was used while the objective indicator was computed from a multi-item measure (see Chapter 4 for a description of indicators and item scales).

5.3.4.1 Satisfaction with access to goods and services

A large proportion of the respondents (45.9%) were ‘neither satisfied nor dissatisfied’ with their overall access to goods and services, while 40.1 per cent were ‘satisfied’, and 14.0 per cent were ‘dissatisfied’ (see Table 5.26). On the scale of 1 to 3, the mean value for satisfaction with access to goods and services was 2.26 (Std. Error = .035) for the sample (N=392). While the gender difference in satisfaction with conformity to social values and norms was not significant, more women than men were ‘satisfied’ with their overall access to goods and services (22.4% women compared to 17.6%). However, significant statistical

differences were observed in satisfaction with overall access to goods and services by the island cluster (chi-square= 31.136, df=4, p=.000). A larger proportion of respondents within the dense population cluster were ‘satisfied’ with their overall access (56.5%), followed by the moderate population cluster (44.2%) with the fewest in the sparse population cluster (21.4%).

Table 5.26: Satisfaction with access to goods and services by gender and island cluster (N=392)

Satisfaction with access to goods and services	Dissatisfied			Neither satisfied nor dissatisfied			Satisfied			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	29	14.8	7.4	98	50.0	25.0	69	35.2	17.6	196	50.0
Female	26	13.3	6.6	82	41.8	20.9	88	44.9	22.4	196	50.0
Total	55	14.0	14.0	180	45.9	45.9	157	40.1	40.1	392	100.0
Island cluster (population)											
Dense	13	15.3	3.3	24	28.2	6.1	48	56.5	12.2	85	21.7
Moderate	20	10.5	5.1	86	45.3	21.9	84	44.2	21.4	190	48.5
Sparse	22	18.8	5.6	70	59.8	17.9	25	21.4	6.4	117	29.8
Total	55	14.0	14.0	180	45.9	45.9	157	40.1	40.1	392	100.0

5.3.4.2 Level of access to goods and services

In regard to the level of access to goods and services, there were no respondents who had ‘poor’ access to goods and services (Table 5.27). The majority of the respondents (64.1%) had ‘moderate’ access to goods and services and 35.9 per cent had ‘good’ access to goods and services. The mean value for the level of access to goods and services was 2.36 (Std. Error = .024) for the sample (N=393).

Table 5.27: Level of access to goods and services by gender and island cluster (N=393)

Level of access to goods and services	Moderate			Good			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender								
Male	125	63.5	31.8	72	36.5	18.3	197	50.1
Female	127	64.8	32.3	69	35.2	17.6	196	49.9
Total	252	64.1	64.1	141	35.9	35.9	393	100.0
Island cluster (population)								
Dense	13	15.3	3.3	72	84.7	18.3	85	21.6
Moderate	132	69.1	33.6	59	30.9	15.0	191	48.6
Sparse	107	91.5	27.2	10	8.5	2.5	117	29.8
Total	252	64.1	64.1	141	35.9	35.9	393	100.0

The gender differences in the level of access to goods and services were not significant. However, across the island clusters, significant differences were observed (chi square=128.144, df=2, p=.000). Among those who reported ‘good’ levels of access to goods and services, the dense population cluster had the highest proportion (18.3%), and the sparse population cluster had the lowest (2.5%).

The two components that constitute the indicator for the level of access were (a) the affordability and (b) the utilisation of basic goods and services. Described below are the results on the level of affordability and utilisation of basic goods and services.

(a) Affordability: Participants were asked, “Have there been times in the past 4 weeks when you found it difficult to have the following things because you could not afford them?” with the answer options of ‘yes’, ‘sometimes’ and ‘not at all’. The results are shown in Table 5.28. All the participants were able to afford essential food (100%), clothing and hygiene items (98%) and housing (99%). Affordability of health care services (94.6%) and household items was slightly lower (89.3%).

Table 5.28: Affordability of basic consumer goods

Affordability	Yes, Difficult		Sometimes		No difficulty		Total	
	N	% of total	N	% of total	N	% of total	N	% of total
Food items	0	0.0	0	0.0	392	100.0	392	100
Clothing and hygiene items	1	0.3	7	1.8	383	98.0	391	100
Household items	5	1.3	37	9.5	349	89.3	391	100
Housing	0	0.0	4	1.0	388	99.0	392	100
Health care items	1	0.3	20	5.1	371	94.6	392	100

There was no significant gender difference in affordability of goods yet the difference in the affordability of housing was slightly higher for men (50.3%) than women (48.7%) (Table 5.29). There were also no significant differences according to island cluster, but those residing in the dense population cluster had lower affordability of housing (96.4%), compared with the moderate population and sparse population clusters (99.5% and 100% respectively).

Table 5.29: Respondents able to afford basic goods without difficulty by gender and island cluster

Basic goods	Able to afford without difficulty	Gender		Island cluster (population)			Total (able to afford)
		Male	Female	Dense	Moderate	Sparse	
Food items	N	197	195	84	191	117	392
	% within group	100	100	100	100	100.0	100
	% of Total	50.3	49.7	21.4	48.7	29.8	100
Personal items	N	192	191	84	184	115	383
	% within	98.0	97.9	100	96.8	98.3	98.0
	% of Total	49.1	48.8	21.5	47.1	29.4	98.0
Household items	N	173	176	73	173	103	349
	% within group	88.3	90.3	86.9	91.1	88.0	89.3
	% of Total	44.2	45.0	18.7	44.2	26.3	89.3
Housing	N	197	191	81	190	117	388
	% within group	100	97.9	96.4	99.5	100.0	99.0
	% of Total	50.3	48.7	20.7	48.5	29.8	99.0
Health care items	N	184	187	82	182	107	371
	% within group	93.4	95.9	97.6	95.3	91.5	94.6
	% of Total	46.9	47.7	20.9	46.4	27.3	94.6

(b) Utilisation: Participants were asked about utilisation of healthcare services, telephone, internet, land transport and sea transport with the question, “In the past four weeks did you do any of the following...?” with the answer options of ‘a lot’, ‘some’ and ‘not at all’.

Table 5.30: Utilisation of basic services

Utilisation of services	Not at all		Some		A lot		Total	
	N	% of total	N	% of total	N	% of total	N	% of total
Health care	108	27.6	197	50.4	86	22.0	391	100
Telephone	19	4.9	202	51.6	170	43.5	391	100
Internet	344	88.7	36	9.3	8	2.1	388	100
Land transport	175	44.8	141	36.1	75	19.2	391	100
Sea transport	252	64.3	112	28.6	28	7.1	392	100

Use of health care services was high (72.4%), with half of the participants (50.4%) using ‘some’ health care and another 22 per cent using the services ‘a lot’ (see Table 5.30). While most of the participants (95.1%) used the telephone, with 43.5 per cent using it ‘a lot’ and 51.6 per cent using it ‘some’, internet use was low (11.4% used internet ‘a lot’ or ‘some’). The majority of the participants (64.3%) did not use sea transport while 36.1 per cent used it ‘some’ and only 7.1 per cent used it ‘a lot’. Slightly more than half of the participants (55.3%) used land transport ‘some’ or ‘a lot’ while 44.8 per cent did not use land transport.

Table 5.31: Access to health care by gender and island cluster (N=391)

Accessing health care	Not at all			Some			A lot			Total	
	N	% within group	% of total	N	% within group	% of total	N	% within group	% of total	N	% of total
Gender											
Male	65	33.3	16.6	94	48.2	24.0	36	18.5	9.2	195	49.9
Female	43	21.9	11.0	103	52.6	26.3	50	25.5	12.8	196	50.1
Total	108	27.6	27.6	197	50.4	50.4	86	22.0	22.0	391	100.0
Island cluster (population)											
Dense	31	36.9	7.9	44	52.4	11.3	9	10.7	2.3	84	21.5
Moderate	52	27.2	13.3	98	51.3	25.1	41	21.5	10.5	191	48.8
Sparse	25	21.6	6.4	55	47.4	14.1	36	31.0	9.2	116	29.7
Total	108	27.6	27.6	197	50.4	50.4	86	22.0	22.0	391	100.0

Although statistically not significant, differences exist in the use of health care by gender and island cluster (see Table 5.31). Health care use was higher among women than men (78.1% of women using ‘some’ or ‘a lot’ compared to 66.7% of men). The participants living in the dense population cluster had lower utilisation of health care services (63.1% using ‘some’ or ‘a lot’) compared with those in the

moderate population and sparse population clusters (72.8% and 78.4% using ‘some’ or ‘a lot’ in the moderate and sparse population clusters respectively).

In the use of communication, there were no significant gender or island cluster differences (see Table 5.32). However, internet use was much higher in the dense population cluster, with 34.1 per cent reporting the use of internet ‘some’ or ‘a lot’ compared with 6.4 per cent in the moderate and 2.6 per cent in the sparse population clusters respectively. All participants (100%) in the dense population cluster used the telephone (‘some’ or ‘a lot’) compared to 96.3 per cent in the moderate and 89.7 per cent in the sparse population cluster.

Table 5.32: Access to communication services by gender and island cluster

Accessing communication services	Not at all			Some			A lot			Total	
	N	% within group	% of total	N	% within group	% of total	N	% within group	% of total	N	% of total
Telephone											
Gender											
Male	11	5.6	2.8	99	50.5	25.3	86	43.9	22.0	196	50.1
Female	8	4.1	2.0	103	52.8	26.3	84	43.1	21.5	195	49.9
Total	19	4.9	4.9	202	51.7	51.7	170	43.5	43.5	391	100.0
Island cluster (population)											
Dense	0	0.0	0.0	18	21.2	4.6	67	78.8	17.1	85	21.7
Moderate	7	3.7	1.8	94	49.5	24.0	89	46.8	22.8	190	48.6
Sparse	12	10.3	3.1	90	77.6	23.0	14	12.1	3.6	116	29.7
Total	19	4.9	4.9	202	51.7	51.7	170	43.5	43.5	391	100.0
Internet											
Gender											
Male	174	89.7	44.8	18	9.3	4.6	2	1.0	0.5	194	50.0
Female	170	87.6	43.8	18	9.3	4.6	6	3.1	1.5	194	50.0
Total	344	88.7	88.7	36	9.3	9.3	8	2.1	2.1	388	100.0
Island cluster (population)											
Dense	56	65.9	14.4	23	27.1	5.9	6	7.1	1.5	85	21.9
Moderate	176	93.6	45.4	10	5.3	2.6	2	1.1	0.5	188	48.5
Sparse	112	97.4	28.9	3	2.6	0.8	0.0	0.0	0.0	115	29.6
Total	344	88.7	88.7	36	9.3	9.3	8	2.1	2.1	388	100.0

Differences in the use of transport are observed with more men using sea and land transport services (see Table 5.33), although these were not statistically significant.

Among those who used sea transport, ‘some’ or ‘a lot’, 20.9 per cent are men compared to 14.8 per cent women. The gender difference in use of land transport was not significant (28.4% men used land transport ‘some’ or ‘a lot’ and 26.9% women).

There were no significant differences in the use of land or sea transport by island cluster, but a higher proportion of participants in the sparse population cluster (52.6%) use of sea transport ('some' or 'a lot'), compared with 37.6 per cent in the dense population cluster, and 24.6 per cent in the moderate population cluster (see Table 5.33). In the use of land transport, the dense population cluster participants had the highest use of land transport (96.5% use them 'some' or 'a lot'), followed by the moderate population cluster (53.7%), while the sparse population cluster participants used it least (27.6%).

Table 5.33: Access to transport by age group, gender and island cluster

Accessing transport	Not at all			Some			A lot			Total	
	N	% within group	% of total	N	% within group	% of total	N	% within group	% of total	N	% of total
Land transport											
Gender											
Male	85	43.4	21.7	70	35.7	17.9	41	20.9	10.5	196	50.1
Female	90	46.2	23.0	71	36.4	18.2	34	17.4	8.7	195	49.9
Total	175	44.8	44.8	141	36.1	36.1	75	19.2	19.2	391	100.0
Island cluster (population)											
Dense	3	3.5	0.8	44	51.8	11.3	38	44.7	9.7	85	21.7
Moderate	88	46.3	22.5	69	36.3	17.6	33	17.4	8.4	190	48.6
Sparse	84	72.4	21.5	28	24.1	7.2	4	3.4	1.0	116	29.7
Total	175	44.8	44.8	141	36.1	36.1	75	19.2	19.2	391	100.0
Sea transport											
Gender											
Male	114	58.2	29.1	63	32.1	16.0	19	9.7	4.8	196	50.0
Female	138	70.4	35.2	49	25.0	12.5	9	4.6	2.3	196	50.0
Total	252	64.3	64.3	112	28.6	28.6	28	7.1	7.1	392	100.0
Island cluster (population)											
Dense	53	62.4	13.5	22	25.9	5.6	10	11.8	2.6	85	21.7
Moderate	144	75.4	36.7	35	18.3	8.9	12	6.3	3.1	191	48.7
Sparse	55	47.4	14.0	55	47.4	14.0	6	5.2	1.5	116	29.6
Total	252	64.3	64.3	112	28.6	28.6	28	7.1	7.1	392	100.0

5.3.5 Conformity to social values and norms

The indicators for the life domain of conformity to social values and norms were the subjective measure 'satisfaction with conformity to social values and norms', and the objective measure 'level of conformity to social values and norms' (see Chapter 4 for the description of indicators and scales of measurement).

5.3.5.1 Satisfaction with the conformity to social values and norms:

Satisfaction with conformity to desired social values and norms was not high, with 40.4 per cent of the respondents being 'satisfied', and about a quarter (26.1%) being 'dissatisfied' and a third (33.5%) were 'neither satisfied nor

dissatisfied’ (Table 5.34). The mean value for satisfaction with the conformity to social values and norms on the scale of 1 to 3 was 2.14 (Std. Error = .040) for the sample (N=391).

Table 5.34: Satisfaction with conformity to social values and norms by gender and island cluster (N=391)

Satisfaction with social values and norms	Dissatisfied			Neither satisfied nor dissatisfied			Satisfied			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	54	27.7	13.8	63	32.3	16.1	78	40.0	19.9	195	49.9
Female	48	24.5	12.3	68	34.7	17.4	80	40.8	20.5	196	50.1
Total	102	26.1	26.1	131	33.5	33.5	158	40.4	40.4	391	100.0
Island cluster (population)											
Dense	37	44.6	9.5	27	32.5	6.9	19	22.9	4.9	83	21.2
Moderate	40	20.9	10.2	54	28.3	13.8	97	50.8	24.8	191	48.8
Sparse	25	21.4	6.4	50	42.7	12.8	42	35.9	10.7	117	29.9
Total	102	26.1	26.1	131	33.5	33.5	158	40.4	40.4	391	100.0

Although the results show a higher proportion of men than women were ‘dissatisfied’ with the conformity to social values and norms, the differences are not significant. However, the differences observed by the island clusters are significant (chi square=30.357, df=4, p=.000) with those ‘satisfied’ constituting the majority of the respondents (50.8%) in the moderate population cluster, followed by 35.9 per cent of the respondents in the sparse population cluster, and 22.9 per cent in the dense population cluster (see Table 5.34).

5.3.5.2 Level of conformity to social values and norms

Analysis of the level of conformity to social values and norms in their community (see Table 5.35) indicates that the majority of the respondents (57.7%) felt that it was ‘moderate’ and about one third (31.1%) felt it to be ‘good’. On the scale of 1 to 3 the mean value for the level of conformity to social values and norms was 2.20 (Std. Error = .031) for the sample (N=392). No significant gender difference existed in the level of conformity to social values and norms. Significant differences were, however, observed by island cluster (chi square=100.669, df=4, p=.000), with 46 per cent of the moderate population cluster stating that there was a ‘good’ level of conformity to social values and norms compared with 23.1 per cent within the sparse population cluster, and 8.3 per cent in the dense population cluster.

**Table 5.35: Level of conformity to social values and norms by gender and island cluster
(N=392)**

Level of conformity to social values and norms	Poor			Moderate			Good			Total	
	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Gender											
Male	23	11.7	5.9	110	56.1	28.1	63	32.1	16.1	196	50.0
Female	21	10.7	5.4	116	59.2	29.6	59	30.1	15.1	196	50.0
Total	44	11.2	11.2	226	57.7	57.7	122	31.1	31.1	392	100.0
Island cluster (population)											
Dense	31	36.9	7.9	46	54.8	11.7	7	8.3	1.8	84	21.4
Moderate	9	4.7	2.3	94	49.2	24.0	88	46.1	22.4	191	48.7
Sparse	4	3.4	1.0	86	73.5	21.9	27	23.1	6.9	117	29.8
Total	44	11.2	11.2	226	57.7	57.7	122	31.1	31.1	392	100.0

The items of social values and norms used in the objective indicator included three items belonging to: (a) the harmony value types, namely safety, trust, altruism, and two items belonging to: (b) embeddedness value types, namely respect for elders and the tradition of care for elders.

(a) Harmony values: Safety was measured by the question, “Is it safe to walk around on the streets (of the island)?” with the answer options ‘mostly safe’, ‘sometimes’ and ‘not at all safe’. Trust was measured with the question, “Did you observe that people have to be very careful in dealing with others (on the island) or can you trust them?”, with the answer options ‘most people can be trusted’, ‘some can be and some can’t be’, and ‘have to be very careful’. Altruism was measured with the question “Did you observe that people in your island volunteer to help neighbours and others?” (see Chapter 4 for response options).

With regard to safety, more than half of the respondents felt that there was a high level of safety, with 51.0 per cent reporting that it was safe ‘most of the times’ and another 30.6 per cent felt it was moderate, reporting that it was ‘sometimes safe and sometimes not’ (see Table 5.36). Similarly, close to half of the respondents felt that trust was high, with 45.7 per cent responding that ‘most can be trusted’ and 38.8 per cent feeling that it was moderate (responding that ‘some can and some can’t be’). Only 15.6 per cent felt that the level of trust in the community was low (responding that they ‘have to be very careful’). Altruism was moderate with 44.5 per cent responding ‘some do and some don’t’ (volunteer), while 36.7 per cent felt that altruism was high (responding ‘most do’).

Table 5.36: Harmony values of the community by gender and island cluster

Harmony values	% withi n % of Total group			% withi n % of Total group			% withi n % of Total group			% of Total	
	N			N			N			N	
Safety	Not at all safe			Some times			Mostly safe			Total	
Gender											
Male	30	15.3	7.7	61	31.1	15.5	105	53.6	26.8	196	50.0
Female	42	21.4	10.7	59	30.1	15.1	95	48.5	24.2	196	50.0
Total	72	18.4	18.4	120	30.6	30.6	200	51.0	51.0	392	100.0
Island cluster (population)											
Dense	49	58.3	12.5	24	28.6	6.1	11	13.1	2.8	84	21.4
Moderate	16	8.4	4.1	56	29.3	14.3	119	62.3	30.4	191	48.7
Sparse	7	6.0	1.8	40	34.2	10.2	70	59.8	17.8	117	29.8
Total	72	18.4	18.4	120	30.6	30.6	200	51.0	51.0	392	100.0
Trust	Most can't be			Some can be, some can't be			Most can be			Total	
Gender											
Male	30	15.3	7.7	76	38.8	19.4	90	45.9	23.0	196	50.0
Female	31	15.8	7.9	76	38.8	19.4	89	45.4	22.7	196	50.0
Total	61	15.6	15.6	152	38.8	38.8	179	45.7	45.7	392	100.0
Island cluster (population)											
Dense	34	40.5	8.7	25	29.8	6.4	25	29.8	6.4	84	21.4
Moderate	15	7.9	3.8	54	28.3	13.8	122	63.9	31.1	191	48.7
Sparse	12	10.3	3.1	73	62.4	18.6	32	27.4	8.2	117	29.8
Total	61	15.6	15.6	152	38.8	38.8	179	45.7	45.7	392	100.0
Altruism	Most don't			Some do, some don't			Most do			Total	
Gender											
Male	39	19.9	10.0	93	47.4	23.7	64	32.7	16.3	196	50.0
Female	35	17.9	8.9	81	41.3	20.7	80	40.8	20.4	196	50.0
Total	74	18.9	18.9	174	44.4	44.4	144	36.7	36.7	392	100.0
Island cluster population											
Dense	28	33.3	7.1	34	40.5	8.7	22	26.2	5.6	84	21.4
Moderate	28	14.7	7.1	68	35.6	17.3	95	49.7	24.2	191	48.7
Sparse	18	15.4	4.7	72	61.5	18.4	27	23.1	6.9	117	29.8
Total	74	18.9	18.9	174	44.4	44.4	144	36.7	36.7	392	100.0

There was no significant gender difference with regard to the level of safety, trust and altruism. Yet, among those who felt that security was low, there were more women (10.7%) than men (7.7%).

Among the island clusters, there were significant differences ($p < .01$) with all three items of the harmony value dimension. Safety was lowest in the dense population cluster (see Table 5.36), where more than half the participants (58.3%) reported that it was 'not at all safe', while only 8.4 per cent and 6.0 per cent felt that it was 'not at all safe' in the moderate and sparse population clusters respectively.

With regard to trust, 40.5 per cent in the dense population cluster felt that they could not trust others ('have to be very careful'), compared with 7.9 per cent and

10.3 per cent in the moderate and sparse population clusters (Table 5.36). About a third in the dense population cluster felt that altruism was low with 33.3 per cent responding that ‘most don’t’ volunteer to help others while 14.7 per cent of the people in the moderate population cluster, and 15.4 per cent of the people in the dense population cluster.

(b) Embeddedness values: The question “Did you observe that people (on the island) respect elders?” was used as a measure of the respect for elders. The tradition of care for elders was measured by the question, “Did you observe that people (on the island) look after their elderly parents and relatives?” The questions had the answer options ‘most people do’, ‘some people do and some don’t’ and ‘most people don’t’. The results are shown in Table 5.37.

With regard to respect for elders (Table 5.37), 40.3 per cent felt that respect for elders was moderate (responding ‘some do and some don’t’) while 30.9 per cent felt that it was high (responding ‘most do’) and 28.8 per cent felt that it was low (responding ‘most don’t’). Similarly, conformity measure showed that 45 per cent felt it was moderate (responding ‘some do and some don’t’, while 39.1 per cent felt that it was high (responding ‘most do’).

Table 5.37: Embeddedness values of the community by gender and island cluster

Table 3.5.7: Embeddedness values of the community by gender and island cluster											
Embeddedness values	N	% within group	% of Total	N	% within group	% of Total	N	% within group	% of Total	N	% of Total
Respect for elders	Most don't			Some do, some don't			Most do			Total	
Gender											
Male	59	30.1	15.1	72	36.7	18.4	65	33.2	16.6	196	50.0
Female	54	27.6	13.8	86	43.9	21.9	56	28.6	14.3	196	50.0
Total	113	28.8	28.9	158	40.3	40.3	121	30.9	30.9	392	100.0
Island cluster (population)											
Dense	44	52.4	11.2	29	34.5	7.4	11	13.1	2.8	84	21.4
Moderate	47	24.6	12.0	75	39.3	19.1	69	36.1	17.6	191	48.7
Sparse	22	18.8	5.6	54	46.2	13.8	41	35.0	10.5	117	29.8
Total	113	28.8	28.8	158	40.3	40.3	121	30.9	30.9	392	100.0
Tradition of care for elders	Most don't			Some do, some don't			Most do			Total	
Gender											
Male	29	14.8	7.4	88	44.9	22.5	79	40.3	20.2	196	50.1
Female	33	16.9	8.5	88	45.1	22.5	74	37.9	18.9	195	49.9
Total	62	15.9	15.9	176	45.0	45.0	153	39.1	39.1	391	100.0
Island cluster (population)											
Dense	30	35.7	7.7	34	40.5	8.7	20	23.8	5.1	84	21.5
Moderate	23	12.1	5.9	76	40.0	19.4	91	47.9	23.3	190	48.6
Sparse	9	7.7	2.3	66	56.4	16.9	42	35.9	10.7	117	29.9
Total	62	15.9	15.9	176	45.0	45.0	153	39.1	39.1	391	100.0

Although gender differences were observed in respect for elders and the tradition of care for elders, they were small and not statistically significant ($p>.05$). A higher proportion of men (30.1% compared to 27.6% women) felt that respect for elders was low (responding ‘most don’t’ respect elders), while more women (16.9% women compared with 14.8% men) felt that tradition of care for elders was low (responding ‘most don’t’ look after their elderly parents and relatives – see Table 5.37).

There were, however, significant differences ($p<.01$) in the embeddedness values between the island clusters. They were lowest in the dense population cluster for both value items of respect for elders and the tradition of care for elders. Among the island clusters, respect for elders was lowest in the dense population cluster with 52.4 per cent of the respondents reporting that ‘most don’t’ respect elders, while it was 24.6 per cent in the moderate population cluster, and 18.8 per cent in the sparse population clusters (see Table 5.37). The tradition of care for elders was also lowest in the dense population cluster with 35.7 per cent reporting that ‘most don’t’, while only 12.1 per cent and 7.7 per cent in the moderate and sparse population clusters felt similarly.

5.4 Summary

This review of the social and demographic characteristics of the sample indicates that it was largely representative of men and women aged 65+ in Maldives, and of the three different island clusters in the sample frame. It indicates that the majority of the older people were married (although the proportion was significantly higher for men), had children, and lived in an extended family context. The education level of this group was low and the majority were not engaged in paid employment, but were involved in supporting the work of household.

The findings show that the level of wellbeing of older people in Maldives was ‘moderate to high’, as indicated by the majority who reported being ‘satisfied with overall life’, and the average rating of wellbeing among the sample. The subjective indicators showed that the average rating of the satisfaction with the life domains of ‘health’, ‘social connectedness’ and ‘economic status’ was also moderate to high, and half or more respondents were satisfied with their situation. However, the average rating for satisfaction with the life domains ‘access to goods and services’ and ‘conformity to social values and norms’ was lower

(moderate), and less than half the participants were satisfied with the situation. While the majority of the respondents were satisfied with their overall social connectedness, the proportion was even higher for satisfaction with family and satisfaction with friends when examined separately as measures of social connectedness.

With regard to the objective measures, the levels attained over all five life domains were lower and can be regarded as moderate. The proportion of the respondents who had a 'good' level of health was higher compared with the respondents who felt it was 'moderate' or 'poor'. Similarly, a higher proportion of respondents had a 'good' level of economic standard of living than those who felt it was 'moderate' or 'poor'. For social connectedness, however, a higher proportion of respondents had a 'moderate' level of overall social connectedness than those who had 'good' or 'poor' levels of social connectedness. A higher proportion of respondents also had a 'moderate' level of access to goods and services and a 'moderate' level of conformity to social values and norms than those who had 'good' or 'poor' levels in these life domains.

Significant gender differences were observed only for the life domain of health (with both the subjective or objective indicators), indicating the effect of historical health status of women in Maldives. However, across the island clusters significant differences in subjective indicators were observed in all five life domains, reflecting how older people across the islands perceive the challenges to achieve the desired levels of functioning in the life domain. The differences in objective indicators across the islands were only significant for the life domains of health, access to goods and services, and conformity to social values and norms. This could be a reflection of the differences in inter-personal, socio-cultural and geo-spatial characteristics across the islands that influence the achievements in the life domains. These aspects are discussed further in Chapter 7.

With regard to social connectedness, more than half of the respondents, both men and women, had a large family network compared to the friend network. The majority of the respondents had frequent contact with family and friends 'daily' or 'weekly', and met 'in person' usually at home or on the street. More than half of the respondents engaged in social activities with their family and friends, while a smaller proportion engaged in informal and religious social activities. Only a

small proportion (about a quarter) engaged in community social activities. Family was the main source of social support, while a small proportion received social support from friends or a paid carer. The majority of the older people reciprocated support and although not significant, the proportion who gave more support than they received being higher than those who received more support than they gave.

The correlation and regression statistics on the association of the life domains with the wellbeing of older people are discussed in the next chapter.

CHAPTER 6: RELATIONSHIPS BETWEEN LIFE DOMAINS AND WELLBEING: THE STATISTICAL PERSPECTIVE

The wellbeing of older people was conceptualised in the SIDS context as being constituted through experiences and capabilities in five life domains. This chapter presents the correlation statistics and the results of the regression analyses of the subjective and objective measure of the life domains with wellbeing, using the data from the survey of 393 people aged 65+ years in Maldives. The results of these statistical analyses provide the basis to comment on the hypotheses outlined in Chapter 3. The results are analysed in a way that allows the identification of the life domains that have a cause-effect relationships with wellbeing and those that merely show a correlation. The results also provide a basis for the verification of the most important predictors, and for commentary on the extent to which the life domain measures have an impact on wellbeing. The correlation statistics of the variables that constitute social connectedness are also presented to establish the significance of the role of family in social connectedness and the wellbeing of older people. Finally, the chi-square tests of the co-variables, gender and geographic isolation of the islands, are presented, again to establish the significance of the hypotheses that relate to these aspects.

6.1 Correlations of the life domains with wellbeing

Pearson's correlation statistics were applied to test the statistical association of each of the independent variables (subjective and objective measures in each of the life domains) with the dependent variable (wellbeing).

The single item of overall satisfaction with life was used as the indicator of wellbeing. Single item questions on satisfaction with each of the five life domains (health, social connectedness, economic status, access to goods and services, and social values and norms) were used as subjective measures. The objective measures of life domains were derived from single items for the domains of health and economic standard of living. For the life domains of social connectedness, access to goods and services, and conformity to social values and norms, the

indicators of the objective levels of life domains were computed from multi-item scales (as outlined in Chapter 4).

6.1.1 Significance and direction of the correlations

The Pearson's correlation statistics show that there were positive correlations between wellbeing and the subjective levels in each of the five life domains (see Table 6.1), and these were highly significant ($p < 0.01$, 2-tailed).

Table 6.1: Pearson's correlation^a statistics for subjective measures of the five life domains and wellbeing

		Wellbeing (Overall satisfaction with life)	Satisfaction with health	Satisfaction with overall social connectedness	Satisfaction with economic status	Satisfaction with access to goods and services	Satisfaction with conformity to social values and norms
Wellbeing (Overall satisfaction with life)	Pearson Correlation	1	.594**	.547**	.322**	.268**	.287**
	Sig. (2-tailed)		.000	.000	.000	.000	.000

a. Listwise N=383. **. correlation is significant at the 0.01 level (2-tailed).

The objective measures in the five life domains also correlated positively with wellbeing (see Table 6.2). The correlations between wellbeing and the levels of health, overall social connectedness, access to goods and services, and conformity to social values and norms were all positive and highly significant ($p < 0.01$, 2-tailed). However, the correlation between the objective level of economic status and wellbeing was not significant ($p = .180$).

Table 6.2: Pearson's correlation^a statistics for objective measures of the five life domains and wellbeing

		Wellbeing (Overall satisfaction with life)	Level of health	Level of social connectedness	Levels of economic status	Level of access to goods and services	Level of conformity to social values and norms
Wellbeing (Overall satisfaction with life)	Pearson Correlation	1	.417**	.345**	.068	.144*	.211**
	Sig. (2-tailed)		.000	.000	.180	.004	.000

a. Listwise N=390.

** correlation is significant at the 0.01 level (2-tailed). *correlation is significant at the 0.05 level (2-tailed).

The results of the correlation statistics support Hypothesis 1.1, that 'satisfaction' (subjective measures) in each life domain have a positive correlation with wellbeing. These results partly support Hypothesis 1.2 that objective levels in each of the five life domains are positively correlated with wellbeing, but the result for one life domain, economic status, is not statistically significant.

Thus, these results support the overall Hypothesis 1, that the five domains have a positive correlation with the wellbeing of older people in Maldives, but the size of correlation is dependent on the measure used.

6.1.2 Size of the correlations

The effect size (size of the association) is large⁶ for satisfaction with health ($r = .594$, $p < 0.01$) and satisfaction with social connectedness ($r = .547$, $p < 0.01$). The size of the association between wellbeing and ‘satisfaction with economic status’ ($r = .322$, $p < 0.01$), ‘satisfaction with access to goods and services’ ($r = .268$, $p < 0.01$) and ‘satisfaction with conformity to social values and norms’ ($r = .287$, $p < 0.01$) are medium (Cohen, 1988). The coefficient of determination for ‘satisfaction with health’ and wellbeing indicates that 35 per cent ($r^2 = 0.35$) of the variance between wellbeing and ‘satisfaction in health’ is shared, while 29 per cent ($r^2 = 0.29$) of the variance is shared between wellbeing and ‘satisfaction with overall social connectedness’, indicating the size of variance produced in wellbeing by these two life domains is large (see Table 6.1). The variance shared by ‘satisfaction with economic status’ ($r^2 = 0.10$), with wellbeing is medium (10%), while the variance shared by ‘satisfaction with conformity to social values and norms’ ($r^2 = 0.08$) and ‘satisfaction with access to goods and services’ ($r^2 = 0.07$) with wellbeing is small, (Cohen, Cohen, West, & Aiken, 2003; Field, 2013). Thus, the cumulative contribution of all five life domains using subjective measures accounts for 89 per cent of the variance with wellbeing, and can be described as significantly large.

For the objective measures (see Table 6.2), the size of this correlation is medium for the ‘level of health’ ($r = .417$, $p = 0.000$) and highly significant (p -value, Sig. (2-tailed) is 0.000). The coefficient of determination, $r^2 = 0.17$, indicates that the size of the variance shared with wellbeing (r^2) is also medium (17% of the variance between wellbeing and the objective ‘level of health’ is shared). Similarly, the correlation is highly significant for the ‘level of overall social connectedness’ ($r = .345$, $p = 0.000$) and the size of the association (r^2) with wellbeing is medium (12% shared variance with wellbeing). The correlations with the ‘level of access to goods and services’ ($r = .144$, $p < 0.05$) and the ‘level of conformity to social

⁶ In interpreting the effect size it is presumed that when $r = .1$ is small, $r = .3$ is medium and $r = .5$ is large (Cohen, 1988). When the size of variance is interpreted, $r^2 = 0.01$ is small, $r^2 = 0.09$ medium, and $r^2 = .25$ large (Cohen et al., 2003).

values and norms' ($r = .211$, $p = 0.000$) are also significant but small, with 4 per cent of the variance shared by the objective 'level of conformity to social values and norms', and 2 per cent by the objective 'level of access to goods and services' with wellbeing. As noted earlier, the correlations for the 'level of economic status' was not significant. Thus, the cumulative contribution from objective levels attained in the four life domains with wellbeing is 35 per cent, and can be described as medium.

These results support Hypothesis 2 for the Maldives sample, that the cumulative impact of the contributions from all five life domains on wellbeing will be large, with the results showing that the cumulative contributions from the subjective measures to wellbeing is 89 per cent. Furthermore, the results support Hypothesis 2.1 that the cumulative contributions to wellbeing from the subjective levels will be larger than that of the objective levels (89% compared with 35%). Although, the results support Hypothesis 2, it must be noted that the cumulative contribution of objective measures does not include 'level of economic status', as its correlation with wellbeing was statistically not significant.

6.2 Regression analysis

Multiple regression analysis was carried out to test the association and the predictability of wellbeing with the measures of the life domains. The analysis also allowed for determining the model fit to enable generalisation of the data to the population studied. As the data for each variable was on a scale of 1 to 3, , dummy variables were created on a scale of 0 to 1 for each variable (of the life domains) for the regression analysis (see Appendix H for data dictionary of the variables and the corresponding dummy variable).

6.2.1 Subjective measures of life domains as predictors of wellbeing

The analysis was conducted using the entry method in a linear regression model with SPSS 20 software. The analysis controlled for the effects of age, gender, and population size of the island cluster. Table 6.3 shows the descriptive statistics of the independent variables (subjective measures) and control variables (age, gender and island cluster population) used in the linear regression.

With 385 valid cases and 8 independent variables, the ratio for this analysis was 48.1 to 1, which is beyond the preferred ratio, thus satisfying the minimum

requirement and preferred ratio of 15 to 1 for regression analysis (Field, 2013). The assumption that errors in regression are independent is met as the Durbin-Watson value (see Table 6.4) is close to the value 2 (Field, 2013).

Table 6.3: Descriptive statistics of wellbeing and the variables (subjective measures) used in the linear regression (N=385)

Variables	Mean	Std. Deviation
Wellbeing	0.64	0.481
Respondent age	73.27	6.369
Sex	0.51	0.501
Island cluster population	0.49	0.501
Satisfaction with health	0.50	0.501
Satisfaction with social connectedness	0.62	0.485
Satisfaction with economic status	0.58	0.494
Satisfaction with conformity to social values and norms	0.41	0.492
Satisfaction with access to goods and services	0.40	0.491

The summary statistics (Table 6.4) show the cross validity of model 1 (the control variables) and model 2 (with the addition of the independent variables – subjective measures of the life domains). The adjusted R^2 for the model 2 is close to R^2 with a difference of 1.2 per cent ($0.101 - 0.094 = 0.007$). This indicates that the cross validity of the model is good and it can be generalised to the population with less than 7.0 per cent variance in the outcome (Field, 2013). The R^2 change statistics (model 2), indicates that the addition of the independent variables of the life domains increases the predictability of wellbeing by 33.6 per cent. The ‘Sig. F change statistics’ (Table 6.4) show that the model with the addition of the five predictors (subjective variables of the life domains) is significant ($p < .001$).

Table 6.4: Summary^c statistics for the model of wellbeing with five subjective variables of the life domains (model 2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.318 ^a	.101	.094	.458	.101	14.249	3	381	.000	1.922
2	.661 ^b	.437	.425	.365	.336	44.893	5	376	.000	

a. Predictors: (Constant), island cluster population, gender, respondent age

b. Predictors: (Constant), island cluster population, gender, respondent age, satisfaction with access to goods and services, satisfaction with health, satisfaction with social values and norms, satisfaction with economic status, satisfaction with social connectedness

c. Dependent Variable: wellbeing.

Hence, the null hypothesis that there is no improvement in the relationship between the set of independent variables and the dependent variable when the predictors are added (R^2 Change = 0) is rejected. That is, there is a statistically significant improvement in the relationship between the set of independent variables, and the dependent variable is supported. In addition, the null hypothesis that there is no relationship between the set of all independent variables and the dependent variable ($R^2 = 0$) is also rejected. That is, there is a statistically significant relationship between the set of all five independent variables in model 2 (subjective measures of the life domains) and the dependent variable (wellbeing) is supported.

Table 6.5 presents the statistics on the contribution of each independent variable (subjective measures of the life domains) to the dependent variable (wellbeing) when all other predictors are held constant (Field, 2013). The results show that the independent variables of the life domains, have a positive relationship with wellbeing. The coefficient value indicates the amount of increase in wellbeing that will be associated with one unit increase in the independent variable (satisfaction with the life domain).

Table 6.5: Level of the contribution of the five predictor variables (subjective measures) of the life domains to wellbeing (model 2)

Model 2	Unstandardised Coefficients ^a		t	Sig.
	B	Std. Error		
Constant	.714	0.231	3.088	.002
Satisfaction with health	0.355	0.040	8.792	.000
Satisfaction with social connectedness	0.322	0.043	7.454	.000
Satisfaction with economic status	0.111	0.044	2.528	.012
Satisfaction with conformity to social values and norms	0.002	0.043	.040	.968
Satisfaction with access to goods and services	0.077	0.041	1.888	.060

a. Dependent Variable: Wellbeing.

The results in Table 6.5 show that the biggest contribution to wellbeing is by 'satisfaction with health' (coefficient=0.355), followed by 'satisfaction with social connectedness' (coefficient=0.322) and both are significant at < 0.1 per cent (t-

test=8.792, df=376, p=.000 for ‘satisfaction with health’ and t-test=7.454, df=376, p=.000 for ‘satisfaction social connectedness’). The next highest contribution was from ‘satisfaction with economic status’, significant at <5 per cent (coefficient=.111, t-test=7.454, df=376, p=.012) and the contribution of ‘satisfaction with access to goods and services’ was significant at <10 per cent (coefficient =.077, t-test=1,888, df=376, p=.060). However, the contribution of ‘satisfaction with conformity to social values and norms’ was not significant.

6.2.2 Objective measures of life domains as predictors of wellbeing

The analysis was also conducted using the entry method in a linear regression model using SPSS 20 software. The analysis controlled for the effects of age, gender, and population size of the island cluster. Table 6.6 shows the descriptive statistics of the independent variables (objective measures) and control variables (age, gender, and island cluster population) used in the linear regression.

With 388 valid cases and 8 independent variables, the ratio for this analysis is 48.5 to 1, which again is beyond the preferred ratio, thereby satisfying the minimum requirement and preferred ratio of 15 to 1 for regression analysis (Field, 2013). Again, the assumption that errors in regression are independent is met as the Durbin-Watson value (Table 6.7) is close to the value 2 (Field, 2013).

Table 6.6: Descriptive statistics of wellbeing and the variables (objective measures) used in the linear regression (N=388)

Variables	Mean	Std. Deviation
Wellbeing	0.64	0.480
Respondent age	73.34	6.392
sex	0.50	0.501
Island cluster population	0.49	0.501
Health	0.42	0.495
Social connectedness	0.36	0.482
Economic status	0.53	0.500
Conformity to social values and norms	0.31	0.465
Access to goods and services	0.35	0.479

The summary statistics (Table 6.7) show the cross validity of the model 1 (the control variables) and model 2 (with the addition of the independent variables – objective measures of the life domains). The adjusted R^2 for the model 3 is very close to R^2 with a difference of 1.5 per cent (.257 – .242 = .015), indicating that the cross validity of the model is good and can be generalised to the population

with less than 1.5 per cent variance in the outcome (Field, 2013). The R^2 change statistics indicate that the addition of the independent variables in model 3, increases the predictability of wellbeing by 15.9 per cent when controlled for the variable in model 1 (age, gender, and island cluster population). The ‘Sig. F change statistics’ (Table 6.7) show that the model with the addition of the five predictors (subjective variables) is significant ($p < .001$).

Table 6.7: Summary^c statistics for the model of wellbeing with objective variables of the life domains (model 3)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.313 ^a	.098	.091	.458	.098	13.908	3	384	.000	
3	.507 ^b	.257	.242	.418	.159	16.246	5	379	.000	2.011

a. Predictors: (Constant), island cluster population, sex, respondent age

b. Predictors: (Constant), island cluster population, sex, respondent age, access to goods and services, health, conformity to social values and norms, economic status, social connectedness

c. Dependent Variable: wellbeing.

Hence, the null hypothesis (R^2 Change = 0) is rejected, that is the hypothesis that there is a statistically significant improvement in the relationship between the set of independent variables and the dependent variable is supported. In addition, the null hypothesis ($R^2 = 0$) is also rejected, that is, the hypothesis that there is a statistically significant relationship between the set of all five independent variables in model 3 (objective measures of the life domains) and the dependent variable (wellbeing) is supported.

Table 6.8 presents the contribution of each independent variable (objective measures of the life domains and the controlled variables) to the dependent variable (wellbeing) when all other predictors are held constant (Field, 2013). The results show that the independent variables of the life domains, have a positive relationship with wellbeing. The coefficient value indicates the amount of increase in wellbeing that will be associated with one unit increase in the independent variable (level attained in the life domain). The biggest positive contribution to wellbeing is by ‘health’ (coefficient=0.221), followed by ‘social connectedness’ (coefficient=0.201) and both are significant at <0.1 per cent level (test=4.674, df, 379, $p=.000$ for ‘health’ and t-test=3.996, df=379, $p=.000$ for ‘social connectedness’). The next is the contribution of ‘access to goods and services’ significant at <0.5 per cent (coefficient=0.143, t-test=2.994, df=379, $p=.003$). The contribution of ‘economic status’ significant at 5 per cent

(coefficient =0.093, $t(379)=1.983$, $p=.048$) and that of ‘conformity to social values and norms’ is significant at 10 per cent ($p=.106$).

Table 6.8: Level of the contribution of the five predictor variables (objective measures) of the life domains to wellbeing (model 3)

Model 3	Unstandardised Coefficients ^a		t	Sig.
	B	Std. Error		
(Constant)	0.920	.268	3.437	.001
Health	0.221	.047	4.674	.000
Social connectedness	0.201	.050	3.996	.000
Economic status	0.093	.047	1.983	.048
Conformity to social values and norms	0.080	.049	1.618	.106
Access to goods and services	0.143	.048	2.994	.003

a. Dependent Variable: Wellbeing.

The results of the regression analysis, thus, support Hypothesis 3, that for the Maldives sample, the set of five life domains will produce a significant improvement in the predictability of wellbeing from a base model of demographic characteristics (age, gender and island cluster). This is true for both the subjective measures and objective measures as R^2 and R change statistics were significant in both models (models 2 and 3 in regression analysis). Therefore, Hypothesis 3.1 that the set of subjective measures of the five life domains will produce a significant improvement in the predictability of wellbeing, is supported. Similarly, the results support Hypothesis 3.2, that the set of objective measures of the five life domains will produce a significant improvement in the predictability of wellbeing.

The results partly support Hypothesis 4, that each of the five life domains independent of other variables will have a significant association with the wellbeing of older people in Maldives. They indicate that at a significance level of 5 per cent, subjective measures in three life domains (health, social connectedness, and economic status) have a positive casual association in predicting wellbeing. At a significance level of 10 per cent access to goods and services is also a significant predictor, but subjective level of conformity to social values and norms is not statistically significant. When objective measures are used as predictors of wellbeing, at a significance level of 5 per cent, the life domains of

health, social connectedness, access to goods and services, and economic status have a positive association with wellbeing. At a significance level of 10 per cent conformity to social values and norms is also significant.

The results also support Hypothesis 5, that health is the most important predictor of the wellbeing of older people in Maldives. The coefficient values using subjective and objective measures (in models 2 and 3 of regression statistics) both confirmed that health is the most important predictor of wellbeing.

6.3 Social connectedness and wellbeing

The results demonstrate that social connectedness is one of the most important determinants of wellbeing, making a large contribution, alongside health. The coefficient values in models 2 and 3 of regression analysis (both subjective and objective measure) prove that social connectedness is the second most important predictor of wellbeing, after health.

Hypothesis 6, that social connectedness has a significantly large impact on the wellbeing of older people in Maldives, is also supported. Although not as large as the contributions by health, the size of the correlations and variance shared by social connectedness with wellbeing is also large. Results show that while an increase in the one unit of satisfaction with health increases wellbeing by 0.355 units, one unit increase in satisfaction with social connectedness increases wellbeing by 0.322 units. Similarly, an increase in one unit in the level of health increased wellbeing by 0.221 units, while wellbeing is increased by .201 units with one unit increase in the level of social connectedness.

Further correlation tests were carried out to examine the contribution of social connectedness with family and with friends to wellbeing, and to identify the statistical association of the factors that determine subjective levels of overall social connectedness. The correlation statistics (Table 6.9) show that ‘satisfaction with social connectedness with family’ has a significantly larger positive correlation with wellbeing ($r^2=.256$, $p=.000$), compared with that of the ‘satisfaction with social connectedness with friends’ and wellbeing ($r^2=.179$, $p=.000$). The satisfaction with the family’s social connectedness shares 26 per cent of the contribution (very close to the contribution by overall social connectedness that has a 29% shared contribution with wellbeing). Nonetheless,

satisfaction with friends' social connectedness also has a significantly large contribution, accounting for 17 per cent of shared contribution.

Table 6.9: Pearson's correlation^a statistics for wellbeing and overall social connectedness, social connectedness with family, and with friends

		Satisfaction with overall social connectedness	Satisfaction with social connectedness with family	Satisfaction with social connectedness with friends	Wellbeing (overall satisfaction with life)
Wellbeing (overall satisfaction with life)	Pearson Correlation	.538**	.506**	.417**	1
	Sig. (2-tailed)	.000	.000	.000	
	r ²	.289	.256	.174	

**. Correlation is significant at the 0.01 level (2-tailed). a. Listwise N=389.

The results, thus, support Hypothesis 6.1, that the contribution from social connectedness with family to wellbeing of older people in Maldives is larger than that from social connectedness with friends.

The Pearson's correlation statistics (Table 6.10) show that a number of social network variables that correlate significantly ($p < .01$) with subjective levels of overall social connectedness also have a significant correlation ($p < .01$) with wellbeing. The only exception is the type of contact with family members which is not significant ($p = .604$). However, the r^2 statistics (see Table 6.10) indicate that the size of the contribution by each variable to the 'satisfaction with overall social connectedness' and wellbeing is different. These results are now presented.

The variables that make the largest contribution to 'satisfaction with overall social connectedness' (subjective measure of social connectedness life domain) is the 'frequency of contact with family members', accounting for 13 per cent ($r^2 = .132$) of the contribution (see Table 6.10). Other variables that show significant correlation with the 'satisfaction with overall social connectedness' and have an effect size of 10 per cent or more are 'engagement in social activity with friends' ($r^2 = .105$), 'frequency of contact with friends' ($r^2 = .103$), 'number of family contacts' ($r^2 = .100$) and 'engagement in social activity with family' ($r^2 = .099$). The contribution of the 'type of contact', 'social support', 'engagement in social activity in the community', 'engagement in informal personal activity' and 'engagement in religious social activity' are each small, accounting for 3-4 per cent of the contribution to 'satisfaction with overall social connectedness'. The cumulative contributions from variables on 'family network' accounts for 40 per

cent of the shared variance with ‘satisfaction with overall social connectedness’, while variables on ‘friends network’ accounts for 31 per cent, and community and personal social engagement accounts for 10 per cent. The results, thus, support Hypothesis 6.2 that family network makes a larger contribution to the subjective level of overall social connectedness than friends.

Table 6.10: Pearson’s Correlations^a statistics for variables that determine subjective level of overall social connectedness and wellbeing

		Satisfaction with overall social connectedness	Wellbeing (measured by Overall satisfaction with life)
Social support family	Pearson Correlation	.191**	.195**
	Sig. (2-tailed)	.000	.000
	r ²	.036	.038
Family contacts number	Pearson Correlation	.317**	.240**
	Sig. (2-tailed)	.000	.000
	r ²	.100	.058
Friends contacts number	Pearson Correlation	.266**	.296**
	Sig. (2-tailed)	.000	.000
	r ²	.071	.088
Family contact frequency	Pearson Correlation	.363**	.377**
	Sig. (2-tailed)	.000	.000
	r ²	.132	.142
Friends contact frequency	Pearson Correlation	.321**	.299**
	Sig. (2-tailed)	.000	.000
	r ²	.103	.089
Family contact type	Pearson Correlation	.175**	.026
	Sig. (2-tailed)	.001	.604
	r ²	.031	.001
Friend contact type	Pearson Correlation	.209**	.102*
	Sig. (2-tailed)	.000	.045
	r ²	.044	.010
Engagement in religious social activity	Pearson Correlation	.195**	.279**
	Sig. (2-tailed)	.000	.000
	r ²	.038	.078
Engagement in informal social activity	Pearson Correlation	.179**	.285**
	Sig. (2-tailed)	.000	.000
	r ²	.032	.081
Engagement in social activity friends	Pearson Correlation	.324**	.371**
	Sig. (2-tailed)	.000	.000
	r ²	.105	.138
Engagement in social activity in the community	Pearson Correlation	.160**	.164**
	Sig. (2-tailed)	.002	.001
	r ²	.026	.027
Engagement in social activity with family	Pearson Correlation	.315**	.312**
	Sig. (2-tailed)	.000	.000
	r ²	.099	.097

**, Correlation is significant at the 0.01 level (2-tailed). *, Correlation is significant at the 0.05 level (2-tailed).

a. Listwise N=387.

In a similar way ‘frequency of contact with family’ has a 14 per cent shared contribution ($r^2=.142$) with wellbeing (Table 6.10). The contribution by the ‘number of family contacts’ to wellbeing is lower (6%, $r^2=.058$), compared with its contribution to ‘satisfaction with overall social connectedness (10%, $r^2=.100$),).

However, the contribution by the ‘number of friends contacts’ to wellbeing is higher than that for ‘satisfaction with overall social connectedness’ (9%, $r^2=.088$) with wellbeing compared with 7% ($r^2=.071$) for ‘satisfaction with overall social connectedness’. ‘Engagement in social activity with friends’ accounts for 14 per cent of shared contribution ($r^2=.137$) with wellbeing and ‘engagement with social activity with family accounts’ for 10 per cent of shared contribution ($r^2=.097$). The shared contribution of ‘engagement in religious social activities’ ($r^2=.078$), and ‘informal personal activities’ ($r^2=.081$) are higher with wellbeing than with ‘satisfaction with overall social connectedness’ ($r^2=.038$ for religious social activities and $r^2=.032$ to informal activities). The cumulative contributions from variables on family accounts for 34 per cent of the shared variance with wellbeing, while variables on 'friends' accounts for 33 per cent, and 'community and personal social engagement' accounts for 19 per cent.

6.4 Demographic and geo-spatial differences

Descriptive statistics show that there are differences in wellbeing and the subjective and objective measures of life domains related to demographic and geo-spatial factors (the descriptive statistics tables are provided in Chapter 5). The Chi-square test statistics for the two factors, gender and geographic isolation of the island clusters, are presented in this section.

The Pearson chi-square tests (Table 6.11) indicate that there is a significant difference in wellbeing by gender ($\chi^2= 9.681$, $df=2$, $p=.008$). Similarly, the difference is significant for geographic isolation of the island cluster ($\chi^2= 34.650$, $df=4$, $p=.000$). As noted in the descriptive statistics in Chapter 5, wellbeing is significantly higher when the subject is a male, and resides in the moderate population cluster of islands.

Table 6.11: Chi-square test statistics for wellbeing by gender and geographic isolation of the island cluster

Wellbeing by gender			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.681 ^a	2	.008
N of Valid Cases	391		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 17.46.			
Wellbeing and island cluster			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.650 ^a	4	.000
N of Valid Cases	391		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.52.

The results of Pearson chi-square tests for the gender difference in life domains (Table 6.12) indicate that, although there are differences in indicators of the life domains by gender, they are significant only for the life domain of health (for both subjective and objective indicators). As noted in Chapter 5, men had significantly higher levels of health and satisfaction with health compared with women. For the other life domains, the differences observed by gender are not significant.

Although the data indicate significance in the objective measure of social connectedness, the data is inadequate to ascertain the statistical significance (as a number of cells in the cross tabulations had one or more cells, with a less than expected count of fewer than 5).

Table 6.12: Chi-square test statistics for the differences in the life domains by gender

Life Domains	Measure	Pearson Chi square			
		Value	df	Asymp. Sig. (2-sided)	N of valid cases
Health	Subjective	6.201 ^a	2	.045	393
	Objective	11.496 ^a	2	.003	393
Social connectedness	Subjective	2.135 ^a	2	.344	391
	Objective	66.063 ^b	2	.000	393
Economic status	Subjective	4.378 ^a	2	.112	390
	Objective	.460 ^b	3	.928	393
Access to goods and services	Subjective	3.885 ^a	2	.143	392
	Objective	.077 ^a	1	.781	393
Social values and norms	Subjective	.567 ^a	2	.753	391
	Objective	0.381 ^a	2	.826	392

(a). 0 cells have expected count less than 5. (b). One or more cells have expected count less than 5.

The results, thus, support Hypothesis 7 that there are significant differences in the wellbeing of older men and women in Maldives. Hypothesis 7.1 is also supported in that men have a higher level of wellbeing than women. However, Hypothesis 7.2 is only partly supported, in that men had significantly higher levels only in the life domain of health and not in other life domains.

Differences in the subjective levels in the life domains by geographic isolation were, however, significant for all five life domains (see Table 6.13). The differences in objective levels attained in the three life domains, ‘health’, ‘access to goods and services’, and ‘conformity to social values and norms’ are also significant. The data are, however, inadequate to obtain a clear statistical significance for geographic isolation in the life domains of social connectedness and economic status (as a number of cells in the cross tabulations had one or more

cells with less than expected count fewer than 5. See Table 6.13). As was observed in the descriptive statistics, these differences do not follow similar relationships in the five life domains (see Chapter 4 for data tables).

Table 6.13: Chi-square test statistics for the differences in life domains by geographic isolation of the islands

Life Domains	Measure	Pearson Chi square			
		Value	df	Asymp. Sig. (2-sided)	N of valid cases
Health	Subjective	19.634 ^a	4	.001*	393
	Objective	16.296 ^a	4	.003*	393
Social connectedness	Subjective	14.449 ^a	4	.006*	391
	Objective	10.533 ^b	4	.032*	393
Economic status	Subjective	13.245 ^a	4	.010*	390
	Objective	33.429 ^b	6	.000*	393
Access to goods and services	Subjective	31.136 ^a	4	.000*	392
	Objective	128.144 ^a	2	.000*	393
Social values and norms	Subjective	30.357 ^a	4	.000*	391
	Objective	100.669 ^a	4	.000*	392

(a). 0 cells have expected count less than 5. (b). One or more cells have expected count less than 5.

* The relationship is significant at the 0.05 level.

As noted in Chapter 5, higher satisfaction with ‘health’, ‘social connectedness’, and ‘economic status’ were observed in the moderate population cluster of islands, followed by the dense population cluster, and lowest in the sparse population cluster. Although higher ‘satisfaction with conformity to social values and norms’ was also found in the moderate population cluster, the dense population cluster showed the lowest levels. In the life domain of access to goods and services, satisfaction was highest in the dense population cluster, followed by the moderate and sparse population clusters.

The objective levels in the three life domains, ‘health’, ‘economic status’ and ‘access to goods and services’, were highest in the dense population cluster, followed by the moderate population cluster and lowest in the sparse cluster. The levels of ‘social connectedness’ and ‘conformity to social values and norms’ were highest in the moderate population cluster. While the sparse population cluster had the second highest level in ‘conformity to social values and norms’ and lowest in the dense population cluster, the sparse and dense population cluster had similar levels in social connectedness.

Hypothesis 8, that geographic isolation of the islands in Maldives is negatively associated with wellbeing of older people is, therefore, not supported. The results also fail to support Hypothesis 8.1 for the Maldives sample, that the more isolated

the population, the lower the level of wellbeing of older people, as the results showed a higher level of wellbeing in the moderate population cluster which is more isolated than the dense population cluster.

The results only partly support Hypothesis 8.2, that the more isolated the population, the lower the subjective and objective levels in the five domains of wellbeing. This outcome was proved only for the life domain of ‘access to goods and services’ with subjective measures. The moderate population cluster, that is more isolated than the dense population cluster, had higher subjective levels in other life domains. With the objective measures, the hypothesis was supported for three life domains, ‘health’, ‘economic status’ and ‘access to goods and services’,

6.5 Summary of findings

The statistical analysis of the Maldives data showed that the life domains conceptualised for this research in a SIDS context have a positive correlation with the wellbeing of older people. The correlation of the subjective levels in the five life domains is highly significant ($p < .01$), as they are also for the objective levels in the life domains, except for economic status. The cumulative contribution of the five life domains is quite large, especially when measured subjectively, and accounts for 89 per cent of the variance shared with wellbeing. These findings partly support Hypothesis 1 and Hypothesis 2.

Among the subjective indicators, ‘satisfaction with health’ and ‘satisfaction with overall social connectedness’ have the largest correlation with wellbeing (as indicated by the r^2 values) compared with satisfaction in other life domains. Similarly, the objective indicators, ‘level of health’ and ‘level of social connectedness’ produce larger contributions to wellbeing (as indicated by the r^2 values) compared to the level in the other three domains. However, the cumulative contributions by the subjective measures is much larger than the objective measures. Figure 6.1 provides a graphic summary of correlations of the subjective and objective measures of the life domains of wellbeing. It also includes measures of statistical significance of gender and geographic isolation of the island clusters.

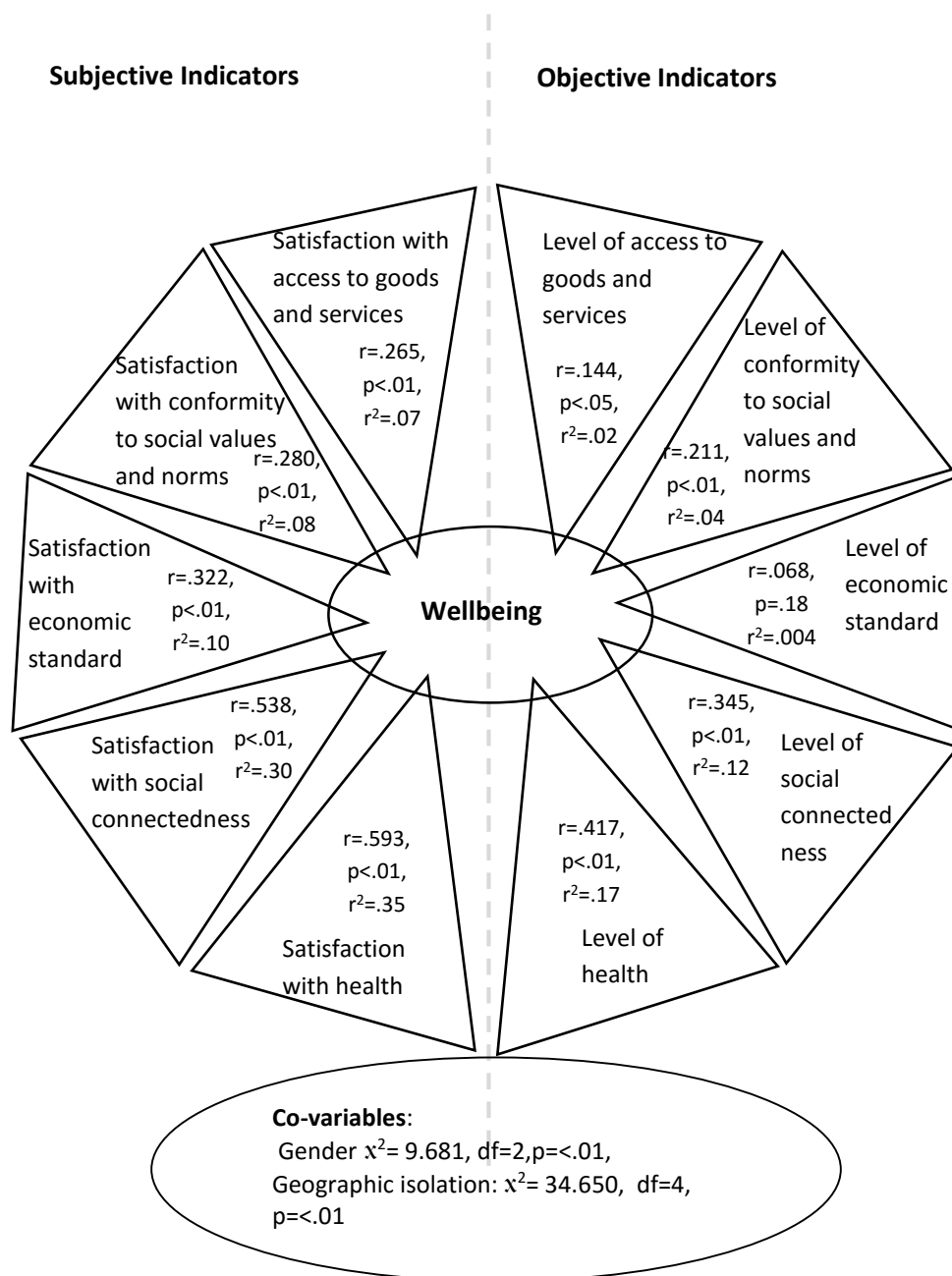


Figure 6.1: Correlations of the subjective and objective measures of the wellbeing of older people in Maldives and the statistical association of gender and geographic isolation of the islands with wellbeing

Multiple regression statistics show that the conceptual model of wellbeing using the set of five life domains is significant in predicting wellbeing and the model fits the population studied in Maldives. When the subjective measures are applied to the linear regression model, the association at a significance level of 5 per cent is observed only in the life domains of health, social connectedness, and economic status. However, when the objective measures are tested, four measures (the level

of conformity to social values and norms being the exception) are significant. These findings support Hypothesis 3 that the set of five life domains improve the predictability of wellbeing, and partly support Hypothesis 4 that all life domains have a significant relationship with wellbeing.

In both regression models (using subjective and objective measures) health emerged as the most important contributor to the wellbeing of older people in Maldives (indicated by *b* values), followed closely by social connectedness, thus providing support for Hypotheses 5 and 6. The correlation analysis provides further support for the premise that ‘satisfaction with social connectedness with family’ has a significantly larger contribution to wellbeing than that of ‘satisfaction with social connectedness with friends’. Furthermore, the contributions from family network factors accounts for a larger cumulative share of the ‘satisfaction with overall social connectedness’.

The results of chi-square tests showed significant gender differences in wellbeing thereby supporting Hypothesis 7 as well as the premise that older men have a higher level of wellbeing in Maldives. However, gender differences are significant only for subjective and objective levels of health, thus only partly supporting Hypothesis 7.1 that men achieve higher subjective and objective levels in the five life domains.

Significant differences are observed in wellbeing and life domain measures by geographic isolation of the residential island in Maldives. However, the results indicated that the moderate population cluster had higher levels of wellbeing, rather than the dense population cluster, and wellbeing was lowest in the sparse population cluster. Hence, Hypothesis 8 that the more isolated the population the lower the level of wellbeing was not supported for the Maldives sample. The results on the relationship with geographic isolation and achievements in life domains were varied except for the life domain of access to goods and services, where the more isolated the population has lower subjective and objective levels.

The methodological and theoretical aspects of these findings are discussed in the next chapters within the context of Maldives and, at a more general level, in SIDS.

CHAPTER 7: DISCUSSION

In this chapter, the theoretical perspective and conceptualisation of wellbeing that has informed this research, and its relevance for SIDS, are critically examined in view of the Maldives findings reported in the previous chapters. The discussion focuses on the conceptualisation of the capabilities for wellbeing through life domains in relation to the determinants of the wellbeing of older people in a SIDS context. It also identifies distinct SIDS characteristics compared with industrialised contexts. The discussion particularly focusses on the impact of social connectedness on wellbeing, and the aspects within this life domain, in the Maldives context, highlighting the role of the family. Finally, the differences in the wellbeing of older people across Maldives are discussed along with public policy implications.

7.1 Novel conceptual model of the wellbeing of older people specific to SIDS

The current research theorised that wellbeing in a SIDS context is determined not only by the capabilities of the individual, but also by the wider environment, and was conceptualised across five life domains that capture the distinct geospatial and socio-cultural characteristics of SIDS.

The findings from the Maldives sample confirmed that the five life domains (health, social connectedness, economic status, access to goods and services, and conformity to social values and norms) are important determinants of the wellbeing of older people in a SIDS context. The appropriateness of this conceptualisation of wellbeing was supported by the cumulative contribution of 89 per cent of the subjective measures of the five life domains to wellbeing in the correlation analysis. Furthermore, the regression analysis (with both subjective and objective measures) confirmed the significance of the model of wellbeing with these five life domains as predictors of wellbeing ($p < .01$).

A key feature in the conceptualisation is how the life domains relate to the ‘capabilities’ of the individual as well as to the wider environment. Depending on the size of the correlations of the life domains with wellbeing the five life domains

can be linked to the ‘capabilities’ of the individual and that of the wider environment. Health and social connectedness can be more closely linked to the ‘capabilities’ of the individual (health contributes 35% and social connectedness contributes 29% to wellbeing). They relate to the ability of the individual to be functional (physically and mentally), and to interact with others. The life domains of economic status, access to goods and services, and conformity to social values and norms produce smaller impacts and can be alternatively linked more closely to the ‘capabilities’ that relate to the wider environment (contributing 10%, 8% and 7% to wellbeing respectively). These relate to the capacity of the family and society to support the older individual financially, to make available basic goods and services, and to practice the desired social values and norms.

The findings, thus, indicate that in Maldives, the capacity of both the family and the society to support the older person is critical for their wellbeing. This reflects the socio-cultural characteristics of Maldivian society which are defined by collectivist social arrangements and attitudes of interdependency (see Chapter 2). This is evident in the predominant multi-generational households, where older people are cared for and supported by the extended family. In addition, island living contributes to wider kinship and close friendship relationships within the community which further supplement the interdependency perspective on the roles of older people and their care. At the same time, the geo-spatial characteristics create variations in capacity for economic activity, and this influences the economic living standards of households, which in turn affects access to resources to meet the needs of older family members. In the urban areas, primarily Male’, the capacity of the family to support the older person is constrained by the shortage of space for habitation which forces families to be separated. On the smaller, more isolated islands both the capacity of the wider environment and family is low due to the more limited availability of goods and services, and the pattern of migration of family and friends to other islands for education, employment, health care and other needs.

It is concluded, therefore, that the five life domains – health, social connectedness, economic status, access to goods and services, and conformity to social values and norms – are areas of valued functioning that have a significant impact on the wellbeing of older people in Maldives. Although a significant association between the individual life domains (except conformity to social values and

norms) and wellbeing was established, the cross-sectional nature of the study did not allow the determination of the direction of causality. The findings are, however, particularly useful in associating the life domains related to the individual capabilities and also to capabilities in relation to the wider environment that reflect the distinct socio-cultural and geo-spatial characteristics of SIDS. The findings, also identify the life domains that correspond to ‘capabilities’ regarded as instrumental in industrialised settings as significant determinants of wellbeing. In conceptualising wellbeing in a SIDS context researchers must therefore adopt the widest application of the ‘capabilities’ approach to capture their unique life circumstances. These findings have important implications for further research on wellbeing in SIDS as well as policy and practices that aim to enhance the wellbeing of older people in such countries.

7.1.1 Methodological aspects

The methods adopted in the conceptualisation and measurement of wellbeing and the life domains are important for the understanding of the findings and have implications for further research. Firstly, while the five life domains show a high combined variance with wellbeing, the research does not claim these represent all the predictors of wellbeing. It was theorised that wellbeing is a state of being achieved through the fulfilment of emotionally rewarding goals, hence it is likely psychological factors also contribute to wellbeing (Deci & Ryan, 2008). These were not examined as it was beyond the scope of the current research. Nevertheless, it can be concluded from the findings of the Maldives sample that the experiences in these five life domains contribute to the wellbeing of older people in a SIDS context.

Secondly, important differences were observed in the relationship between the life domains and wellbeing based on whether a subjective or objective measure was used. The size of the correlations observed were larger when subjective measures were used compared with objective measures. This is explained by the use of similar subjective measures of ‘satisfaction’ for the indicator of wellbeing and for the life domains (‘overall satisfaction with life’ for wellbeing and ‘satisfaction’ with each of the life domains) which involves similar psychological processes in determining the responses (Cummins et al., 2003; Cummins, 2000a). Although these differences exist in the correlations of the life domains to wellbeing, the regression analysis confirmed that the five life domains as a set of variables

(either subjective or objective measure) were significant in predicting the wellbeing of the older people in Maldives.

Thirdly, the type of measure affected the significance of the cause-effect association of the life domains with wellbeing as observed in the regression statistics. While objective measures in four of the life domains (health, social connectedness, economic status, and access to goods and services) were found to be significant predictors of wellbeing, subjective measures in only three life domains (health, overall social connectedness and economic status) were found to be so.

This differences in the significance levels of the life domains can be explained by how the measures were operationalised to reflect the actual and possible states in the life domains. The objective measures reflect the state achieved in the life domain as they involve a cognitive assessment over a four-week recall period, while the subjective measures reflect the possible states the individual could achieve, as the satisfaction measure includes psychological processes that relate to valued goals. The findings of the regression analysis indicate that for older people in Maldives, both the current and possible achievements in the life domains that relate to the individual capabilities (objective and subjective measures of health and social connectedness) were extremely important for their wellbeing (see significance levels in Tables 6.5 and 6.8). However, in the life domains that relate to the wider environment, current achievements (objective measures) were more important than possible achievements (subjective measures) – see Tables 6.5 and 6.8. This suggests that being healthy and socially connected are emotionally rewarding for older people, and ties in with the perspectives that older people are selective and shift their motivation to non-material goals. However, this premise cannot be ascertained within the scope of this research.

Another explanation for the different findings in the use of subjective and objective measure, can be that life domains which relate to the capabilities in the wider environment may be acting through more than one pathway to contribute to wellbeing. Supporting this notion is the finding that in addition to the direct correlation with wellbeing, subjective measures of these life domains (economic status, access to goods and services, and conformity to social values and norms) also have significant correlations with health and social connectedness. It is,

therefore, proposed that the effect of the life domains that relate to capabilities of the wider environment is also mediated through experiences of other life domains more proximal to the individual.

The importance of the objective measures is that they allowed for the identification of factors that impact achievements in the life domains that are distinct to the SIDS context. These measures, thus, capture the different realities of the SIDS and can be used to inform the development of public policy and programmes targeting older people's wellbeing. The objective measures also allow for their application to other SIDS contexts and continued improvement in the measurement scales.

7.1.2 Summary

It is concluded, therefore, that the five life domains – health, social connectedness, economic status, access to goods and services, and conformity to social values and norms – are life circumstances that have a significant impact on the wellbeing of older people in Maldives. The findings were particularly useful in establishing the life domains related to the individual capabilities and also to capabilities in relation to the wider environment as significant determinants of wellbeing in a SIDS context. The findings, thus, established that in conceptualising wellbeing in SIDS, it is appropriate to consider life domains that correspond to ‘capabilities’ regarded as instrumental in industrialised settings as significant determinants of wellbeing. In conceptualising wellbeing in a SIDS context, researchers must therefore adopt the widest application of the ‘capabilities’ approach to capture their unique life circumstances. These findings have important implications for further research on wellbeing in SIDS as well as policy and practices that aim to enhance the wellbeing of older people in these countries.

7.2 Characteristics of the life domains that impact the wellbeing of older people in a SIDS context

The current research focussed on identifying the determinants of the wellbeing of older people in a SIDS context and theorised that there are important differences in the determinants of wellbeing compared with those observed in industrialised contexts. In this section the determinants of the wellbeing of older people across the five life domains are discussed, highlighting the specific characteristics relating to the SIDS context.

The most important correlates of wellbeing of older people in the Maldives sample are the life domains of health and social connectedness, the subjective measures accounting for 64 per cent of the cumulative variance (35 per cent by health and 29 per cent by social connectedness). The regression analysis further established health and social connectedness as the most important predictors of wellbeing. This cumulative contribution of these two life domains is much larger than the combined contribution of the other three life domains (economic status, access to goods and services and conformity to social values and norms), with the subjective measures accounting for a cumulative variance of 25 per cent. However, the regression analysis established that other life domains (except for conformity to social values and norms) individually had a cause-effect relationship with wellbeing ($p < .05$). It is important, also, to note that as a set of predictors of wellbeing, the life domain of social values and norms was an important variable in the Maldives sample. This finding together with the significant correlation of this life domain with wellbeing, indicates that conformity to social values and norms is, nevertheless, an important life domain in the Maldives context.

The findings show that there are similarities and important differences in the life domains that impact the wellbeing of older people in a SIDS context compared with industrialised contexts. While some of the life domains such as health are similar to those in industrialised country contexts (Berg et al., 2006; Pool et al., 2009), some show differences within the life domains (economic status and social connectedness), and other life domains (access to goods and services, and conformity to social values and norms) are specific to SIDS. These specific life domains are not identified as important aspects that impact wellbeing in industrialised contexts, perhaps because they reflect the developmental situation where they are assumed to be universal. In international research life domains that constitute goods and services, socio-cultural aspects of the wider environment are used only to explain differences in wellbeing observed between countries, and not as determinants of wellbeing. However, the findings support the proposition of this research that these life domains which extend beyond the capabilities related to the individual to those in relation to the wider environment are also important determinants of wellbeing in a SIDS context.

The discussion now examines the distinct characteristics of the life domains (except social connectedness which is discussed in section 7.3), and endeavours to show how they are influenced by the wider socio-cultural and geo-spatial characteristics of the environment in Maldives (see Figure 3.1).

7.2.1 Health

The finding that health is the most important predictor of the wellbeing of older people in Maldives, is consistent with the findings of research in industrialised and developing country contexts (Deaton, 2010; Gwozdz & Sousa-Poza, 2010; Wang et al., 2011), suggesting that irrespective of the context, the impact of health on wellbeing is universal. It is perhaps because the factors related to this life domain are central to the individual's functioning.

The findings show that physical and mental health have a significant impact on the perception of the level of overall health, consistent with research in different contexts (Clarke et al., 2000; Garatachea et al., 2009; Haseen et al., 2010; Lim, 2007; Uppal, 2006). In the Maldives sample, physical health has a higher correlation with the participant's self-perceived level of overall health than mental health (the contribution by physical health to the level of overall health was 67.4% ($p < .01$), while it was 52.0% ($p < .01$) by mental health). This is also consistent with the findings of previous research that it is the functional limitation to carry out daily activities and socially valued tasks rather than disease conditions that older people consider in self-reports of health (Freedman, Stafford, Schwarz, Conrad, & Cornman, 2012; Haseen et al., 2010; Razzaque, Nahar, Khanam, & Streatfield, 2010). The findings, therefore, suggest that older people assign higher importance to physical challenges that impact on their adaptation and interaction with the environment than to their mental health. This ties in with the perspective of ageing that emphasises the ability to adapt person-environment interactions as important to the wellbeing of older people (Clark & Gough, 2005; Deci & Ryan, 2011; Diener & Suh, 1997).

In this study the lower correlation of mental health with the level of overall health compared with physical health, however, needs to be interpreted with caution, as the Maldives residents who were not able to freely express their own views were excluded. Nevertheless, the significant contribution of mental health to self-perceived health suggests that mental health is an important factor in the health

life domain. The mental health status in the Maldives sample could reflect the psychological aspects of co-morbidities that are prevalent among older people (Momtaz, 2010). It could also reflect the negative impact of changing social institutions in the society, on the mental health of older people, as has been observed in other Asia-Pacific studies (Bourne, 2009; Gómez-Olivé et al., 2010; Netuveli et al., 2006; Lim, 2007), where it has specifically been noted that the social characteristics of a society do impact on health (Marmot, 2005). This is also likely to be the case in Maldives as the changing family structure and attitudes towards older people's care have been noted as important aspects that need to be considered in addressing the health and wellbeing of older people (Didi, 2012).

The findings also show that the health of older people was on average 'moderate' including that of physical health and mental health (see Chapter 5). These levels can be explained to some extent by the co-morbidities that are usually associated with old-age (Rahman & Barsky, 2003; Razzaque et al., 2010; Sadana, 2000), but in the Maldives context, it also reflects the geo-spatial characteristics that challenge access to health care. More than half of the participants (58%) had difficulty accessing health care, with the most common reason being the non-availability of services. Previous research in Pacific SIDS has shown that the provision of appropriate health care to older people continues to be a significant challenge in these contexts (Bourne et al., 2009). The influence of geo-spatial characteristics on health is further established by the significant correlation of the life domain of access to goods and services with health in this study.

It is confirmed that health is the most important determinant of the wellbeing of older people in Maldives, as has been observed in other contexts. It can be argued that the life domain of health reflects the physical and mental functioning that enable older people to adapt and engage in personally valued tasks, and these have significant impact on the overall health status. The social characteristics of the society and availability of appropriate health care are important aspects that influence health in the Maldives/SIDS context. In developing policies and programmes for the promotion of health, both physical and mental health must be focussed upon taking into account the changing socio-cultural circumstances and the distinct geo-spatial characteristics of Maldives, and, at a more general level, the characteristics of SIDS.

7.2.2 Economic status

The factors that influence economic status in the Maldives context are different from those in an industrialised country context. For instance, economic status in industrialised countries is typically related to the individualistic values, but in SIDS economic status extends beyond the individual to the household and to the extended family and friends (Connell & Conway, 2000). This is evident in how older people in Maldives receive financial protection and security from the extended family and in the way they perceive their economic status.

A large proportion of Maldivian older people now receive the old-age pension (as noted in Chapter 2), and this is commonly supplemented by informal remittances from family and friends – 95.1 per cent received old-age pension and 58.7 per cent received informal remittances. More than half of the participants reported ‘good’ levels of economic status and being ‘satisfied’ with their standard of living. With the financial security provided to older people by the state and the extended family, it was expected that the financial situation of older Maldivians would be reflected in a curvilinear relationship with wellbeing, with a small impact on wellbeing (Cummins, 2000b; Diener & Suh, 1997; Easterlin, 2001, 2006). The findings confirm this: economic status is significant for wellbeing, which is consistent with the findings in other developing countries and also in more advanced SIDS such as Singapore (Clark et al., 2008; Kahneman & Deaton, 2010; Kuan et al., 2009). Furthermore, the smaller contribution of economic status to wellbeing (compared with health and social connectedness) aligns with the motivational shift of older people to non-material goals (Carstensen et al., 2003), and that the extended family households in Maldives protect older people from financial stresses.

The findings, however, suggest that in extended family arrangements, the older individual’s income may not be a significant factor in providing a ‘good’ economic standard of living – close to half of the participants reported either ‘moderate’ or ‘poor’ levels. On the one hand, older people are financially secured by filial piety and informal remittances, while on the other hand, the older person’s income also contributes to the household expenses but may not be equally divided between the family and the older person. It has been observed in Asian developing country contexts with extended family arrangements (as in India) that in the division of household income, older people receive less (Evans

1990 quoted in Rudkin 1993). This could be explained by the motivational shift of older people to non-material goals, and in a collectivist society where interdependence is more highly valued, contributions to other family members are seen as their own achievements (Camfield, et al., 2009; Easterlin, 2006; Rudkin, 1993). It is also possible, despite receiving the old-age pension, that the older person may not perceive any improvements in their economic standard of living, unless it is reflected in improvements for the entire household. The lower aspiration for material goals among older people coupled with the collectivist attitude of interdependence has, therefore, possibly influenced the assessment of their economic status in the Maldives sample. The proposition as to how older people perceive a good standard of living inclusive of the extended family household therefore needs further investigation.

It can be argued, however, that in the context of Maldives the economic status of older people is affected not only by their financial standing but also through the relationship of their economic status to the socio-cultural characteristics of the society. When viewed in this context, the findings align with the motivational shifts of older people to non-material goals and the social attitudes towards independence/interdependence in influencing the older people's economic status. Further investigation on how these social characteristics influence the impact of economic status on the wellbeing of older people in SIDS is, therefore, needed.

7.2.3 Access goods and services

The characteristics of this life domain include access to commodities for personal and household use, housing, health care, and services, particularly transport and communication (telephone and internet), and is a life domain specific to the SIDS context. Although none of the participants reported 'poor' levels of access to goods and services, less than half (40.1%) were 'satisfied' with it. The significant contribution of this life domain to wellbeing (using both subjective and objective indicators) confirms that affordability and the ability to utilise goods and services are important factors that contribute to wellbeing. The Maldives participants showed high levels of affordability (see Table 5.28) which is further supported by the finding that older people in Maldives are financially protected, by both old-age pensions and informal remittances from family and friends. However, the low levels of utilisation of services (see Table 5.30) indicate that there are challenges in physical access. In Maldives, the geospatial characteristics make it difficult to

provide goods and services in the small islands resulting in unmet needs on a number of islands, especially those that are more isolated (Division of Sustainable Development, 2014b). Furthermore, the small size of the economy, as in other SIDS, increases dependence on international sources for basic goods and services, including food and health care (Division of Sustainable Development, 2014a,b). The finding that the non-availability of services is the most common reason for difficulty in gaining access to health care confirms that physical access is important in the achievement of this life domain.

Access to goods and services is, therefore, influenced largely by the geo-spatial characteristics of Maldives, as in other SIDS. Older people have to seek goods and services from other islands or countries which incur social and economic costs to the household. Since access to goods and services makes a significant contribution to wellbeing, the challenge for SIDS is to address not only questions of affordability, but also to identify ways to provide easier physical access for the older people to goods and services.

7.2.4 Conformity to social values and norms

This life domain is also specific to SIDS and recognises that collectivist societies needs to be seen in contrast to the more individualistic societies of industrialised countries. The attributes related to this life domain constitute the practice of five social values and norms in the community, three belonging to harmony value type (trust, altruism and safety), and two belonging to embeddedness value types (respect for elders and tradition of care of elders). The findings, however, contradict the general expectation of a collectivist society, that higher importance should be placed on values of tradition and conformity. The results showed lower levels of perceived respect for elders and the tradition of care of elders compared with harmony value types such as trust and altruism.

It has been suggested that when there is a poor fit between the desired values and the actual practice of these, there will be negative effects on wellbeing (Schwartz, (2011). The findings suggest a considerable gap in the prevalent value orientation of contemporary Maldivian society and that of the older generations in Maldives (only a third of the participants perceived the level of conformity to social values and norms as ‘good’). However, with just over a quarter (26.1%) of the participants ‘dissatisfied’ with the level of conformity to social values and norms

suggests that older people are adapting to the changing social value orientation of their society. The continued predominance of the extended family arrangements and the kin and friendship relationships within the small island communities can be seen to facilitate older people's adaptation. In the current socio-cultural transition in Maldives, it is likely that some older people belong to different social groups, e.g. they could be parents of children that have a different value orientation, or elders who have a similar value orientation. Such groups may form overlapping social identities and promote greater inter-group tolerance (Roccas & Amit, 2011). However, within the scope of this research, this proposition could not be examined.

Although the conformity to social values and norms had a significant correlation with wellbeing, it did not have a significant association with wellbeing which signifies that the influence of this life domain on wellbeing is through other life domains. This notion is supported by the significant correlations of conformity to social values and norms with other life domains, especially social connectedness (see discussion on social connectedness in 7.3).

Hence, the influence of the life domain of conformity to social values and norms on wellbeing is dictated by the prevalent social values and norms in the community and the older person's ability to achieve a good fit between their own desired values and those prevalent in the society. The importance of achieving a good fit with the prevalent social value orientation is of particular relevance, for, as in many other SIDS, Maldives is undergoing socio-cultural transitions associated with development which also influences other life domains. As collectivist societies, SIDS have a shared social identity that is the basis for the care and protection of older people in promoting their wellbeing. Hence it is important to identify ways in which policy and practices can develop the capacity of the society to enhance the fit between the value orientation of younger and older people.

7.2.5 Summary

The Maldives findings confirmed that life domains impacting on the wellbeing of older people have some similarities to industrialised contexts, as evident in the life domain of health, while important differences were observed with the life domain of economic status. For instance, in this study, economic status is probably

primarily influenced by that of the extended family household and not by the older person's income. However, the life domains of access to goods and services, and conformity to social values and norms are specific to a SIDS context. The wider socio-cultural and geo-spatial characteristics also influence the experience older people have in these life domains, including the experiences that underscore the need to recognise the collectivist socio-cultural arrangements and distinct geo-spatial characteristic of isolation when assessing the determinants of wellbeing. They also emphasise the need to focus public policy in Maldives on the experiences older people have in these five life domains to enhance their wellbeing.

7.3 Characteristics of social connectedness that impact wellbeing

As in many SIDS, Maldivian society is collectivist, but given the geo-spatial features many families are dispersed across different islands. Against this background, the findings established the important contribution of social connectedness to the wellbeing of older people, one of the key questions of the research. This was expected, given the collectivist social arrangements where interdependence, rather than independence, is the societal norm. The findings, confirm that the prevalent socio-cultural norms and practices in SIDS, provides the context that facilitates social connectedness. There was a significantly large correlation between subjective measures of conformity to social values and norms and social connectedness.

The findings support the conceptualisation of social connectedness that includes aspects of social networks, social engagement and social support in influencing wellbeing. It may be that the role of social connectedness in wellbeing has been recognised in previous research, but the conceptualisation of social connectedness in the current research is different, given the collectivist social context. This makes comparison with other findings difficult, but the observations in this study generally align with those found in other research into social networks, social engagement and social support and wellbeing (Ashida & Heaney, 2008; Berkman & Glass, 2000; Cornwell, Laumann, & Schumm, 2008; Koopman-Boyden & van der Pas, 2009). The finding that as a predictor of wellbeing social connectedness

follows similar association as health further establishes the importance of this life domain.

Unlike the findings from industrialised contexts that have found a significant association between living arrangement (as a factor providing social connectedness) and wellbeing, this was not the case in the current study, given the near universal extended family arrangements (92.6% were living with others, whether they be spouse or children, and often in an extended family households). This suggests that it is the social connectedness created through the collectivist extended family and community social arrangements that impact on wellbeing, and not the type of household living arrangement. Such propositions have been made in other research to explain the positive effects on wellbeing of living with others, emphasising social relationships and interactions (Berkman & Glass, 2000; de Jong Gierveld & van Tilburg, 1999; Phillips et al., 2005; Zunzunegui et al., 2001).

Social connectedness was operationalised as the integration of the individual through the social network of family and friends, social engagement and social support. The important factors in this life domain that have an impact on wellbeing relates to the ability of the individual to interact with others and the capacity of the family and community to support such interactions. Of the individual variables that constitute social connectedness, the items that make moderate to large contributions (10% or more shared contribution) to satisfaction with overall social connectedness (subjective measure) are ‘frequency of contact with family’, ‘frequency of contact with friends’, ‘number of family contacts’, ‘engagement in social activity with family’, ‘engagement in social activity with friends’, and ‘social support from family’. These variables also have a significant correlation with wellbeing (see Chapter 6). The life domain of social connectedness, thus, operates through the social network and through social engagement, with family and friends rather than the community.

The geo-spatial characteristics of Maldives mean that many older people are separated from several family members due to migration. However, the findings identify the older people’s adaptation to the circumstances of a dispersed family in the isolated islands of Maldives, which many had experienced throughout their life course. In addition, the historically large family size and the collectivist social

values and norms appear to be conducive to social connectedness in these circumstances. The findings show that older people in Maldives typically have a large network structure (with 5 or more family members and 1-4 friends) reflecting the kinship or friendship relations with many households in the community, as is reported as the case in other SIDS (Cloos et al., 2010; Rawlins et al., 2008). These linkages among households in the community leads to a situation where social network members are in close proximity providing the opportunity to have daily contact with family members, friends and neighbours, creating a high level of social connectedness. The findings that a large proportion of the Maldives sample had 'in person' contact with friends and also with family members living elsewhere 'daily' or 'weekly' supports the notion that proximity is important for social connectedness. As well, the findings showed a high satisfaction with social connectedness 'with family' as well as 'with friends'. The historical family structures and existing collectivist socio-cultural characteristics were able to overcome the isolation posed by geo-spatial characteristics in Maldives, and created opportunities for a high level of social contact with a proximal social network.

The engagement in social activities with friends and family is also facilitated by collectivist social arrangements and the smallness of the communities. This view is supported by the high level of engagement in social activities with family and friends in the Maldives sample as well as the significant correlations of such social engagement with wellbeing. However, the findings show that social engagement in the community, though significant, was low, which is in contrast to the findings in industrialised contexts where engagement in the community is an important contributor to wellbeing (Koopman-Boyden & van der Pas, 2009). This is perhaps because structured community-based social activities for older people are irregular and occasional in Maldives, as in other SIDS (Cloos et al., 2010). Moreover, formal voluntary associations are non-existent in Maldives (except for Maldives Red Crescent), which thereby limits opportunities to be involved. In addition, with the higher social status given to older people in the society of SIDS, there is a tendency not to include them in some of the community-based activities as it may appear to be disrespectful (Hayes, 2009). The findings establish that although social engagement other than those with family or friends is less preferred, different types of social engagement generates experiences of social

connectedness that affect wellbeing. However, the findings also reinforce the view that social connectedness of older people is established largely within the extended family and with close friends.

In addition, social support is found to be an important aspect of social connectedness, particularly social support from family rather than friends. Social support from family made significant contributions to social connectedness and wellbeing, further highlighting the importance of extended family arrangements in Maldives. The findings showed near universal social support from the family, which aligns with the cultural practice and attitudes towards ageing and care of older people. This is consistent with the findings of Fox (2005), who also observed that attitudes and practices towards care of older people affect social connectedness. The extended family arrangements, thus, provide opportunities for social contact and support from family and kinship, and, along with friendship relationships within the community, provide a conducive social environment for social engagement.

It can be concluded that being socially connected is valued by older people, and is established through social networks, social engagement and social support from the family. The collectivist social values and social arrangements also enable a high level of social connectedness, despite the geo-spatial challenges. Therefore, it is in the interests of older people that collectivist social arrangements prevail in SIDS, and the maintenance of these arrangements should be actively pursued by policy makers and other stakeholders working for and with the wellbeing of older people.

7.3.1 The role of the family in social connectedness and wellbeing

The family occupies a central position in the lives of older people in Maldives. The expectation for social interaction and social support rests largely on the family, as is the case for other SIDS (Cloos et al., 2010; Hayes, 2010). However, as discussed in Chapter 2, SIDS are undergoing social change as evident in the shift from extended family arrangements to a nuclear family structure (United Nations, 2002a). This has the potential to weaken the social connectedness of older people, exaggerated with the migration of adult children and friends to other islands for education, work and other services. Hence, one of the research questions was to identify the role of the family in social connectedness. The

finding that ‘satisfaction with social connectedness with family’ makes a significantly larger correlation to wellbeing, (26%) compared with that of ‘satisfaction with social connectedness with friends’ (17%) establishes the importance of family for older people in Maldives.

The findings show that the historically large family size means that, currently, the majority of older people are still able to live in extended family households in Maldives. They are able to adapt to a family environment with fewer kin, which still provides for a large social network of family members and facilitates a high degree of social connectedness. Furthermore, the findings indicate that interactions with family members are more emotionally rewarding for older people than interactions with friends – ‘satisfaction with social connectedness with family’ contributes almost twice (54%) that contributed by ‘satisfaction with social connectedness with friends’ (28%) to the ‘satisfaction with overall social connectedness’. Thus, the family environment is critical in providing opportunities for emotionally rewarding social contact, social support, and social engagement which enhances social connectedness, and in turn wellbeing.

The findings show that it is the interactions that occur within the social network rather than the structural characteristics of the network (such as network size) that makes a larger contribution to wellbeing. In fact, among all the variables that constitute social connectedness, ‘frequency of contact with family’ made the largest contribution to wellbeing. In Maldives, as older people are anchored by the family network and family relationships form the core of their social interactions, with the wide range of their contribution providing for both emotional and instrumental interactions. Furthermore, a large proportion (over 80%) of the Maldives sample continued to engage in social activities with family which had a significantly large (more than 10%) correlation with wellbeing. This indicates that within the extended family relationships, a wide range of social activities occur including interactions with children, grandchildren and other relatives that provide varied experiences of social connectedness.

Social support from family also made a significant, although relatively small, contribution to wellbeing (4%), is in contrast to findings from some of the industrialised countries where social support from family was found to be negatively associated with wellbeing (Fiori et al., 2006). This may be a reflection

of the expectation of social support from kin that is also linked with emotional interactions such as bonding and family affiliation (Merz & Consedine, 2009; Rawlins et al., 2008). These contrasting findings have been attributed to societal attitudes toward dependence with receiving support from family being viewed as a threat to independence in some societies (Yeung & Fung, 2007). As noted earlier, since there is an expectation that the family will care for older people, the notion of a societal attitude towards dependence might, therefore, explain the findings. However, in the current study, the contribution of 'social support from family' to wellbeing was small indicating that although the family norms are linked with the provision of social support, it may not be as rewarding as other experiences, and perhaps it is the social contact generated through social support that is important. The familial responsibility of caring for older family members (even when they are bed-ridden), therefore, provides for social integration within the family, and allows for interaction with family members, as has been observed in other SIDS (Hayes, 2009; Panapasa et al., 2012; Rawlins et al., 2008).

The findings confirm that friends also play a significant role in social connectedness, by providing opportunities for social interaction that are likely to be different from those obtained through the family (Berkman et al., 2000). In the extended family environment, the older person has less choice in choosing family contacts and some family contacts may not be as rewarding as others, and may have negative effects on wellbeing, as they are not always supportive (Fiori, Antonucci, & Cortina, 2006; Rook, 1990). Perhaps, this is reflected in the smaller contribution of 'number of family contacts' to wellbeing than 'number of friends', implying that despite a large family network, not all family members provide emotionally rewarding experiences. However, people are able to choose friendship contacts and typically do so in favour of those that are most emotionally rewarding (Carstensen et al., 2003). This proposition is further supported by the finding that 'engagement in social activity with friends' has a similar contribution as 'social activity with family' to the satisfaction with overall social connectedness (10% for both factors). Social connectedness with friends may be considered to be especially challenging in SIDS, as older people are faced with the frequent loss of friends who frequently migrate to other islands for better health care and to live with family. In addition, there are fewer opportunities for interaction with friends for older people in the isolated islands (due to lack of

amenities and services), as also observed in the Caribbean SIDS (Rawlins et al., 2008). Nonetheless, the smallness of the communities in the more isolated islands means families are friends and in close proximity facilitating social contact. The findings, thus, establish that friends also play an important role in social connectedness by providing different opportunities and experiences to those provided by the family.

Thus, it is established that the extended family arrangement in Maldives results in a predominantly family-based social network with the expectation of social interaction and the care of the older people by the family. Despite this expectation of care, older people achieve a sense of social connectedness by frequent contact with family members not only through social support, but also through emotionally rewarding experiences within the extended family household. Older people are selective in their relationships with friends resulting in a smaller number of friends, but achieve different experiences facilitated by the smallness of the islands and the collectivist social value orientations of the society. The combination of friends and family in the social network, therefore, is likely to improve the quality of social connectedness. This is reinforced by the importance of social engagement with friends and family in social connectedness, compared with social engagement in the community. This is a marked difference to the situation in industrialised contexts and, therefore, distinctive to the SIDS context. Thus, the findings underscore the importance of family, yet indicates that social connectedness through a combination of family and friends can be more favourable for wellbeing.

7.3.2 Summary

The findings from the Maldives sample established that social connectedness is one of the most important life domains that impact on the wellbeing of older people. Social network, social support and social engagement are the key aspects of the social connectedness life domain. Although operationalised to include the community, in this study the findings stress the importance of family and friends, rather than the community, in providing social connectedness. There is clear evidence that the family plays a greater role in the social network, social support and social engagement than friends, and this can be attributed to the socio-cultural context where collectivist societal and family arrangements prevail. Nevertheless, there is an indication that family and friends provide experiences that differ

emotionally and that a varied composition of social network provides different experiences for social connectedness. Factors within this life domain demonstrate specific aspects of social connectedness in a SIDS context, contrasted with industrialised country contexts. As such, the findings emphasise the importance of context specific measures when conceptualising the determinants of wellbeing. It also highlights the importance of promoting social connectedness in SIDS with a focus on both family and friends, rather than on the broader community.

7.4 Differences in wellbeing of older people across the islands of Maldives

The findings show that the majority of older people (64% of the participants) in Maldives have a ‘high’ level of wellbeing. This finding provides support for the notion that the wellbeing of older people in context is influenced not by the developmental situation of the small island state, but by the experiences across several life domains that relate to the socio-cultural and geo-spatial characteristics of a SIDS context. In addition, the findings show variations in the levels of wellbeing related to interpersonal characteristics such as gender. The effects of these contextual and interpersonal characteristics are now discussed.

7.4.1 Effects of geo-spatial characteristics

One of the questions asked was how the geographic isolation of the islands affects the wellbeing of older people, given the associated developmental differences. In the Maldives sample, the moderate population cluster of islands (with a medium level of isolation) was found to be more favourable for wellbeing, compared with those in the least isolated (dense population cluster), or most isolated (sparse population cluster), with wellbeing being lowest in the most isolated island cluster (see Chapter 4 for the detailed criteria for the grouping of islands clusters). These findings suggest that the differences in wellbeing are not due to geographic isolation per se, but to the wider environmental characteristics. This notion is consistent with findings of Oswald et al. (2011) who observed that neighbourhood quality and social aspects were significant correlates of wellbeing for older people.

The social exchanges in the wider environment have also been identified as an important factor for wellbeing, suggesting that living environment is defined not

necessarily by the physical characteristics, but by the experiences that people have in that place (Oswald et al., 2011; Oswald et al., 2006; Phillips et al., 2005; Wahl et al., 2012). Drawing on these insights, it can be suggested that the differences observed in the wellbeing of older people in Maldives relates to the geographic isolation of the island cluster mediated by their experiences in the place they live, including the wider environment.

Significant differences by the island cluster in which the participants live, exist in the life domains of health, access to goods and services and conformity to social values and norms. Social connectedness and economic status also show significant differences by island cluster (although only in the subjective measures). Nevertheless, an important finding is that the differences in all the life domains do not follow the same pattern with wellbeing, and they vary according to the measure used. In the subjective measures, the four life domains (health, social connectedness, economic status, and conformity to social values and norms) show highest achievements among the participants in the moderate population cluster that is consistent with wellbeing. In the life domain of access to goods and services, satisfaction was highest in the dense population cluster, which is expected given the urban infrastructure of Male' in this cluster. With the objective measures, health, and access to goods and services were highest in the dense population cluster, while social values and norms was highest in the moderate cluster, similar to wellbeing. The differences in the objective levels of social connectedness and economic status were not statistically significant. Thus, it is difficult to pinpoint a single cause for the differences in wellbeing across the islands and taking into account their geo-spatial characteristics.

7.4.2 Effects of socio-cultural characteristics

Since it has been established that the life domains relating to the wider environment have a significant correlation with wellbeing, as well as other life domains that relate to the individual, it is possible that geospatial characteristics need to be examined together with the socio-cultural characteristics, especially the changing social values and family structures, to explain the differences across Maldives. The geo-spatial characteristics of the Maldives results in variations in the socio-cultural transitions across the islands associated with development that affects experiences important for wellbeing.

Differences in the life domain of conformity to social values and norms observed by the geographic isolation of the island clusters in Maldives are an indication of the changing social values occurring in the different island clusters. The dense population cluster, being an urban area, is likely to experience a greater transition in terms of development and social change compared with the other clusters. Furthermore, the geo-spatial characteristics of Maldives are such that there is inadequate land for habitation in urban islands, hence many kin do not co-reside. This situation, together with the work engagements of adult children in urban areas and limited opportunities for social contact and support from family which conflicts the traditional familial values and norms, has been observed in another SIDS such as Jamaica (Rawlins et al., 2009). Hence, older people, residing in the dense cluster may find themselves overwhelmed with the speed of social values change in the attitudes towards older people, and their adaptation may be lagging behind which impacts their wellbeing. Similar findings were observed by Ko (2012) who found that in developing Asian countries older people face conflicts in relation to their desired values and norms and realities, while they strive to fulfil their familial obligations.

Considering that social transitions are associated with development, it can be expected that older people in the sparse population cluster, due to the isolation and smallness of their community, will demonstrate stronger in-group values and a preference for the embeddedness values of tradition and conformity. However, the findings were not consistent with this expectation. The lower conformity to social values and norms compared with the moderate population cluster could be explained by the geo-spatial characteristics and associated developmental situation of these islands. The islands of the sparse cluster were the most isolated and rural, increasing the likelihood that family members (including adult children) and friends migrate, impacting on the social role of the older person in the family and the protection and security available to them. Such situations have been observed in other SIDS in the Pacific (Hayes, 2010; Rawlins et al., 2008). This, therefore, results in a gap between the expected responsibility of the family and the actual practice to which the older people have to adapt (as demonstrated by the low levels of satisfaction with the conformity to social values and norms). However, the effect appears to be compensated to some extent by the historically large family size, close physical proximity of the households on the island, and by

the close-knit nature of the community compared with that in the dense population cluster.

However, social values changes and adaptations do not explain why wellbeing was lowest in the sparse population cluster. It appears that the geographic isolation and rural nature of these islands plays an important role, as indicated by the lowest access to goods and services. Although the gap in social value orientations are smaller in the sparse population cluster than that of the dense population cluster, its positive effects are not evident due to the low achievements in meeting the basic needs of the older residents, due to problems of access to goods and services.

The moderate population cluster, however, appears to have a slower pace of change in social values and the spatial challenges are fewer than the urban, dense population cluster. Moreover, islands in the moderate population cluster were less isolated and through urbanisation had better access to goods and services to meet basic needs, compared with the sparse population cluster. Hence, both socio-cultural and geo-spatial characteristics were more favourable in the moderate population cluster compared with the dense and sparse population clusters.

Thus, it can be concluded that the differences in the wellbeing of older people across Maldives is mediated largely by the changing social values and social institutions of the society, particularly the changing family structures. The geo-spatial challenges in Maldives, particularly the limited land available for habitation and access to goods and services, increase the threat to the collectivist social arrangements that secure the older people's social roles, living arrangements and fulfilment of basic needs.

7.4.3 Gender differences in wellbeing

The level of wellbeing was higher among older men than older women in the Maldives sample. This gender difference is consistent with a number of previous findings in different country contexts in the Asia Pacific, such as in New Zealand and Malaysia (Koopman-Boyden & Waldegrave, 2009; Luo Lu et al., 2010; Momtaz et al., 2011). Several explanations for this observation have been provided by other researchers, such as higher rates of widowhood, poorer health and fewer financial resources among older women (Pinquart & Sörensen, 2001).

The findings also showed that, in Maldives, married older people had a significantly higher level of wellbeing compared to unmarried older people which is again consistent with other research findings (Bailey & Snyder, 2007; Shmotkin, 1990; Wood et al., 1989).

The greater levels of wellbeing among men aged 65+ years could be because in Maldives, men of this age group are more likely to be married (or remarried), while women are more likely to remain widows. Nevertheless, the findings of the Maldives sample indicate that the effect of marital status on wellbeing could be mediated through social connectedness. Significant differences in social connectedness were observed between married older people (predominantly males) and unmarried older people (including those widowed, divorced or never married, who are predominantly female). This observation is consistent with the findings in other contexts where it has been observed that being married or living with a partner is associated with a higher level of satisfaction with social contacts (Koopman-Boyden & van der Pas, 2009). It has been proposed that the effect of marriage on social connectedness is through emotionally rewarding experiences such as companionship, thus affecting the quality of social connectedness (Berkman et al., 2000; Lang & Carstensen, 1994). These findings suggest that although living with family increases satisfaction with social connectedness, being married specifically enhances it, possibly by increasing the quality of emotionally rewarding experiences.

Another explanation for the gender differences in wellbeing in the Maldives sample could be that they are mediated by health status, as the measures of health were higher for men compared with women. The lower health indicators among older Maldivian women could be explained by their poor historical access to appropriate health care leading to poor health outcomes, specifically in relation to reproductive health and child birth (Ministry of Planning and National Development, 2007a). The findings are also consistent with findings of previous research in SIDS – Jamaica, Barbados, Singapore, and Trinidad and Tobago (Hambleton et al., 2005; Lau, Johnson, & Kamalanabhan, 2012; Lee et al., 2011; Naidoo et al., 2010; Rawlins et al., 2008), and have been associated with the higher prevalence of chronic diseases and disability, and poor mental health among older women. Earlier research on ageing in western societies has associated poor mental health with older women's health disadvantage (Pinquart

& Sörensen, 2001; Smith & Baltes, 1998). The poor mental health among older Maldivian women is perhaps a reflection of higher rates of widowhood, as well as the effects of changing family structures that disproportionately affect older women, as have been observed in a number of other Asian countries such as India, Indonesia and Singapore (Lim & Ng, 2010; Lim et al., 2007; Sudha, Suchindran, Mutran, Rajan, & Sarma, 2006).

Thus, the gender differences in wellbeing are mediated through health and social connectedness, influenced by their historical health situation and marital status. In addressing gender differences in wellbeing, then, it is important to focus on public policies and practices that promote health and reduce disparities in the life expectancy of older men and women in a way that enables a higher quality of health and social connectedness.

7.4.4 Summary

The majority of older people in Maldives had a ‘high’ level of wellbeing, which is determined by the experiences that relate to several life domains – health, social connectedness, economic status, access to goods and services, and conformity to social values and norms. Nevertheless, males living in islands with a medium level of isolation had significantly higher wellbeing. The gender difference among older Maldivians is mediated mainly by differentials in the experiences in the life domains that are more proximal to the individual, i.e. health and social connectedness. The differences across the islands of Maldives are, however, mediated through the life domains that relate to the wider environment, especially by the effects of changing socio-cultural values in the society and the geo-spatial characteristics that affect the protection offered to older people by the collectivist social arrangements of the family and community.

7.5 Relevance of the findings for public policy in Maldives

The major constitutional reform towards democratisation in Maldives (in 2008) has led to substantial changes in the focus of public policies and the practice of public institutions (see Chapter 2). For older people, however, these reforms have been translated mainly into State funded welfare policies, suggesting that there is a predominant dependency perspective of ageing. While it is important to recognise the diminishing capabilities of older people, it is also critical to recognise their maturity and contribution to the society (Koopman-Boyden, 1984).

In Maldives, along with economic development and urbanisation, the societal perspective on care of older people is also changing, with a shift of responsibility from family to the state for the provision of living arrangements and the care of older people (Didi, 2012). Thus, public dialogue is required to adopt policy perspectives that take into account the changing social value orientations of Maldivian society. Public policy, rather than adopting a dependency perspective, needs to move towards a perspective of inter-dependency that is specific to Maldives as a SIDS.

The findings of the current research have implications for public policy, specifically in the areas of health, social connectedness, and the geographic isolation of the different islands. These are:

1. Health was the most important contributor to wellbeing (confirmed by the regression analysis); however, more than half the older people reported a 'moderate' or 'poor' level of health, especially women and those living in the most isolated islands. The findings show that the majority of older people had difficulty in accessing health care (58 per cent). It was not the affordability that was the main challenge for access to health care, but the unavailability of the service in the island of residence, requiring older people to travel to other islands for the service. The need is for health policy to focus on appropriate health service delivery to improve the health of older people, especially in the outer islands. Furthermore, the findings indicate the need to focus on health promotion programmes, prevention and occupational therapy.
2. Social connectedness is the second aspect that needs policy consideration. The current research established that social connectedness is a critical determinant of the wellbeing of older people in Maldives. As the family is extremely important for social connectedness and wellbeing, public policy needs to consider mechanisms to ensure that older people continue to be domiciled within the family. Furthermore, the additional correlation of health and social connectedness suggest that public policy should adopt a positive view of ageing that encourages the social engagement of older people with family, and with friends in the wider living environment.
3. The findings also established significant differences in wellbeing across the islands of Maldives, and indicated that the moderately populated

cluster was most conducive for the wellbeing of older people. This suggests a need for differential policies and practices for urban and rural islands. This is because in the urban, densely populated islands, despite having a higher economic standard of living, older people are constrained by the spatial aspects of housing, coupled with changing social value orientations, which result in inadequate security for older people. At the same time, as observed in other SIDS (Rawlins et al., 2008), despite living with their children, the emotionally rewarding contact is reduced as the son/daughter and his/her spouse are engaged in income earning activities, thereby limiting the time available for social interactions within the household. In the isolated rural islands, the policy challenge is to address the limited physical access to goods and services to meet basic needs that also challenge the maintenance of collectivist social institutions in these islands.

7.6 Summary of discussion

The findings support the theoretical perspective that life domains which correspond to the capabilities of the individual, and also those which relate to the wider socio-cultural and geo-spatial environment, are important in the conceptualisation of wellbeing in a SIDS context. The size of the correlations of the life domains with wellbeing also linked the life domains to the individual and to the wider environment, further consolidating the theorisation of wellbeing in this research. The findings substantiate the relevance of a multi-dimensional model of wellbeing of older people, with five life domains for a SIDS context, and establishes these life domains as having a significant impact on the wellbeing of older people in Maldives.

The life domains identified reveal important differences from those in industrialised contexts. While the most important life domain, health, shares some similarities with industrialised contexts, others are more specific to SIDS, and highlight the way life domains are related to capabilities that extend beyond the individual to the wider socio-cultural and geo-spatial environment. As such the life domains of access to goods and services, and conformity to social values and norms are specific to the Maldives context. In addition, differences were observed in the factors with life domains of economic status and social connectedness that

highlighted the importance of the extended family arrangements in a SIDS context. Unlike industrialised contexts, in Maldives, extended family arrangements provide economic security and informal remittances constitute an important source of finances that affect economic status of older people. Furthermore, the family occupies a central position in providing social connectedness through social network, social engagement and social support, signifying an important difference that may be seen as typical of SIDS.

The socio-cultural context of Maldives has been historically collectivist, with predominantly extended family norms which emphasise interdependence rather than independence. In this context, older people are more likely to expect a high social standing in the family and community, and are provided with social support and multiple opportunities for social interactions, and this is evident in the large impact of social connectedness on wellbeing. Although the small impact of economic status on wellbeing could be explained by the shifts in motivation of older people towards social rather than economic goals, in a SIDS context this is also likely to be a reflection of the extended family arrangements and the expectation on the family to provide for the financial security of older people. However, the smallness of the economies that define the developmental situation of SIDS, and the unique geo-spatial characteristics, means that basic needs for resources and service are not met in a number of islands, despite a good economic status. This results in situations where the family is not able to meet the needs of the older person, despite economic security through the old age pension and filial piety. This situation was confirmed by the significant positive impact of access to goods and services on the wellbeing of older people. The findings highlight the importance of using appropriate, context specific indicators when measuring achievement in these life domains, and taking the perspective of older people into account, to allow for the targeting of public policies to enhance their wellbeing.

Significant differences in wellbeing across the islands in Maldives exist and are at least partly explained by the geo-spatial and socio-cultural characteristics, and not merely by developmental differences. In the most isolated islands, the unmet need for basic goods and services causes the migration of family members resulting in the disruption of the extended family and the familial support mechanism that protects older people. With urbanisation, the social values and norms are changing, and the spatial constraints increasing, both of which threaten the

collectivist social arrangements, and the risk of losing informal support mechanisms for older people. The changing social value orientations and social institutions are of particular relevance for public policy in responding to population ageing in SIDS.

An overall finding of this research is that in addition to the individual characteristics, the socio-cultural and geo-spatial characteristics of SIDS affect the older person's ability to do and be what is valued that results in the particular state of (well) being. The life domains that impact the wellbeing of older people in Maldives thus extends beyond the individual to aspects of the wider environment, confirming important differences to those in industrialised contexts. The findings, therefore, support the theorisation of wellbeing using the 'capabilities' approach, that brings together perspectives of wellbeing and ageing with the developmental perspectives of SIDS. Thus, the multidimensional approach to understanding wellbeing in the research is an appropriate model and has the potential to be adopted for the study of wellbeing in other SIDS contexts, providing the basis for a SIDS specific approach to ageing.

CHAPTER 8: CONCLUSION

This research examined the wellbeing of older people, its determinants and their significance, specifically in the socio-cultural, geo-spatial and developmental context of a SIDS. This chapter returns to the research questions and the hypotheses, and provides a summary of the research methods and key findings. The contribution of this research to theory, the concepts of wellbeing and the methodological aspects of researching wellbeing of older people in a SIDS context are reflected upon, together with the recommendations for public policy in Maldives and SIDS in general. Finally, a brief discussion on the strengths and limitations of the study and areas for future research are provided.

8.1 Research focus and methods

The main purpose of the research was to identify the determinants of the wellbeing of older people (65+ years) in the context of a SIDS, by conducting a sample survey in Maldives. A second purpose was to provide evidence of the wellbeing of older people based on key indicators, to inform public discussion and policy development in Maldives. Related to this, the research aimed to propose a set of indicators that can be used in Maldives, and other SIDS more generally, to monitor the future wellbeing of older people in these contexts.

Specifically, the research focused on questions that would identify:

1. The important determinants of the wellbeing of older people, particularly the life domains specific to SIDS contexts
2. The importance of social connectedness for the wellbeing of older people in SIDS where, although the society is collectivist, the population is geo-spatially dispersed, and especially, the role of the family in social connectedness in SIDS contexts
3. The effect of geographic isolation of island communities on the wellbeing of older people, including the socio-cultural and geo-spatial characteristics of the wider environment of the islands that affect the wellbeing of older people.

Wellbeing was conceptualised using the capabilities approach that holds that it is the ability of the individual to achieve valued functioning that determines

wellbeing (Sen, 1993). Furthermore, these valued functionings are socio-culturally determined and the ability to be and do what is important for wellbeing varies based on interpersonal and wider environmental context (Sen, 1999). Hence the capabilities not only constitute the existing state of being, but the opportunities to achieve the goals valued by the individual (Sen, 1993; Robeyns, 2011). Wellbeing was theorised by integrating the capabilities approach to wellbeing with the view of ageing as an active process of adaptation and selectivity, linked with the ecological perspective of development that acknowledges the importance of environmental characteristics. The capabilities for the wellbeing of older people in a SIDS context was conceptualised around life domains that constitute areas of valued functioning. These life domains not only reflected the capabilities of the individual but also the capabilities that are available in the wider environment – a key difference in the application of the capabilities approach from that in industrialised contexts.

A multi-dimensional conceptual model of the wellbeing of older people specific to the SIDS context was developed and empirically tested in a survey in Maldives. Although primarily quantitative, a pragmatic approach using a mix of methods was adopted (Hanson et al., 2005; Johnson & Onwuegbuzie, 2004). The concepts and research instruments were informed at the outset through a comprehensive review of international research on wellbeing, ageing and development supplemented by stakeholder consultations to explore critical dimensions and indicators of wellbeing specific to a SIDS context. A cross-sectional survey was conducted, with a sample of 393 people aged 65+ years in Maldives that allowed the empirical measurement and verification of conceptual model and hypotheses (Clark, 2010; Creswell, 2013). Statistical analysis was conducted and hypotheses were tested, specific to the variables conceptualised in the proposed model of wellbeing.

The hypothesis tested the relationships of the subjective and objective measures of the life domains with wellbeing. The correlations, direction and size of the correlations, and the cumulative contribution of the five life domains to wellbeing was tested. In addition, the life domains as indicators of wellbeing were tested using regression analysis. The significance of the differences by gender and

geographic isolation of the islands were also tested. (See Chapter 3 for specific hypotheses).

8.2 Key findings

The five life domains (health, social connectedness, economic status, access to goods and services, and conformity to social values and norms) around which the set of capabilities for wellbeing was conceptualised were verified as important predictors of the wellbeing of older people in the SIDS context. The significant association of the life domains with wellbeing (with the exception of conformity to social values and norms) was established.

The measures used made a significant difference to the results obtained and highlighted the importance of using context-specific measures in operationalising research in a SIDS context. The subjective measures of the life domains showed larger contributions to wellbeing, possibly reflecting the psychological process involved in the assessment of future opportunities for providing capabilities through the life domain. Objective measures, although showing smaller contributions, provided a clear understanding of the factors within each of the life domains and of the variations within the life domains that were distinctive to the Maldives context. The findings identified important differences in the determinants of wellbeing in the SIDS context compared with industrialised contexts.

The findings further validated the wider application of the capabilities approach to go beyond the capabilities of the individual, to take account of the socio-cultural and geo-spatial characteristics in the wider environment. The significance of the life domains related to the capabilities of the wider environment are of special relevance to the unique context of SIDS as the relationship established the importance of the socio-cultural, and geo-spatial characteristics for the wellbeing of older people. Such capabilities are often overlooked in conceptualisations of wellbeing in industrialised country contexts.

The research thus established that the wellbeing of older people in SIDS, and specifically Maldives, was the sum of many experiences in several life domains that correspond to the capabilities of the individual as well as those of the

environment, which are influenced by the socio-cultural and geo-spatial characteristics distinctive to the context of SIDS.

In Maldives the majority of the older people were found to have a ‘high’ level of wellbeing, yet women had lower levels of wellbeing reflecting poorer experiences in health and social connectedness. Significant differences across the differentially populated islands were observed, and they appear to be a reflection of the access to goods and services and the changing social values and norms in Maldivian society. Some suggestions for public policy focussed on the most important determinants of wellbeing are put forward in section 8.3.3.

8.3 Contributions of the research

The research has made a number of contributions to advancing knowledge about the needs of ageing populations in Maldives and, more broadly, SIDS contexts, and to the related theory and methods of research, while also contributing to policy and practice.

8.3.1 Contribution to knowledge and theory

The research has established the five key life domains as determinants of the wellbeing of older people in Maldives, thus extending existing research and filling some gaps in related scholarship. Furthermore, a more appropriate theoretical perspective on the wellbeing of older people in the SIDS context is provided by integrating selected perspectives on wellbeing and ageing within the developmental perspectives of SIDS. The theorisation as to what is valued by older people in a SIDS context and the capabilities for fulfilling their needs, engaging with others, and interacting with the environment was found to be different to those in an industrialised context. The research therefore recognises the value of tying in different theoretical perspectives on wellbeing, ageing and development, which is also an important contribution to furthering the understanding of wellbeing as a construct, and to the complexity of theorising wellbeing.

The theorisation that the wellbeing of older people is determined not only through individual capability sets but also through the capability sets related to the socio-cultural and geo-spatial characteristics of the wider environment in SIDS context is novel in the application of the capabilities approach. The multi-dimensional

model of the wellbeing of older people using the five life domains that relate to the individual capabilities and to the wider environment in the conceptualisation of wellbeing is of specific relevance to SIDS. In particular, the finding that the life domains related to the wider environment (economic status, access to goods and services, and social values and norms) provide direct contributions to wellbeing is distinctive to the SIDS context. Also, the differences in the roles of family and friends in providing the capabilities through social connectedness highlighted the importance of deconstructing the factors that constitute life domains in different contexts. The conceptual model is thus an appropriate original contribution to studying wellbeing in the SIDS context and possibly in other developing countries.

The use of both objective and subjective indicators to demonstrate the contribution of the life domains to wellbeing is also an important contribution of the current research. The present research established that objective circumstances have a direct relationship with wellbeing and that the use of objective measures constructed specifically to suit the context are more effective in understanding the relationships. In addition, this study also established that in testing the relationship of the life domains with wellbeing, it is appropriate to use both objective and subjective measures to identify the relationships of the current and possible circumstances.

8.3.2 Contributions to methods

Although predominantly a quantitative study, the scarcity of literature on ageing in Maldives, and more broadly SIDS, led to the adoption of a mix of research methods. The current research demonstrated the use of a qualitative approach involving stakeholder consultations to be an effective method in the early stages of quantitative research, to identify the relevance of the conceptualisation of the research topic, the research instruments, and also the research methods.

The research also established the value of a life history approach through examination of the past life circumstances of the current cohort of older people in Maldives. This approach provided insight for explaining the current behaviour of older people and their experiences in the life domains within the political, economic and social context of Maldivian society.

The use of ‘messengers’ to reach and recruit participants for the research was an original contribution. This method is especially valuable in contexts where the target population is widely dispersed and the logistics are expensive, as was the case in Maldives where the research was operationalised. The messenger approach was successful in that a high proportion of the target population was recruited and this resulted in a high response rate. Details of this method of recruitment of participants for survey research have now been published (Moosa & Koopman-Boyden, 2015).

Another methodological contribution was the use of telephone survey to collect data from participants in Maldives. Telephone surveys have not been used in Maldives for social survey research. The high response rate in the current research demonstrates the effectiveness of telephone surveys as a low cost method for data collection in SIDS, especially where transport costs are very high.

An important methodological contribution was the development of special measures for some of the indicators used in the current research. Scales were developed to measure social connectedness, conformity to social values and norms, and access to goods and services. The significant results of the correlation and regression statistics further suggest that the use of these measures reflect the realities of the SIDS context. They are, thus, likely to be more appropriate for assessing the wellbeing of older people in SIDS than measures developed in industrialised contexts and used internationally. However, it is acknowledged that these measures need further improvement through additional research.

8.3.3 Contributions to policy development in Maldives and SIDS

The current direction of policy and practices towards the ageing population in the Maldivian context is somewhat worrying in that it reinforces the dependency perspective, with its main focus on welfare schemes such as pension and social health insurance (discussed in Chapter 2). The findings, however, highlighted the need to view ageing from an ecological perspective which sees ageing as an active process where older people interact with the environment and engage in society. This is especially important as the need for social connectedness is not specifically addressed in public policy in Maldives.

The public policy philosophy in Maldives appears to contain a default perspective of ageing-in-place but without government support, and totally relies on support from the family and informal social institutions. However, the inclusion of strategies for the empowerment of older people in Maldives Healthy Ageing Strategy (see Chapter 2) suggests that there is an opportunity to involve policy makers and other stakeholders with an interest in the wellbeing of older people in developing policies and programmes that improve their health and social connectedness. Given the expected ageing of the population in the coming decades, and the findings of the current research, some policy options to enhance the wellbeing of older people in Maldives specifically related to finance and the pension, health and social connectedness are suggested below.

8.3.3.1 Finance and the pension

As is evident from the findings, the universal nature of the old-age pension is expected to engender positive ageing experiences by maintaining a good economic status for the older person and the household. The policy can be considered to have a dual effect in that the pension income establishes a sense of reciprocity within the household: it simultaneously contributes to the household while the older person has social contact and support from the family. Furthermore, it has been observed in countries such as New Zealand that the universal provision of an old-age pension can facilitate continued engagement of older people in society through paid or voluntary work, thus boosting their standard of living and integration in the society (Koopman-Boyden, Cameron, Davey, & Richardson, 2014).

However, there are several concerns related to income distribution among older people. Given the parallel retirement pension scheme in Maldives (with contributions from paid employment), there is concern for the sustainability of the old-age pension system, and also the possibility of widening the gap between the paid and unpaid/informal workers among retired older people. Also, the mandatory retirement age in the civil service acts as a barrier to those older people who are capable of continuing workforce participation. Alternatively, some countries have removed the retirement age limit which has enabled an increasing number of older people to be economically productive members of the society (Guest, 2013).

A related finding of specific relevance to Maldives is that for older people, it is not only the financial means, but also access to goods and services that is critical for wellbeing. The emerging focus of public policy for older people on the provision of financial support (as in pension programmes) are, thus, unlikely to produce the desired positive effect on the wellbeing of older people. This is because such welfare policies are developed in industrialised countries under neo-liberal ideologies and base the policy on the premise that if people have money they can buy the services they need, which is not the reality in SIDS. On the contrary, as has been discussed earlier, due to the geo-spatial characteristics physical access to goods and services poses a significant challenge for older people, although they are financially protected by the pension and informal remittances from family.

Hence, in order to enhance the wellbeing of older people in Maldives, attention needs to be given to:

- sustaining the universality of the basic old-age pension by identifying alternative paths to financing the scheme such as through general tax contributions
- removing the mandatory retirement age in the civil service
- expanding physical access to basic goods and services through community outreach and technological means.

8.3.3.2 Health care and health promotion

Current health policies in Maldives are geared towards ensuring the individual affordability of health care, but as noted earlier, the social health insurance scheme is under financial strain. The Healthy Ageing Strategy of the Maldives outlines the need to strengthen primary care and promote active ageing, which is likely to reduce in the strain on the social health insurance scheme (see Chapter 2). However, in the context of Maldives there is a scarcity of health care professionals, with implications for the quality of care and prevention services provided (Ministry of Health, 2013b). The slow implementation of the Healthy Ageing Strategy indicates the need for stronger advocacy and lobbying to focus policy maker's attention on providing such support for older people.

With reference to primary health care, the 'ageing in place' experience from New Zealand (Davey, 2006; Ministry of Health, 2002) can be drawn on and adapted to

the Maldives context. As the older people in Maldives live in extended family arrangements, provision of community-based services such as nursing and rehabilitation support for bedridden older people, and providing advice on nutrition, physical activity and falls prevention to family members is quite possible. Public health gains have already been achieved when community-based health interventions have been implemented in Maldives (Khaleel, 2001).

At an individual level, an idea that can be borrowed from industrialised societies in terms of care for older people is the personal medical alarm and social alarm (Koopman-Boyden et al., 2014). This could be an important contribution to timely medical care and support, especially in situations where older people are left alone during the day while their kin are at work.

Policy options outlined in the Healthy Ageing Strategy address important areas for enhancing the wellbeing of older people in Maldives, but there is a need to gain support for the strategy's implementation. Some strategies which highlight the importance of health action are:

- undertake an analysis of cost-savings from health promotion interventions for older people
- develop and pilot action research projects on the feasibility and effectiveness of community-based outreach nursing and rehabilitation support in different island contexts
- work with stakeholder groups and/or conduct market research to identify public opinion on the use of medical and social alarms.

8.3.3.3 Social connectedness

At present, social connectedness is not specifically addressed in any of the public policies in Maldives, but family structures and widespread access to telecommunication services allows frequent social contact, especially with family members. As discovered by the current research, in addition to family and friends, health, economic status, and the social values and norms of the society affect social connectedness, and these factors should be included in policies.

Given the different geo-spatial and developmental context of Maldives, the policy experiences of other countries are not necessarily applicable. For example, as there are no organised voluntary services or clubs in Maldives (except for

Maldives Red Crescent in 2009), there are no opportunities for social engagement through volunteering. The research findings showed that engagement in community social activity was very low among the older people in Maldives and is perhaps due to the non-availability of such opportunities. Policy options to promote social connectedness in Maldives should focus on maintaining the central role of the family while encouraging social engagement with friends and neighbours, and promoting desired social values and norms in the community. Policies and practices that can enhance social connectedness include:

- enriching families with positive attitudes towards ageing and older people (through education programmes), and recognising reciprocity of support within households
- providing opportunities for social engagement with friends through walking groups or meeting places in the community (as provided for young people)
- developing and testing the effectiveness of a context-specific ‘social visit service’ to families with older people (involving older people as volunteers) in a selected set of islands
- establishing inter-generational action to reduce gaps in desired social values and norms in the Maldivian society. Such actions could be through mentoring programmes in sports, arts and home-craft which could also be linked to skill exchange where the younger generation also have the opportunity to transfer technology skills to older people
- establishing initiatives that recognise older people’s wisdom, their achievements and expertise tied to a rewards programme that recognises their contribution to the society
- expanding the home visits programme by the AgedCare Maldives (the only non-government organisation working with older people) to include social interaction. Such social visits have been particularly successful in a number of developed countries including reaching minority ethnic groups (Andrews, Gavin, Begley, & Brodie, 2003; Cattan, White, Bond, & Learmouth, 2005).

The research identified that the life domains of health and social connectedness (with family taking a central role) made the biggest impacts on wellbeing. But with the development transitions currently taking place in Maldives, there is

considerable disruption in the collectivist social arrangements. However, since many of the geo-spatial characteristics of Maldives and other SIDS are not able to be changed, there needs to be a SIDS-specific approach to population ageing that focuses on physical access facilitating health and social connectedness. Policy developers in SIDS are thus advised to carefully examine the principles on which development of their welfare policies (such as pension support) are based, and rather than provide only direct monetary support, focus more on ensuring physical access to goods and services.

The research also established the importance of a specific set of indicators for monitoring the wellbeing of older people in SIDS. It is recommended that research continue to monitor older people's wellbeing and its determinants, and maintain up-to-date information to inform policy and prioritisation of interventions in Maldives and other SIDS.

8.3.4 Indicators for monitoring the wellbeing of older people in SIDS

The need to monitor the situation of population ageing and older people's wellbeing is essential from a public policy perspective as well as a developmental perspective. Therefore, the research provides a set of indicators is provided for the consideration of public policy makers in Maldives and other SIDS.

A large number of indicator sets on population ageing and older people's life circumstances exist internationally. The most prominent of these are the 'Madrid Indicators' of the United Nations, following the adoption of the Madrid International Plan of Action on Ageing (MIPAA) in 2002 (Office of the Auditor General, 2013; United Nations, 2013b). While these indicators are useful for monitoring population ageing at a global level, they do not capture the unique aspects of SIDS that affect the wellbeing of older people, nor the development of public policy and practices at country level in SIDS. Thus, in the recent discussion of the post-2015 sustainable development goals it was determined that the indicators for SIDS should go "beyond GDP" measures (United Nations, 2013a, p. 14). Parallel to this development, it has been suggested that countries and regions should develop their own set of indicators relevant to their context, to monitor the wellbeing of their ageing populations (Ministry of Social and Family Development, 2014; Ministry of Social Development, 2007). It is hoped that

future meetings at global level consider specific indicators for SIDS, as proposed here.

Table 8.1: Suggested list of indicators for monitoring wellbeing of older people in SIDS

WELLBEING
1. Overall Satisfaction with life
HEALTH
2. Self-rated level of health
3. Satisfaction with health status
4. Access to health care
5. Coverage of older people with a form of health expenditure security (e.g. Health insurance)
6. Out-of pocket health expenditure from households with older people
SOCIAL CONNECTEDNESS
7. Living arrangement (with family or other arrangement)
8. Satisfaction with living arrangement
9. Access to social support from family
10. Social engagement (with family and friends)
11. Composition of close social network (family and friends)
12. Level of social connectedness (with family and friends)
13. Satisfaction with the overall social connectedness (with family, friends and community)
ECONOMIC STATUS
14. Level of economic status
15. Satisfaction with economic standard of living
16. Engagement in work (paid and unpaid)
17. Coverage of older people with a form of income security (e.g. Old-age pension)
ACCESS TO GOODS AND SERVICES
18. Affordability of essential goods (housing, personal goods, health care goods)
19. Access to communication technologies (telephone & internet use)
20. Access to a form of transport to other islands (land, sea, air)
21. Level of overall access to goods and services
22. Satisfaction with access to goods and services
CONFORMITY TO SOCIAL VALUES AND NORMS
23. Level of harmony values in the community (trust, altruism)
24. Level of embeddedness values in the community (respect and care for older people)
25. Level of conformity to social values and norms (in the community)
26. Satisfaction with community's conformity to social values and norms
STRUCTURAL / DEMOGRAPHIC
27. Life expectancy at age 65 years
28. Old-age support ratio
29. Old-age sex ratio
30. Proportion of older people living in areas of different developmental status (urban, semi-urban and rural areas or as defined nationally).

Table 8.1 lists the core indicators suggested for monitoring the wellbeing of older people in Maldives. These have been selected from the sources discussed above for SIDS, based on the findings of the current research in Maldives. The indicators relate to life domains conceptualised in a multidimensional model of wellbeing and capture the unique socio-cultural, economic and geo-spatial aspects of SIDS identified in the current research.

It is anticipated that this set of indicators would be a useful tool with which to monitor the wellbeing of older people, not only in Maldives but also other SIDS.

They would be supplemented with other indicators of demographic and developmental structural aspects relevant to the SIDS, and informed by internationally used indicators and stakeholder consultations.

A key difference in the suggested indicators, in contrast to those used globally, is that they represent important aspects from the perspectives of older people themselves and within a positive ageing approach. The indicators highlight aspects of family and collective society that were identified as important factors for the wellbeing of older people in the present study. It is anticipated that information on these indicators will stimulate public discussion on improvements in policies for enhancing the wellbeing of older people in line with other changes in the society of Maldives.

It is recommended that the data be collected and stored in a way that enables aggregation and disaggregation into various groups as there could be significant differences in these indicators by gender, age category or residential locality.

The suggested indicators for monitoring the wellbeing of older people is an important contribution, not only for Maldives but for other SIDS and international developmental partners. The list is expected to provide information on the life circumstances from the older person's perspective relevant to the socio-cultural and developmental contexts of SIDS. This core indicator set is timely in that population ageing is accelerating in several SIDS while there is growing interest in wellbeing as a development goal among international development partners. Future researchers interested in SIDS and wellbeing are urged to utilise these indicators and measures to further establish their relevance as an appropriate tool in these contexts.

8.4 Strengths and limitations

The strength of the current research lies mainly in its context. When it was conducted, research in the context of SIDS was scarce. Specifically, older people's wellbeing in the SIDS context has received minimal attention from researchers and policy makers, perhaps because despite their vulnerability, this population cohort occupies a relatively small proportion in the SIDS compared to young population. The key strengths of the current research are the contributions to knowledge and theory, to methods and to policy that have been noted earlier. In

addition to these contributions, another strength of this research is its relevance beyond Maldives to other SIDS and to international development institutions.

The findings of the current research must be interpreted within a number of limitations. First, given the complexities associated with the study of wellbeing, the conceptual model adopted in this research could be described as reductionist as it includes only five life domains. As such, there are likely to be other determinants of wellbeing that can be conceptualised as life domains. For instance, while it was theorised that wellbeing is determined by the fulfilment of emotionally rewarding goals, psychological determinants operating at a personal level were not included, being considered beyond the scope of this research. The possibility of omitted predictors means that the importance of the contribution by each life domain can only be a general guide and not absolute. Furthermore, the number of factors that constituted the objective measures were varied for different life domains, thereby creating a statistical weighting problem, which makes direct comparisons of the variance problematic.

The second limitation relates to the measures used for wellbeing and the associated indicators. Due to the absence of, or unsuitability of, existing validated measures, new measures for some indicators were developed for this research. For example, individual items from different studies were used to form the scales on social connectedness, access to good and services, and social values and norms. It was observed during the course of the research, due to the collectivist nature of Maldivian society, that the close-knit island population and extended family households made the measurement of social connectedness quite intricate. Although confirmatory factor analysis and internal reliability tests were conducted on the measures, these will need to be validated before they are used in other SIDS.

The third limitation relates to the sampling and recruitment of participants. While efforts were made to ensure adequate representation of older people from different island contexts in the sample, due to the diversity of the islands in Maldives, there is the possibility that all varieties of some island contexts were not included in the sample. Furthermore, older people who were not able to communicate through the telephone were excluded, which could have introduced some selection bias towards older people who were more capable and held a positive outlook.

A fourth limitation is that due to the cross sectional nature of the study, it was not possible to establish the direction or rule out bi-directionality of the association of the life domains with wellbeing.

Finally, the lack of research on the new areas included in this research was a major drawback while interpreting the findings. Hence, the explanations are speculative in some instances, based on the personal experience of the researcher in the research context, having lived and worked (as a medical doctor) in Maldives most of the researcher's life.

8.5 Future research

With the ageing of many SIDS populations and the projected increase in older people (aged 65+ years) in SIDS, there is a critical need for research on wellbeing and its determinants. The current research theorised the wellbeing of older people in the SIDS context as being different to that in industrialised contexts. Since the theoretical framework and the conceptual model adopted in the research is novel, it needs further verification in other SIDS. Additional research using this conceptualisation will contribute to the development of a validated model to study the wellbeing of older people specific to the SIDS context.

Given the importance of social connectedness for the wellbeing of older people in the current research, this is an area that needs further research in more countries of SIDS focusing on the roles of family and friends. Importantly, the effect of changing social values and norms on the older residents in island countries needs further investigation, given the significant correlation with wellbeing and the strong correlation of the social values and norms with social connectedness observed in the current research.

The emergence of welfare states in SIDS in response to population ageing is another area of future research, focussing on the effects new state policies have on the wellbeing of older people. This is important as emerging welfare policies, including pensions, appear to be duplicated from industrialised contexts, and, as this research indicates, may not be as effective in SIDS since monetary benefits do not guarantee physical access to goods and services.

Monitoring the wellbeing of older people in SIDS will require population-based research using a core set of indicators, as proposed in this thesis. Use of a

common set of indicators to research the wellbeing of older people in SIDS will not only guide policy and practice at the country level, but also allow for comparison among SIDS of their distinctive socio-cultural, geo-spatial and developmental status.

Finally, the continued interest in population wellbeing in development policy implies the need for further research on the wellbeing of the general population among SIDS. This is important as SIDS represent a unique developmental situation with geo-spatial challenges for access to a variety of social and economic resources. Such investigations can be built on the findings of the current research, extending to the general population. Therefore, researching wellbeing of the general population in SIDS will enable benchmarking and comparison of the indicators of wellbeing of older people to that of the general population.

8.6 Conclusion

The current research determined the level and the important determinants of the wellbeing of older people in a SIDS context, Maldives. It underscored the theoretical perspective that valued functioning and the capabilities for wellbeing are different in contexts of SIDS compared with industrialised country contexts, specifically for older people. The current research with its empirical study in Maldives piloted a model of wellbeing unique to the socio-cultural and geo-spatial context of SIDS. While it extends knowledge, it also contributes to methods and public policy that have relevance to several SIDS. Finally, the need for further research on wellbeing is highlighted, not only among older people, but also among the general population in the SIDS.

REFERENCES

- Andrews, G. J., Gavin, N., Begley, S., & Brodie, D. (2003). Assisting friendships, combating loneliness: Users' views on a 'befriending' scheme. *Ageing & Society*, 23(03), 349-362. <http://dx.doi.org/10.1017/S0144686X03001156>.
- Angus, J., & Reeve, P. (2006). Ageism: A threat to "Aging Well" in the 21st Century. *Journal of Applied Gerontology*, 25(2), 137-152. <http://dx.doi.org/10.1177/0733464805285745>.
- Argyle, M. (1999). Causes and correlates of happiness. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Wellbeing: The foundations of hedonic psychology* (pp. 353-373). New York, NY: Russell Sage Foundation.
- Ashida, S., & Heaney, C. A. (2008). Differential associations of social support and social connectedness with structural features of social networks and the health status of older adults. *Journal of Aging and Health*, 20(7), 872-893. <http://dx.doi.org/10.1177/0898264308324626>.
- Atchley, R. C. (1989). A continuity theory of normal aging. *The Gerontologist*, 29(2), 183-190. <http://dx.doi.org/10.1093/geront/29.2.183>.
- Atchley, R. C. (1999). *Continuity and adaptation in ageing: Creating positive experiences*. Baltimore, MD: The John Hopkins University.
- Babbie, E. (2004). *The practice of social research*. Belmont, CA: Wadsworth.
- Bailey, T. C., & Snyder, C. R. (2007). Satisfaction with life and hope: A look at age and marital status. *Psychological Record*, 57(2), 233-240.
- Baker, M., Stabile, M., & Deri, C. (2004). What do self-reported, objective, measures of health measure? *Journal of Human Resources*, 39(4), 1067-1093.
- Baltes, P. B., & Smith, J. (1997). A systemic-wholistic view of psychological functioning in very old age: Introduction to a collection of articles from the Berlin aging study. *Psychology and Aging*, 12(3), 395-409. <http://dx.doi.org/10.1037/0882-7974.12.3.395>.
- Beekman, A. T. F., Penninx, B. W. J. H., Deeg, D. J. H., Ormel, J., Braam, A. W., & van Tilburg, W. (1997). Depression and physical health in later life: Results from the Longitudinal Aging Study Amsterdam (LASA). *Journal of Affective Disorders*, 46(3), 219-231. [http://dx.doi.org/10.1016/s0165-0327\(97\)00145-6](http://dx.doi.org/10.1016/s0165-0327(97)00145-6).
- Bengtson, V. L., Rice, C. J., & Johnson, M. L. (1999). Are theories of aging important? Models and explanations in gerontology at the turn of the century. In V. L. Bengtson & K. W. Schai (Eds.), *Handbook of theories of aging* (pp. 3-20). New York, NY: Springer.

Berg, A. I., Hassing, L. B., McClearn, G. E., & Johansson, B. (2006). What matters for life satisfaction in the oldest-old? *Aging & Mental Health*, 10(3), 257-264. <http://dx.doi.org/10.1080/13607860500409435>.

Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science & Medicine*, 51(6), 843-857. [http://dx.doi.org/10.1016/s0277-9536\(00\)00065-4](http://dx.doi.org/10.1016/s0277-9536(00)00065-4).

Berkman, L. F., & Glass, T. A. (2000). Social integration, social networks, social support and health. In L. F. B. I. Kawachi (Ed.), *Social epidemiology* (pp. 137-173). New York, NY: Oxford University.

Best, C. J., Cummins, R. A., & Lo, S. K. (2000). The quality of rural and metropolitan life. *Australian Journal of Psychology*, 52(2), 69-74. <http://dx.doi.org/10.1080/00049530008255370>.

Bird, K., McKay, A., & Shinyekwa, I. (2010). *Isolation and poverty (ODI Working Paper 322, CPRC Working Paper 162)*. London, UK: Chronic poverty Research Centre and Overseas Development Institute.

Blanchflower, D. G., & Oswald, A. J. (2008). Is well-being U-shaped over the life cycle? *Social Science & Medicine*, 66(8), 1733-1749. <http://dx.doi.org/10.1016/j.socscimed.2008.01.030>.

Bond, J., & Corner, L. (2004). *Quality of life and older people*. Berkshire, UK: McGraw-Hill Education.

Bound, J. (1989). *Self-reported vs. objective measures of health in retirement models*. NBER working paper series (No. w2997). Cambridge, MA: National Bureau of Economic Research.

Börsch-Supan, A., Hank, K., & Jürges, H. (2005). A new comprehensive and international view on ageing: Introducing the 'Survey of Health, Ageing and Retirement in Europe'. *European Journal of Ageing*, 2(4), 245-253. <http://dx.doi.org/10.1007/s10433-005-0014-9>.

Bourne, P. A., Eldemire-Shearer, D., McGrowder, D., & Crawford, T. (2009). Examining health status of women in rural, peri-urban and urban areas in Jamaica. *North American Journal of Medical Sciences*, 1(5), 256-271. <http://dx.doi.org/10.4297/najms.2009.5256>.

Bourne, P. A., & McGrowder, D. A. (2010). Socio-demographic determinants of health status of elderly with self-reported diagnosed chronic medical conditions in Jamaica. *Health*, 2(02), 101-111.

Bowling, A., Farquhar, M., Grundy, E., & Formby, J. (1993). Changes in life satisfaction over a two and a half year period among very elderly people living in London. *Social Science & Medicine*, 36(5), 641-655. [http://dx.doi.org/10.1016/0277-9536\(93\)90061-8](http://dx.doi.org/10.1016/0277-9536(93)90061-8).

Brazier, J. E., & Roberts, J. (2004). The estimation of a preference-based measure of health from the SF-12. *Medical Care*, 42(9), 851-859.

Briguglio, L. (1995). Small Island Developing States and their economic vulnerabilities. *World Development*, 23(9), 1615-1632.
[http://dx.doi.org/10.1016/0305-750X\(95\)00065-K](http://dx.doi.org/10.1016/0305-750X(95)00065-K).

Briguglio, L. (2003, September). *The vulnerability index and Small Island Developing States: A review of conceptual and methodological issues*. Paper presented at the AIMS regional preparatory meeting on the ten year review of the Barbados Programme of Action, Praia, Cape Verde.

Brown, P. H., & Tierney, B. (2009). Religion and subjective well-being among the elderly in China. *Journal of Socio-Economics*, 38(2), 310-319.
<http://dx.doi.org/10.1016/j.socec.2008.07.014>.

Bryman, A. (2001). *Social research methods*. Oxford, UK: Oxford University.

Bultena, G. L. (1969). Rural urban differences in the familial interaction of the aged. *Rural Sociology*, 34(1), 5-15.

Burholt, V., & Windle, G. (2006). *The material resources and well-being of older people*. York, UK: Joseph Rowntree Foundation York.

Cambridge University Press. (2011). *Cambridge dictionaries online*. Retrieved from Cambridge University Press <http://dictionary.cambridge.org/>.

Camfield, L., Choudhury, K., & Devine, J. (2009). Well-being, happiness and why relationships matter: Evidence from Bangladesh. *Journal of Happiness Studies*, 10(1), 71-91. <http://dx.doi.org/10.1007/s10902-007-9062-5>.

Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). *American life: Perceptions, evaluations and satisfactions*. New York, NY: Russell Sage Foundation.

Carstensen, L. L. (1992). Social and emotional patterns in adulthood: Support for socioemotional selectivity theory. *Psychology and Aging*, 7(3), 331-338.

Carstensen, L. L., Fung, H. H., & Charles, S. T. (2003). Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion*, 27(2), 103-123.
<http://dx.doi.org/10.1023/a:1024569803230>.

Cattan, M., White, M., Bond, J., & Learmouth, A. (2005). Preventing social isolation and loneliness among older people: A systematic review of health promotion interventions. *Ageing & Society*, 25(01), 41-67.
doi:10.1017/S0144686X04002594.

Chan, A. (2001). *Singapore's changing structure and the policy implications for financial security, employment, living arrangements and health care* (Asian

- Metacentre Research Series no.3). Retrieved from http://www.populationasia.org/Publications/Research_Papers.htm.
- Chan, A., Ofstedal, M. B., & Hermalin, A. I. (2002). Changes in subjective and objective measures of economic well-being and their interrelationship among the elderly in Singapore and Taiwan. *Social Indicators Research*, 57(3), 263-300. <http://dx.doi.org/10.1023/a:1014787712820>.
- Clark, A. E., Frijters, P., & Shields, M. A. (2008). Relative income, happiness, and utility: An explanation for the Easterlin paradox and other puzzles. *Journal of Economic Literature*, 46(1), 95-144. <http://dx.doi.org/10.1257/jel.46.1.95>.
- Clark, A. E., Westergård-Nielsen, N., & Kristensen, N. (2009). Economic satisfaction and income rank in small neighbourhoods. *Journal of the European Economic Association*, 7(2/3), 519-527.
- Clark, D. A., & Gough, I. (2005). Capabilities, needs and wellbeing: Relating the universal and the local. In L. Manderson (Ed.), *Rethinking wellbeing: Essays on health, disability and disadvantage* (pp. 45-68). Perth, Australia: API Network, Australia Research Institute, Curtin University of Technology.
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7(3), 309-319. <http://dx.doi.org/10.1037/1040-3590.7.3.309>.
- Clark, M., & Anderson, B. (1967). *Culture and aging*. Springfield, IL: Charles C Thomas.
- Clark, V. L. P. (2010). The adoption and practice of mixed methods: U.S. trends in federally funded health-related research. *Qualitative Inquiry*, 16(6), 428-440. <http://dx.doi.org/10.1177/1077800410364609>.
- Clarke, P. J., Marshall, V. W., Ryff, C. D., & Rosenthal, C. J. (2000). Wellbeing in Canadian seniors: Findings from the Canadian study of health and aging. *Canadian Journal on Aging*, 19(2), 139-159.
- Climate Change Secretariat. (2005). *Climate change: Small Island Developing States*. Bonn, Germany: United Nations Framework Convention on Climate Change, United Nations.
- Cloos, P., Allen, C. F., Alvarado, B. E., Zunzunegui, M. V., Simon, D. T., & Eldermire-Shearer, D. (2010). Active ageing: A qualitative study in six Caribbean countries. *Ageing & Society*, 30(01), 79-101. <http://dx.doi.org/10.1017/S0144686X09990286>.
- Coast, E., Hampshire, K., & Randall, S. (2007). Disciplining anthropological demography. *Demographic Research*, 16(1), 493-518.

Cohen, A. G. (1993). Equality of what? On welfare, goods and capabilities. In M. C. Nussbaum & A. Sen (Eds.), *The quality of life* (pp. 9-29). New York, NY: Oxford University.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Earlbaum.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. (3rd ed.). New York, NY: Routledge.

Collins, K. M., Onwuegbuzie, A. J., & Sutton, I. L. (2006). A model incorporating the rationale and purpose for conducting mixed methods research in special education and beyond. *Learning Disabilities: A Contemporary Journal*, 4(1), 67-100.

Connell, J., & Conway, D. (2000). Migration and remittances in island microstates: A comparative perspective on the South Pacific and the Caribbean. *International Journal of Urban and Regional Research*, 24(1), 52-78.

Cornwell, B., Laumann, E. O., & Schumm, L. P. (2008). The social connectedness of older adults: A national profile. *American Sociological Review*, 73(2), 185-203.

Cornwell, E. Y., & Waite, L. J. (2009). Measuring social isolation among older adults using multiple indicators from the NSHAP study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 64B(suppl 1), i38-i46. <http://dx.doi.org/10.1093/geronb/gbp037>.

Cramm, J. M., van Dijk, H. M., & Nieboer, A. P. (2013). The importance of neighborhood social cohesion and social capital for the wellbeing of older adults in the community. *The Gerontologist*, 53(1), 142-152. <http://dx.doi.org/10.1093/geront/gns052>.

Creative Research Systems. (2010). *The survey system: Sample size formulas for our sample size calculator*. Retrieved from <http://www.surveysystem.com/sample-size-formula.htm>.

Creswell, J. W. (1994). *Research design: Qualitative and quantitative approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage.

Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124-130. <http://dx.doi.org/10.2307/1477543>.

- Cumming, E., Dean, L. R., Newell, D. S., & McCaffrey, I. (1960). Disengagement: A tentative theory of aging. *Sociometry*, 23(1), 23-35. <http://dx.doi.org/10.2307/2786135>.
- Cumming, E., & Henry, W. E. (1961). *Growing old, the process of disengagement*. New York, NY: Basic Books.
- Cummins, R. A. (1996). The domains of life satisfaction: An attempt to order chaos. *Social Indicators Research*, 38(3), 303-328. . <http://dx.doi.org/10.1007/bf00292050>.
- Cummins, R. A. (2000a). Objective and subjective quality of life: An interactive model. *Social Indicators Research*, 52(1), 55-72. . <http://dx.doi.org/10.1023/a:1007027822521>.
- Cummins, R. A. (2000b). Personal income and subjective well-being: A review. *Journal of Happiness Studies*, 1(2), 133-158. <http://dx.doi.org/10.1023/a:1010079728426>.
- Cummins, R. A., Eckersley, R., Pallant, J., van Vugt, J., & Misajon, R. A. (2003). Developing a national index of subjective wellbeing: The Australian unity wellbeing index. *Social Indicators Research*, 64(2), 159-190. <http://dx.doi.org/10.1023/a:1024704320683>.
- Cummins, R. A., & Lau, A. L. D. (2005). *Personal wellbeing index: School children* (3rd ed.). Melbourne, Australia: School of Psychology, Deakin University.
- DaVanzo, J., & Chan, A. (1994). Living arrangements of older Malaysians: Who coresides with their adult children? *Demography*, 31(1), 95-113.
- Davey, J. (2006). Ageing in Place: The views of older homeowners on maintenance, renovation and adaptation. *Social Policy Journal of New Zealand*, 27, 128.
- Davis, S., & Bartlett, H. (2008). Healthy ageing in rural Australia: Issues and challenges. *Australasian Journal on Ageing*, 27(2), 56-60. <http://dx.doi.org/10.1111/j.1741-6612.2008.00296.x>.
- de Jong Gierveld, J. (1998). A review of loneliness: Concept and definitions, determinants and consequences. *Reviews in Clinical Gerontology*, 8(1), 73-80.
- de Jong Gierveld, J., & van Tilburg, T. (1999). Living arrangements of older adults in the Netherlands and Italy: Coresidence values and behaviour and their consequences for loneliness. *Journal of Cross-Cultural Gerontology*, 14(1), 1-24. <http://dx.doi.org/10.1023/a:1006600825693>.
- de Jong Gierveld, J., & van Tilburg, T. (2006). A 6-item scale for overall, emotional, and social loneliness. *Research on Aging*, 28(5), 582-598. <http://dx.doi.org/10.1177/0164027506289723>.

Deaton, A. (2010). Income, aging, health and well-being around the world: Evidence from the Gallup World Poll. In D. A. Wise (Ed.), *Research findings in the economics of ageing* (pp. 235-263). Chicago, IL: The University of Chicago.

Deci, E., & Ryan, R. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies*, 9(1), 1-11.
<http://dx.doi.org/10.1007/s10902-006-9018-1>.

Deci, E. L., & Ryan, R. M. (2011). Self-determination theory. *Handbook of theories of social psychology*, 1, 416-433.

Deng, J., Hu, J., Wu, W., Dong, B., & Wu, h. (2010). Subjective well-being, social support, and age-related functioning among the very old in China. *International Journal of Geriatric Psychology*, 25(7), 697-703.

Department of National Planning. (2010a). *Statistical archive of Maldives* [data file]. Retrieved from Department of National Planning website
http://www.planning.gov.mv/statistics_archive/statistical_tables.html.

Department of National Planning. (2010b). *Statistical year book of Maldives 2010*. Male', Maldives: Author.

Department of National Planning. (2012). *Household income and expenditure survey (HIES) 2009-2010: Summary*. Male', Maldives: Author.

Didi, R. (2012). Implications of ageing in Maldives. *Regional Health Forum* 16(1), 29-32.

Diener, E. (2009). *Satisfaction with life scale (SWLS)*. Retrieved from
<http://internal.psychology.illinois.edu/~ediener/SWLS.html>.

Diener, E., & Biswas-Diener, R. (2002). Will money increase subjective well-being? *Social Indicators Research*, 57(2), 119-169.
<http://dx.doi.org/10.1023/a:1014411319119>.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71-75.

Diener, E., & Lucas, R. E. (1999). Personality and subjective wellbeing. In D. Kahneman, E. Diener & N. Schwartz (Eds.), *Well-being: The foundation of hedonic psychology* (pp. 213-229). New York, NY: Russell Sage Foundation.

Diener, E., Napa-Scollon, C. K., Oishi, S., Dzokoto, V., & Suh, E. M. (2000). Positivity and the construction of life satisfaction judgments: Global happiness is not the sum of its parts. *Journal of Happiness Studies*, 1(2), 159-176.
<http://dx.doi.org/10.1023/a:1010031813405>.

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology*, 54(1), 403-425.

- Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social and subjective indicators. *Social Indicators Research*, 40(1-2), 189-216.
<http://dx.doi.org/10.1023/a:1006859511756>.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276-302.
- Division of Sustainable Development. (2014a, 1-4 September). *Partnership briefs for Small Island Developing States: Social development of SIDS, health and NCDS, youth and women*. Paper presented at the Third International Conference on Small Island Developing States, Apia: Samoa.
- Division of Sustainable Development. (2014b, September). *Partnership briefs for Small Island Developing States: Sustainable economic development*. Paper presented at the Third International Conference on Small Island Developing States, Apia: Samoa.
- Dolan, P., Peasgood, T., & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology*, 29(1), 94-122.
<http://dx.doi.org/10.1016/j.joep.2007.09.001>.
- Doyal, L., & Gough, I. (1991). *A theory of human need*. New York, NY: Palgrave Macmillan.
- Dykstra, P. (2009). Older adult loneliness: Myths and realities. *European Journal of Ageing*, 6(2), 91-100. <http://dx.doi.org/10.1007/s10433-009-0110-3>.
- Easterlin, R. (2005). Feeding the illusion of growth and happiness: A reply to Hagerty and Veenhoven. *Social Indicators Research*, 74(3), 429-443.
<http://dx.doi.org/10.1007/s11205-004-6170-z>.
- Easterlin, R. A. (2001). Income and happiness: Towards a unified theory. *The Economic Journal*, 111(473), 465-484. <http://dx.doi.org/10.1111/1468-0297.00646>.
- Easterlin, R. A. (2006). Life cycle happiness and its sources: Intersections of psychology, economics, and demography. *Journal of Economic Psychology*, 27(4), 463-482. <http://dx.doi.org/10.1016/j.joep.2006.05.002>.
- Easterly, W., & Kraay, A. (2000). Small states, small problems? Income, growth, and volatility in small states. *World Development*, 28(11), 2013-2027.
[http://dx.doi.org/10.1016/S0305-750X\(00\)00068-1](http://dx.doi.org/10.1016/S0305-750X(00)00068-1).
- Emmerson, C., & Muriel, A. (2008). Financial resources and wellbeing. In J. Banks, E. Breeze, C. Lessof, & J. Nazroo (Eds.), *Living in the 21st century: Older people in England, The 2006 English longitudinal study of ageing (Wave3)* (pp. 118-149). London, UK: The Institute for Fiscal Studies.

- Enkvist, Å., Ekström, H., & Elmståhl, S. (2012). What factors affect life satisfaction (LS) among the oldest-old? *Archives of Gerontology and Geriatrics*, 54(1), 140-145. <http://dx.doi.org/10.1016/j.archger.2011.03.013>
- Erikson, E. H. (1959). Identity and the life cycle: Selected papers. *Psychological Issues*, 1, 1-171.
- Escobar, A. (2011). *Encountering development: The making and unmaking of the Third World*. Princeton, NJ: Princeton University.
- Estes, C. L., Swan, J. H., & Gerard, L. E. (1982). Dominant and Competing Paradigms in Gerontology: Towards a Political Economy of Ageing. *Ageing & Society*, 2(02), 151-164. <http://dx.doi.org/10.1017/S0144686X00009405>.
- European Values Study Group, & World Values Survey. (2011). *Values surveys 1981-2004: Integrated questionnaire v.20060423*: Retrieved from http://data.library.utoronto.ca/datapub/codebooks/utm/wvsevs/1981_2000/integratedquestionnaire.pdf.
- Faisal, M. (2002). *Patterns and socio-economic consequences of internal migration in the Maldives* (Unpublished Masters thesis). University of Waikato, Hamilton.
- Ferrer-i-Carbonell, A. (2005). Income and well-being: An empirical analysis of the comparison income effect. *Journal of Public Economics*, 89(5-6), 997-1019. <http://dx.doi.org/10.1016/j.jpubeco.2004.06.003>.
- Ferring, D., Balducci, C., Burholt, V., Wenger, C., Thissen, F., Weber, G., & Hallberg, I. (2004). Life satisfaction of older people in six European countries: Findings from the European study on adult well-being. *European Journal of Ageing*, 1(1), 15-25. <http://dx.doi.org/10.1007/s10433-004-0011-4>
- Field, A. (2013). *Discovering statistics using IBM SPSS Statistics*. (4th ed.). London, UK: Sage.
- Fiori, K. L., Antonucci, T. C., & Cortina, K. S. (2006). Social network typologies and mental health among older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 61(1), 25-32.
- Fleuret, S., & Atkinson, S. (2007). Wellbeing, health and geography: A critical review and research agenda. *New Zealand Geographer*, 63(2), 106-118. <http://dx.doi.org/10.1111/j.1745-7939.2007.00093.x>.
- Fox, N. J. (2005). Cultures of ageing in Thailand and Australia. (What can an ageing body do?). *Sociology*, 39(3), 481-498. <http://dx.doi.org/10.1177/0038038505052489>.
- Frankenberg, E., Chan, A., & Ofstedal, M. B. (2002). Stability and change in living arrangements in Indonesia, Singapore, and Taiwan, 1993-99. *Population Studies*, 56(2), 201-213.

- Freedman, V. A., Stafford, F., Schwarz, N., Conrad, F., & Cornman, J. C. (2012). Disability, participation, and subjective wellbeing among older couples. *Social Science & Medicine*, 74(4), 588-596.
<http://dx.doi.org/10.1016/j.socscimed.2011.10.018>.
- Gabriel, Z., & Bowling, A. (2004). Quality of life from the perspectives of older people. *Ageing & Society*, 24(05), 675-691.
<http://dx.doi.org/10.1017/S0144686X03001582>.
- Garatachea, N., Molinero, O., Martínez-García, R., Jiménez-Jiménez, R., González-Gallego, J., & Márquez, S. (2009). Feelings of wellbeing in elderly people: Relationship to physical activity and physical function. *Archives of Gerontology and Geriatrics*, 48(3), 306-312.
<http://dx.doi.org/10.1016/j.archger.2008.02.010>.
- German Socio-economic Panel Study, & Max Planck Institute for Human Development. (2011). *The Berlin ageing studies: BASE II - follow-up and extension*. Retrieved from <http://www.diw.de/sixcms/detail.php/237550>
- Gibson, R. C. (1987). Reconceptualizing retirement for black Americans. *The Gerontologist*, 27(6), 691-698. <http://dx.doi.org/10.1093/geront/27.6.691>,
- Gillham, B. (2008). *Small scale social survey methods*. London, UK: Continuum International.
- Gold, M. (1998). Beyond coverage and supply: Measuring access to health care in today's market. *Health Services Research*, 33(3), 625-652.
- Gómez-Olivé, F. X., Thorogood, M., Clark, B. D., Kahn, K., & Tollman, S. M. (2010). Assessing health and well-being among older people in rural South Africa. *Global Health Action*, 3(Suppl 2), 23-35.
<http://dx.doi.org/10.3402/gha.v3i0.2126>.
- Gottret, P., & Schieber, G. (2006). *Health financing revisited: A practitioner's guide*. Washington, DC: The World Bank.
- Gough, I. (2003). *Lists and thresholds: Comparing our theory of human need with Nussbaum's capabilities approach* (WeD working paper 01). Bath, UK: The Wellbeing in Developing Countries Research Group, University of Bath.
- Goulet, D. (1995). *Development ethics: A guide to theory and practice*. London, UK: Apex.
- Griffin, J. (1986). *Well-being: Its meaning, measurement and moral importance*. Oxford, UK: Oxford University.
- Groves, R. M., Biemer, P. P., Lyberg, L. E., Massey, J. T., Nicholls II, W. L., & Waksberg, J. (Eds.). (2001). *Telephone survey methodology*. New York, NY: John Wiley and Sons, Inc.

- Guest, R. (2013). *Comparison of the New Zealand and Australian retirement income systems*. Griffith University. Retrieved from <http://www.cffc.org.nz/assets/Documents/RI-Review-2013-Comparison-NZ-Aus-Retirement-Income-Systems.pdf>
- Gulliford, M., Figueroa-Munoz, J., Morgan, M., Hughes, D., Gibson, B., Beech, R., & Hudson, M. (2002). What does 'access to health care' mean? *Journal of Health Services Research & Policy*, 7(3), 186-188. <http://dx.doi.org/10.1258/135581902760082517>.
- Gwozdz, W., & Sousa-Poza, A. (2010). Ageing, health and life satisfaction of the oldest old: an analysis for Germany. *Social Indicators Research*, 97(3), 397-417. <http://dx.doi.org/10.1007/s11205-009-9508-8>.
- Hambleton, I. R., Clarke, K., Broone, H. L., Fraser, H. S., Brathwaite, F., & Hennis, A. J. (2005). Historical and current predictors of self-reported health status among elderly persons in Barbados. *Pan American Journal of Public Health*, 17(5/6), 342-352.
- Hamerman, D. (1999). Toward an understanding of frailty. *Annals of Internal Medicine*, 130(11), 945.
- Hanson, W. E., Creswell, J. W., Clark, V. L. P., Petska, K. S., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology*, 52(2), 224-235. <http://dx.doi.org/10.1037/0022-0167.52.2.224>.
- Hardy, M., & Bryman, A. (2004). Introduction. In M. Hardy & A. Bryman (Eds.), *Handbook of data analysis*. (pp. 1-14). London, UK: Sage.
- Hasan, A. R. (1997, May). *Literacy in the Maldives*. Paper presented at the Asia Literacy Regional Forum, Manila, Philippines. Retrieved from http://www.literacy.org/sites/literacy.org/files/publications/hasan_lit_in_the_maldives_97.pdf
- Haseen, F., Adhikari, R., & Soonthornhdhada, K. (2010). Self-assessed health among Thai elderly. *BMC Geriatrics*, 10(30), 1-9.
- Havens, B., Hall, M., Sylvestre, G., & Jivan, T. (2004). Social isolation and loneliness: Differences between older rural and urban Manitobans. *Canadian Journal on Aging*, 23(2), 129-140.
- Havighurst, R. J. (1963). Successful aging. In R. H. Williams, T. C. & W. Donohue (Eds.), *Processes of aging: Social and psychological perspectives* (Vol. 1, pp. 299-320). New Brunswick, NJ: Transaction.
- Hawthorne, G. (2006). Measuring social isolation in older adults: Development and initial validation of the friendship scale. *Social Indicators Research*, 77(3), 521-548. [10.1007/s11205-005-7746-y](http://dx.doi.org/10.1007/s11205-005-7746-y)

- Hayes, G. (2009). Population ageing in the Pacific Islands: Emerging trends and future challenges. *Asia Pacific Population Journal*, 24(2), 79-103.
- Hayes, G. (2010). Population ageing in the Pacific islands: Addressing the challenge of an ageing population in three Pacific countries. In W. Narsey, A. S. Robertson, B. C. Prasad, K. Seniloli, E. Jongstra & W. Fiji (Eds.), *Regional Symposium on Population and Development in the Pacific Islands* Suva, Fiji: United Nations Population Fund and University of South Pacific.
- Hayman, K. J., Kerse, N., Dyal, L., Kepa, M., Teh, R., Wham, C., ... & Wilkinson, T. J. (2012). Life and living in advanced age: A cohort study in New Zealand-Te Puāwaitanga o Nga Tapuwae Kia Ora Tonu, LiLACS NZ: Study protocol. *BMC geriatrics*, 12(1), 33.
- Headey, B., & Wearing, A. (1989). Personality, life events, and subjective well-being: Toward a dynamic equilibrium model. *Journal of Personality and Social Psychology*, 57(4), 731-739.
- Hein, P. (2004). Small Island Developing States: Origin of the category and definition issues. In United Nations, *Is a special treatment of Small Island Developing States possible?* (pp. 1-22). Geneva, Switzerland: United Nations.
- Helliwell, J. F. (2003). How's life? Combining individual and national variables to explain subjective well-being. *Economic Modelling*, 20(2), 331-360. [http://dx.doi.org/10.1016/s0264-9993\(02\)00057-3](http://dx.doi.org/10.1016/s0264-9993(02)00057-3).
- Hesse-Biber, S. N. (2010). *Mixed methods research: Merging theory with practice*. New York, NY: Guilford.
- House, W. J. (2013). *Population and sustainable development in Small Island Developing States: Challenges, progress made and outstanding issues* (Technical Paper No. 2013/4). New York, NY: Population Division, Department of Economic and Social Affairs, United Nations.
- Howell, R. T., & Howell, C. J. (2008). The relation of economic status to subjective well-being in developing countries: A meta-analysis. *Psychological Bulletin*, 134(4), 536-560. <http://dx.doi.org/10.1037/0033-2909.134.4.536>.
- Huppert, F., Clark, A., Frey, B., Marks, N., & Siegrist, J. (2005). *Personal and social well-being module for the European Social Survey, Round 3* (NC8 paper 3b). Retrieved from <http://www.europeansocialsurvey.org/data/themes.html?t=personal>.
- Ibrahim, M. (2010). *Local E-government for the MDGs and service delivery: Maldives*. Paper presented at the International Conference on Good Governance for National Development, Workshop on E-Government for Achieving the MDGS and E-cities Network in Asia and the Pacific, Seoul, South Korea. Retrieved from <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan039629.pdf>.

- Inama, S. (2004). Preferential market access and erosion of preferences: What prospects for SIDS? In United Nations, *Is a special treatment of Small Island Developing States possible?* (pp. 23-56). Geneva, Switzerland: United Nations.
- Inglehart, R., Basanez, M., & Moreno, A. (1998). *Human values and beliefs: A cross-cultural source book*. Ann Arbor, MI: The University of Michigan.
- International Wellbeing Group. (2006). *Personal wellbeing index* (4th ed.). Melbourne, Australia: Australian Centre on Quality of Life, Deakin University.
- Israel, G. D. (2009). *Determining sample size*. Retrieved from <http://edis.ifas.ufl.edu/pd006>.
- Jackson, N. (2007). Population ageing in a nutshell: A phenomenon in four dimensions. *People and Place*, 15(2), 12-21.
- Jameel, A. (2003). *Identifying and promoting self-care among home dwelling older people in the Maldives* (Unpublished PhD thesis). La Trobe University, Victoria.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26. <http://dx.doi.org/10.2307/3700093>.
- Kahn, R. L., & Antonucci, T. C. (1980). Convoys over the life course: Attachment, roles and social support. In P. B. Baltes & O. Brim (Eds.) *Life-span development and behaviour* (pp. 253-286). New York, NY: Academic.
- Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-being. *Proceedings of the National Academy of Sciences of the United States of America*, 107(38), 16489-16493. <http://dx.doi.org/10.2307/20779694>.
- Kahneman, D., Diener, E., & Schwarz, N. (Eds.). (1999). *Well-being: The foundation of hedonic psychology*. New York, NY: Russel Sage Foundation.
- Khaleel, A. (2001). *The role of family planning in reducing maternal mortality in Maldives* (Unpublished Master's Dissertaion). Mahidol University, Thailand.
- Knafo, A., Roccas, S., & Sagiv, L. (2011). The value of values in cross-cultural research: A special issue in honor of Shalom Schwartz. *Journal of Cross-Cultural Psychology*, 42(2), 178-185. <http://dx.doi.org/10.1177/0022022110396863>.
- Knight, J., Song, L., & Gunatilaka, R. (2009). Subjective well-being and its determinants in rural China. *China Economic Review*, 20(4), 635-649. <http://dx.doi.org/10.1016/j.chieco.2008.09.003>.
- Knodel, J., & Chayovan, N. (2008). *Population ageing and the wellbeing of older persons in Thailand: Past trends, current situation and future challenges*.

Bangkok, Thailand: United Nations Population Fund, Thailand and Asia and the Pacific Regional Office.

Ko, L. (2012). Solidarity, ambivalence and multigenerational co-residence in Hong Kong. In Arber, S. & Timonen, V. (Eds.) *Contemporary grand-parenting: Changing family relationships in global contexts*, (pp. 91-112). Bristol, UK: Policy.

Kohli, M., Hank, K., & Künemund, H. (2009). The social connectedness of older Europeans: Patterns, dynamics and contexts. *Journal of European Social Policy*, 19(4), 327-340. <http://dx.doi.org/10.1177/1350506809341514>.

Koopman-Boyden, P. (1988). Perspectives on the elderly in New Zealand. In The Royal Commission on Social Policy (Ed.), *The elderly in New Zealand* (pp. 629-710). Wellington, New Zealand: The Royal Commission on Social Policy.

Koopman-Boyden, P., Cameron, M. P., Richardson, M., & Davey, J. (2014). *Making active ageing a reality: Maximising participation and contribution by older people*. Hamilton, New Zealand: University of Waikato.

Koopman-Boyden, P., & van der Pas, S. (2009). Social connectedness and wellbeing among older New Zealanders. In P. Koopman-Boyden & C. Waldegrave (Eds.), *Enhancing wellbeing in an ageing society (EWAS) monograph no.1* (pp. 167-190). Wellington, New Zealand: The Population Studies Centre, University of Waikato and the Family Centre Social Policy Research Unit.

Koopman-Boyden, P., & Waldegrave, C. (Eds.). (2009). *Enhancing wellbeing in an ageing society (EWAS) monograph No.1*. Wellington, New Zealand: The Population Studies Centre, University of Waikato and Family Centre Social Policy Research Unit.

Kuan, T. S., & Jiuan, T. S. (2012). *Happiness and wellbeing: The Singaporean experience*. [Ebrary Reader version]. Retrieved from Ebrary database.

Kuan, T. S., Jiuan, T. S., & Keng, K. A. (2009). *Well-being of Singaporeans : Values, lifestyles, satisfaction and quality of life*. [Ebrary Reader version]. Retrieved from Ebrary database.

Kunzmann, U., Little, T. D., & Smith, J. (2000). Is age-related stability of subjective wellbeing a paradox? Cross-sectional and longitudinal evidence from the Berlin study. *Psychology and Aging*, 15(3), 511-526.

Lamb, V. L., & Myers, G. C. (1999). A comparative study of successful aging in three Asian countries. *Population Research and Policy Review*, 18(5), 433-450. <http://dx.doi.org/10.1023/a:1006284812318>.

Lang, F. R., & Carstensen, L. L. (1994). Close emotional relationships in late life: Further support for proactive ageing in social domain. *Psychology and Aging*, 9(2), 315-324.

Larson, R. (1978). Thirty years of research on the subjective well-being of older Americans. *Journal of Gerontology*, 33(1), 109-125.
<http://dx.doi.org/10.1093/geronj/33.1.109>.

Lau, A. L. D., Cummins, R. A., & McPherson, W. (2005). An investigation into the cross-cultural equivalence of the personal wellbeing index. *Social Indicators Research*, 72(3), 403-430. <http://dx.doi.org/10.1007/s11205-004-0561-z>.

Lau, R. S., Johnson, S., & Kamalanabhan, T. J. (2012). Healthy life expectancy in the context of population health and ageing in India. *Asia-Pacific Journal of Public Health*, 24(1), 195-207. <http://dx.doi.org/10.1177/1010539510376663>.

Lawton, M. P. (1983). Environment and other determinants of well-being in older people. *The Gerontologist*, 23(4), 349-357.
<http://dx.doi.org/10.1093/geront/23.4.349>.

Lee, J., Arokiasamy, P., Chandra, A., Hu, P., Liu, J., & Feeney, K. (2011). *Markers and drivers: Cardiovascular health of middle-age and older Indians* (Working paper). Santa Monica, CA: RAND Center for the Study of Aging: RAND Population Research Center.

Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The social connectedness and the social assurance scales. *Journal of Counseling Psychology*, 42(2), 232-241.

Leipert, B., & Reutter, L. (1998). Women's health and community health nursing practice in geographically isolated settings: A Canadian perspective. *Health Care for Women International*, 19(6), 575-588.

Lim, L. L., & Ng, T. P. (2010). Living alone, lack of a confidant and psychological well-being of elderly women in Singapore: The mediating role of loneliness. *Asia-Pacific Psychiatry*, 2(1), 33-40.

Lim, S. S., Gaziano, T. A., Gakidou, E., Reddy, K. S., Farzadfar, F., Lozano, R., & Rodgers, A. (2007). Chronic diseases 4: Prevention of cardiovascular disease in high-risk individuals in low-income and middle-income countries: Health effects and costs. *The Lancet*, 370(9604), 2054-2062.

Lindeman, M., & Verkasalo, M. (2005). Measuring values with the short Schwartz's value survey. *Journal of Personality Assessment*, 85(2), 170-178.
http://dx.doi.org/10.1207/s15327752jpa8502_09.

Lu, L., Kao, S.-F., & Hsieh, Y.-H. (2010). Positive attitudes toward older people and well-being among Chinese community older adults. *Journal of Applied Gerontology*, 29(5), 622-639. <http://dx.doi.org/10.1177/0733464809343289>.

Luszc, M. (2006). *The Australian longitudinal study of ageing: 15 years of ageing in South Australia*. Adelaide, Australia: Centre for Ageing Studies, Flinders University and Department for Families and Communities, Government of South Australia.

Maldives Culture. (2009). *Maldives under Abdul Majeed, Hassan Fareed and Mohamed Ameen 1924-1953*. Retrieved from http://www.maldivesculture.com/index.php?option=com_content&task=view&id=122&Itemid=79.

Maldives Pension Administration Office. (2011). *Pension schemes*. Retrieved from <http://pension.gov.mv/>.

Maldives Pension Administration Office. (2014). *Old age pension statistics*. Retrieved from <http://www.pension.gov.mv/stats/>.

Manderson, L. (2005). *Rethinking wellbeing; Essays on health, disability and disadvantaged*. Perth, Australia: API network, Australia Research Institute, Curtin University of Technology.

Maniku, M. H. (2012, May). *Maldives pension system: Governance, investment policy and challenges*. Paper presented at the Maldives Finance Forum, Bandos, Maldives.

Marmot, M. (2005). Social determinants of health inequalities. *The Lancet*, 365(9464), 1099-1104. [http://dx.doi.org/10.1016/s0140-6736\(05\)71146-6](http://dx.doi.org/10.1016/s0140-6736(05)71146-6).

Martin, L. G. (1989). Living arrangements of the elderly in Fiji, Korea, Malaysia, and the Philippines. *Demography*, 26(4), 627-643.

McEwan, A., Tsey, K., & Empowerment Research Team. (2008). *The role of spirituality in social and emotional wellbeing initiatives: The family wellbeing program at Yarrabah* (Discussion paper series No.7). Darwin, Australia: Cooperative Research Centre for Aboriginal Health.

McFadden, S. H. (1999). Religion, personality, and aging: A life span perspective. *Journal of Personality*, 67(6), 1081-1104.

Mehnert, T., Krauss, H. H., Nadler, R., & Boyd, M. (1990). Correlates of life satisfaction in those with disabling conditions. *Rehabilitation psychology*, 35(1), 3-17.

Meier, G. M. (2001). The old generation of development economics and the new. In G. M. Meier & S. J. E. (Eds.), *Frontiers of development economics: The future in perspective* (pp. 13-50). New York, NY: The World Bank and the Oxford University.

Merz, E.-M., & Consedine, N. S. (2009). The association of family support and wellbeing in later life depends on adult attachment style. *Attachment & Human Development*, 11(2), 203-221. <http://dx.doi.org/10.1080/14616730802625185>.

- Merz, E.-M., & Huxhold, O. (2010). Wellbeing depends on social relationship characteristics: Comparing different types and providers of support to older adults. *Ageing & Society*, 30(05), 843-857.
<http://dx.doi.org/10.1017/S0144686X10000061>.
- Ministry of Finance and Treasury and United Nations Development Programme. (2014). *Maldives human development report 2014. Bridging the divide: Addressing vulnerability, reducing inequality*. Male', Maldives: Author.
- Ministry of Health. (2002). *Health of older people strategy*. Wellington, New Zealand: Author.
- Ministry of Health. (2005). *Maldives health report*. Male', Maldives: Author.
- Ministry of Health. (2012). *Maldives health statistics 2012*. Male', Maldives: Author.
- Ministry of Health. (2013a). *Maldives national health accounts 2011*. Male', Maldives: World Health Organisation country office for Maldives. Retrieved from <http://www.searo.who.int/maldives/hsd-mav-1.pdf?ua=1>.
- Ministry of Health. (2013b). *National health workforce strategic plan*. Male', Maldives: Ministry of Health.
- Ministry of Health. (2014). *Health Master Plan 2006-2015: Evaluation Report*. Unpublished.
- Ministry of Health and Family. (2011). *Maldives Health Report 2009*. Male', Maldives: Author.
- Ministry of Planning and National Development. (2007a). *Millennium development goals: Maldives country report 2007*. Male', Maldives: Author
- Ministry of Planning and National Development. (2007b). *Population and housing census of Maldives 2006*. Male', Maldives: Author.
- Ministry of Planning and National Development. (2008). *Analytical report 2006: Population and housing census 2006*. Male', Maldives: Author.
- Ministry of Social and Family Development. (2014). *Statistical indicators on the elderly*. Retrieved from <http://app.msf.gov.sg/Research-Room/Research-Statistics/Statistical-Indicators-on-the-Elderly>.
- Ministry of Social Development. (2007). *Positive ageing indicators 2007*. Wellington, New Zealand: Author.
- Mohanty, M. (2011). Informal social protection and social development in Pacific Island countries: Role of NGOs and civil society. *Asia-Pacific Development Journal*, 18(2), 25-56.

Momtaz, Y. A., Ibrahim, R., Hamid, T. A., & Yahaya, N. (2011). Socio-demographic predictors of elderly's psychological well-being in Malaysia. *Aging & Mental Health*, 15(4), 437-445.
<http://dx.doi.org/10.1080/13607863.2010.536141>.

Moosa, H. F. (2012, September 22). Aduge ran yoobeel: Hura ah bodu eedheh. *Haveeru*. Retrieved from
http://www.haveeru.com.mv/dhivehi/dhivehi_raajjeyge_adu/127553.

Moosa, S., & Koopman-Boyden, P. (2015). A method for recruiting participants from isolated islands of Small Island Developing States (SIDS) for survey research. *Field Methods*. Advance online publication.
<http://dx.doi.org/1525822X15579010>.

Nahemow, L., Lawton, M. P., & Center, P. G. (1973). Toward an ecological theory of adaptation and aging. *Environmental Design Research: Selected papers*, 1, 24-32.

Naidoo, N., Abdullah, S., Bawah, A., Binka, F., Chuc, N. T., Debpuur, C., . . . Van Minh, H. (2010). Ageing and adult health status in eight lower-income countries: The indepth WHO-SAGE collaboration. *Global Health Action*, 11(Supplement 2), 11-22.

Najeeb, A., Abdulraheem, I. H., Shafeeu, A., & Aboobakuru, A. J. (2008). *Tharahgeege dhuveli: Si'hee dhaairaage kurierun 1978-2007*. Male', Maldives: Ministry of Health.

Narayan, D., & Cassidy, M. F. (2001). A dimensional approach to measuring social capital: Development and validation of a social capital inventory. *Current Sociology*, 49(2), 59-102. . <http://dx.doi.org/10.1177/0011392101049002006>.

National Social Protection Agency. (2013). *Social protection schemes*. Retrieved from <http://www.nspa.gov.mv/>.

Netuveli, G., Wiggins, R. D., Hildon, Z., Montgomery, S. M., & Blane, D. (2006). Quality of life at older ages: Evidence from the English longitudinal study of aging (wave 1). *Journal of Epidemiology and Community Health*, 60(4), 357-363.

Neuman, W. L. (2012). *Basics of social research: Qualitative and quantitative approaches* (3rd Ed.). Boston, NJ: Pearson.

Nolen-Hoeksema, S., & Rusting, C. L. (1999). Gender differences in wellbeing. In D. Kahneman, E. Diener & N. Schwarz (Eds.), *Wellbeing: The foundations of hedonic psychology* (pp. 330-352). New York, NY: Russel Sage Foundation.

Nordenfelt, L. (1993). *Quality of life, health and happiness*. Aldershot, UK: Avebury, Ashgate.

Nussbaum, M. (2003). Capabilities as fundamental entitlements: Sen and social justice. *Feminist Economics*, 9(2/3), 33.

- Nussbaum, M. C. (2004). Beyond the social contract: Capabilities and global justice. *Oxford Development Studies*, 32(1), 3-18.
<http://dx.doi.org/10.1080/1360081042000184093>.
- Nussbaum, M. C., & Sen, A. (Eds.). (1993). *The quality of life*. Oxford, UK: Oxford University.
- Office of the Auditor General. (2013). *Using the United Nations' Madrid indicators to better understand our ageing population*. Wellington, New Zealand: Author.
- Ogan, E. (2005). Social change in the Pacific: Problems old, problems new, problems borrowed. In A. Marsella, A. Austin & B. Grant (Eds.), *Social change and psychosocial adaptation in the Pacific Islands* (pp. 9-27). New York, NY: Springer.
- Ogawa, N., & Retherford, R. D. (1993). Care of the elderly in Japan: Changing norms and expectations. *Journal of Marriage and Family*, 55(3), 585-597.
- Oishi, S., & Diener, E. (2001). Goals, culture and subjective wellbeing. *Personality and Social Psychology Bulletin*, 27(12), 1674-1682.
- Oppong, J. R., Ironside, R. G., & Kennedy, L. W. (1988). Perceived quality of life in a centre-periphery framework. *Social Indicators Research*, 20(6), 605-620.
- Oswald, F., Jopp, D., Rott, C., & Wahl, H.-W. (2011). Is aging in place a resource for or risk to life satisfaction? *The Gerontologist*, 51(2), 238-250.
<http://dx.doi.org/10.1093/geront/gnq096>
- Oswald, F., Schilling, O., Wahl, H.-W., Fänge, A., Sixsmith, J., & Iwarsson, S. (2006). Homeward bound: Introducing a four-domain model of perceived housing in very old age. *Journal of Environmental Psychology*, 26(3), 187-201.
<http://dx.doi.org/10.1016/j.jenvp.2006.07.002>
- Oxford University Press. (2012). *Oxford Dictionaries*. Retrieved from Oxford dictionaries website <http://oxforddictionaries.com/>.
- Palloni, A., & McEniry, M. (2007). Aging and health status of elderly in Latin America and the Caribbean: Preliminary findings. *Journal of Cross-Cultural Gerontology*, 22(3), 263-285. <http://dx.doi.org/10.1007/s10823-006-9001-7>.
- Panapasa, S., Jackson, J., Caldwell, C., Heeringa, S., McNally, J., Williams, D., . . . Fa'asisila, S. (2012). Community-based participatory research approach to evidence-based research: Lessons from the Pacific Islander American health study. *Progress in Community Health Partnerships: Research, Education, and Action*, 6(1), 53-58.
- Pelling, M., & Uitto, J. I. (2001). Small Island Developing States: Natural disaster vulnerability and global change. *Global Environmental Change Part B*:

Environmental Hazards, 3(2), 49-62. [http://dx.doi.org/10.1016/S1464-2867\(01\)00018-3](http://dx.doi.org/10.1016/S1464-2867(01)00018-3).

Penchansky, R., & Thomas, J. W. (1981). The concept of access: Definition and relationship to consumer satisfaction. *Medical Care*, 19(2), 127-140. <http://dx.doi.org/10.2307/3764310>.

Peters, A., & Liefbroer, A. C. (1997). Beyond marital status: Partner history and wellbeing in old age. *Journal of Marriage and Family*, 59, 687-699.

Phillips, D. R., Siu, O. L., Yeh, A. G. O., & Cheng, K. H. C. (2005). The impacts of dwelling conditions on older persons' psychological well-being in Hong Kong: The mediating role of residential satisfaction. *Social Science & Medicine*, 60(12), 2785-2797. <http://dx.doi.org/10.1016/j.socscimed.2004.11.027>

Pillmer, K., Moen, P., Wethington, E., & Glasgow, N. (Eds.). (2000). *Social integration in the second half of life*. Baltimore, MD: The John Hopkins University.

Pinquart, M., & Sörensen, S. (2000). Influences of socioeconomic status, social network, and competence on subjective well-being in later life: A meta-analysis. *Psychology and Aging*, 15(2), 187-224.

Pinquart, M., & Sörensen, S. (2001). Gender differences in self-concept and psychological well-being in old age: A meta-analysis. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 56(4), 195-213. <http://dx.doi.org/10.1093/geronb/56.4.P195>

Pool, I., Amey, B., Cameron, M. P., & van der Pas, S. (2009). Health and wellbeing among older New Zealanders. In P. Koopman-Boyden & C. Waldegrave (Eds.), *Enhancing wellbeing in an ageing society (EWAS) monograph no.1* (pp. 37-50). Wellington, New Zealand: Population Studies Centre, University of Waikato and Family Centre Social Policy Research Unit.

Power, M., & Schmidt, S. (2006). *WHOQOL-OLD*. Copenhagen, Denmark: World Health Organization, European Office.

Preston, C. C., & Colman, A. M. (2000). Optimal number of response categories in rating scales: Reliability, validity, discriminating power, and respondent preferences. *Acta Psychologica*, 104(1), 1-15. [http://dx.doi.org/10.1016/S0001-6918\(99\)00050-5](http://dx.doi.org/10.1016/S0001-6918(99)00050-5).

Qizilbash, M. (1998). The concept of well-being. *Economics and Philosophy*, 14(01), 51-73. <http://dx.doi.org/10.1017/S0266267100004934>.

Qizilbash, M. (2002). Development, common foes and shared values. *Review of Political Economy*, 14(4), 463-480.

- Rahman, M. O., & Barsky, A. J. (2003). Self-reported health among older Bangladeshis: How good a health indicator is it? *The Gerontologist*, 43(6), 856-863. <http://dx.doi.org/10.1093/geront/43.6.856>.
- Rappa, A. L. (1999). The politics of ageing: Perspectives from state and society in Singapore. *Southeast Asian Journal of Social Science*, 27(2), 123.
- Rawlins, J. M., Simeon, D. T., Ramsdath, D. D., & Chadee, D. D. (2008). The elderly in Trinidad: Health, social and economic status and issues of loneliness. *West Indian Medical Journal*, 57(6), 589-595.
- Razzaque, A., Nahar, L., Khanam, M. A., & Streatfield, P. K. (2010). Socio-demographic differentials of adult health indicators in Matlab, Bangladesh: self-rated health, health state, quality of life and disability level. *Global Health Action Supplement*, 3, 70-77.
- Register, M. E., Herman, J., & Tavakoli, A. S. (2011). Development and psychometric testing of the register – connectedness scale for older adults. *Research in Nursing & Health*, 34(1), 60-72. <http://dx.doi.org/10.1002/nur.20415>.
- Reyes, G. E. (2001). Four main theories of development: Modernization, dependency, world-systems, and globalization. *Sincronía*, 4(2).
- Robeyns, I. (2011). The capability approach. In E. N. Zalta (Ed.), *The Stanford Encyclopaedia of Philosophy* (Summer ed.). Stanford, CA: The Metaphysics Research Lab, Centre for the study of Languages and Information, Stanford University.
- Riley, N. E., & McCarthy, J. (2003). *Demography in the age of postmodern*. Cambridge, UK: Cambridge University Press.
- Roccas, S., & Amit, A. (2011). Group heterogeneity and tolerance: The moderating role of conservation values. *Journal of Experimental Social Psychology*, 47(5), 898-907. <http://dx.doi.org/10.1016/j.jesp.2011.03.011>
- Rodolfo, S. (1997). The World Health Organisation needs to reconsider its definition of health. *British Medical Journal*, 314(7091), 1409.
- Rojas, M. (2007). The complexity of wellbeing: A life satisfaction conception and a domains of life approach. In I. Gough & J. A. McGregor (Eds.), *Wellbeing in developing countries* (pp.259-282). Cambridge, UK: Cambridge University.
- Rook, K. S. (1990). Social relationships as a source of companionship: Implications for older adults' psychological wellbeing. In B. R. Sarason, I. G. Sarason & G. R. Pierce (Eds.), *Social support: An international view* (pp. 221-250). New York, NY: John Wiley & Sons.
- Rossi, P. H., Wright, J. D., & Anderson, A. B. (2013). *Handbook of survey research*. Bingley, UK: Academic.

Rowe, J. W., & Kahn, R. L. (1987). Human aging: Usual and successful. *Science*, 237(4811), 143-149.

Rudkin, L. (1993). Gender differences in economic well-being among the elderly of Java. *Demography*, 30(2), 209-226.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and wellbeing. *American Psychologist*, 55(1), 68-78. <http://dx.doi.org/10.1037/110003-066X.55.1.68>

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52(1), 141-166. <http://dx.doi.org/10.1146/annurev.psych.52.1.141>

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719-727.

Sadana, R. (2000). Measuring reproductive health: Review of community-based approaches to assessing morbidity. *Bulletin of the World Health Organization*, 78(5), 640-654.

Sarason, I. G., Sarason, B. R., Shearin, E. N., & Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships*, 4(4), 497-510. <http://dx.doi.org/10.1177/0265407587044007>.

Schwartz, S. H. (1999). A theory of cultural values and some implications for work. *Applied Psychology*, 48(1), 23-47. <http://dx.doi.org/10.1111/j.1464-0597.1999.tb00047.x>.

Schwartz, S. H. (2011). Studying values: personal adventure, future directions. *Journal of Cross-Cultural Psychology*, 42(2), 307-319. <http://dx.doi.org/10.1177/0022022110396925>.

Schwartz, S. H., & Bardi, A. (2001). Value hierarchies across cultures: Taking a similarities perspective. *Journal of Cross-Cultural Psychology*, 32(3), 268-290. <http://dx.doi.org/10.1177/0022022101032003002>.

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001). Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. *Journal of Cross-Cultural Psychology*, 32(5), 519-542. <http://dx.doi.org/10.1177/0022022101032005001>.

Schwarz, N., & Strack, F. (1999). Reports of subjective wellbeing: Judgemental process and their methodological implications. In D. Kahneman & N. Schwarz (Eds.), *Wellbeing: The foundation of hedonic psychology* (pp. 61-84). New York, NY: Russel Sage Foundation.

Schwingel, A., Niti, M. M., Tang, C., & Ng, T. P. (2009). Continued work employment and volunteerism and mental well-being of older adults: Singapore

- longitudinal ageing studies. *Age and Ageing*, 38(5), 531-537.
<http://dx.doi.org/10.1093/ageing/afp089>.
- Sen, A. (1985). Well-being, agency and freedom: The Dewey lectures 1984. *The Journal of Philosophy*, 82(4), 169-221.
- Sen, A. (1993). Capability and wellbeing. In M. C. Nussbaum & A. Sen (Eds.), *The quality of life* (pp. 30-53). Oxford, UK: Oxford University.
- Sen, A. (1999). *Development as freedom*. Oxford, UK: Oxford University.
- Sen, A. (2008). Capability and wellbeing. In D. M. Hausman (Ed.), *The philosophy of economics: An anthology* (3 ed., pp. 270-293). Cambridge, UK: Cambridge University Press.
- Shakespeare-Finch, J., & Obst, P. L. (2011). The development of the 2-way social support scale: A measure of giving and receiving emotional and instrumental support. *Journal of Personality Assessment*, 93(5), 483-490.
<http://dx.doi.org/10.1080/00223891.2011.594124>.
- Shmotkin, D. (1990). Subjective well-being as a function of age and gender: A multivariate look for differentiated trends. *Social Indicators Research*, 23(3), 201-230. <http://dx.doi.org/10.2307/27520842>.
- Singh-Manoux, A., Martikainen, P., Ferrie, J., Zins, M., Marmot, M., & Goldberg, M. (2006). What does self rated health measure? Results from the British Whitehall II and French Gazel cohort studies. *Journal of epidemiology and community health*, 60(4), 364-372. <http://dx.doi.org/10.1136/jech.2005.039883>.
- Smith, A. E., Sim, J., Scharf, T., & Phillipson, C. (2004). Determinants of quality of life amongst older people in deprived neighbourhoods. *Ageing & Society*, 24(05), 793-814. <http://dx.doi.org/10.1017/S0144686X04002569>.
- Smith, J. (2001). Well-being and health from age 70 to 100: Findings from the Berlin Aging Study. *European Review*, 9(04), 461-477.
<http://dx.doi.org/10.1017/S1062798701000424>.
- Smith, J., & Baltes, M. M. (1998). The role of gender in very old age: Profiles of functioning and everyday life patterns. *Psychology and Aging*, 13(4), 676-695.
<http://dx.doi.org/10.1037/0882-7974.13.4.676>.
- Sudha, S., Suchindran, C., Mutran, E., Rajan, S. I., & Sarma, P. S. (2006). Marital status, family ties, and self-rated health among elders in South India. *Journal of Cross-Cultural Gerontology*, 21(3-4), 103-120. <http://dx.doi.org/10.1007/s10823-006-9027-x>.
- Thompson, M. G., & Heller, K. (1990). Facets of support related to well-being: quantitative social isolation and perceived family support in a sample of elderly women. *Psychology and Aging*, 5(4), 535-544.

- Tiliouine, H., Cummins, R., & Davern, M. (2006). Measuring wellbeing in developing countries: The case of Algeria. *Social Indicators Research*, 75(1), 1-30. <http://dx.doi.org/10.1007/s11205-004-2012-2>.
- Tiliouine, H., Cummins, R. A., & Davern, M. (2008). Islamic religiosity, subjective well-being, and health. *Mental Health, Religion & Culture*, 12(1), 55-74. <http://dx.doi.org/10.1080/13674670802118099>.
- Todaro, M. P., & Smith, S. C. (2003). *Economic development* (8th ed.). Boston, MA: Addison-Wesley Higher Education Group.
- Tornstam, L. (1997). Gerotranscendence: The contemplative dimension of aging. *Journal of Aging Studies*, 11(2), 143.
- Townsend, P. (1981). The structured dependency of the elderly: A creation of social policy in the twentieth century. *Ageing & Society*, 1(01), 5-28. <http://dx.doi.org/10.1017/S0144686X81000020>.
- Tucker, V. (1996). Introduction: A cultural perspective on development. *European Journal of Development Research*, 8(2), 1-21.
- UN System Task Team. (2012). *Countries with special needs* (UN system task team on the post-2015 UN development agenda) New York, NY: United Nations Office of the High Representative for the Least Developed Countries Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS).
- United Nations. (1992, June). *Agenda 21*. Paper presented at the United Nations Conference on Environment & Development, Rio de Janeiro, Brazil. Retrieved from United Nations website <http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>.
- United Nations. (2002a). *Ageing in Asia and the Pacific: Emerging issues and successful practices* (Social Policy Paper No. 10). Bangkok, Thailand: United Nations Economic and Social Commission for Asia and the Pacific.
- United Nations. (2002b). *Report of the second world assembly on ageing*, Madrid, 8-12 April 2002. New York, NY: United Nations.
- United Nations. (2004). *Is a special treatment of Small Island Developing States possible?* New York, NY: Author.
- United Nations. (2007a). *The Macao outcome document of the high-level meeting on the regional review of the Madrid international plan of action on ageing Macao*. Bangkok, Thailand: United Nations Economic and Social Council for Asia and the Pacific.
- United Nations. (2007b). *Major developments in the area of ageing since the Second World Assembly on Ageing* (Report of the Secretary-General, E/CN.5/2007/7). New York, NY: United Nations Economic and Social Council.

United Nations. (2007c, October). *Regional review of the implementation of MIPAA in Asia and the Pacific*. Paper presented to the High-level Meeting on the Regional Review of the Madrid International Plan of Action on Ageing (MIPAA), Macao, China. Retrieved from United Nations Economic and Social Council for Asia and the Pacific, website
<http://www.unescap.org/esid/psis/meetings/ageingmipaa2007/RegionalReviewofMIPAA.pdf>.

United Nations. (2009). *World population prospects, the 2008 revision: Executive summary*. New York, NY: United Nations Department of Economic and Social Affairs.

United Nations. (2010a). *Five-year review of the Mauritius Strategy for the further implementation of the programme of action for the sustainable development of Small Island Developing States* (Report of the Secretary-General, Vol. A/65/115). New York, NY: Author.

United Nations. (2010b). *World population ageing 2009*. New York, NY: Department of Economic and Social Affairs, United Nations.

United Nations. (2011a). *World Population Prospects, the 2010 Revision* [data file]. Retrieved from United Nations Department of Economic and Social Affairs, Population division website <http://esa.un.org/wpp/Excel-Data/population.htm>.

United Nations. (2011b). *World statistics pocketbook 2010: Small Island Developing States*. New York, NY: United Nations.

United Nations. (2013a, April). *Small Island Developing States and the post-2015 agenda*. Retrieved from United Nations website
<https://sustainabledevelopment.un.org/content/documents/1879sidsegm.pdf>.

United Nations. (2013b). *World population ageing 2013*. New York, NY: Department of Economic and Social Affairs, United Nations.

United Nations. (2013c). *World population prospectus: 2012 Revision* [data file]. Retrieved from United Nations Department of Economic and Social Affairs, Population division website http://esa.un.org/wpp/unpp/panel_population.htm.

United Nations. (2014). *World statistics pocketbook: Small Island Developing States* (2014 ed.). New York, NY: Author.

United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP). (n.d). *Income support schemes in Pacific Island countries: A brief overview*. Retrieved from
<http://www.unescapsdd.org/files/documents/Income%20support%20schemes%20in%20Pacific%20island%20countries.pdf>.

United Nations Office of the High Representative for the Least Developed Countries Landlocked Developing Countries and Small Island Developing States

(UN-OHRLLS). (2011). *Small Island Developing States: Small islands big(ger) stakes*. New York, NY: United Nations.

United Nations Office of the High Representative for the Least Developed Countries Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS). (2013). *Small Island Developing States in numbers*. New York, NY: United Nations.

United Nations programme on Ageing, & International Association of Gerontology and Geriatrics. (2007). *Research agenda on ageing for the 21st Century: 2007 update*. Retrieved from <http://www.un.org/ageing/documents/AgeingResearchAgenda-6.pdf>.

University of Waikato. (2008). *Ethical conduct in human research and related activities regulations*. Retrieved from <http://calendar.waikato.ac.nz/assessment/ethicalConduct.html>.

Uppal, S. (2006). Impact of the timing, type and severity of disability on the subjective well-being of individuals with disabilities. *Social Science & Medicine* 63(2), 525–539.

van Baarsen, B., Snijders, T. A. B., Smit, J. H., & van Duijn, M. A. J. (2001). Lonely but not alone: Emotional isolation and social isolation as two distinct dimensions of loneliness in older people. *Educational and Psychological Measurement*, 61(1), 119-135. <http://dx.doi.org/10.1177/00131640121971103>.

van der Pas, S. (2009). Living arrangements: Ageing in place and wellbeing among older New Zealanders. In P. Koopman-Boyden & C. Waldegrave (Eds.), *Enhancing wellbeing in an ageing society (EWAS) monograph no.1* (pp. 133-154). Wellington, New Zealand: The Population Studies Centre, University of Waikato, and Family Centre for Social Policy Research Unit.

van Praag, B. M. S., Frijters, P., & Ferrer-i-Carbonell, A. (2003). The anatomy of subjective well-being. *Journal of Economic Behavior & Organization*, 51(1), 29-49. [http://dx.doi.org/10.1016/s0167-2681\(02\)00140-3](http://dx.doi.org/10.1016/s0167-2681(02)00140-3).

van Tilburg, T. (1998). Losing and gaining in old age: Changes in personal network size and social support in a four-year longitudinal study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 53B(6), S313-S323. <http://dx.doi.org/10.1093/geronb/53B.6.S313>.

Veenhoven, R. (2003). Hedonism and happiness. *Journal of Happiness Studies*, 4(4), 437-457. 10.1023/B:JOHS.00000005719.56211.f.d.

Veenhoven, R. (2007, April). *Measures of gross national happiness*. Paper presented at the OECD Conference on Measurability and Policy Relevance of Happiness, Rome, Italy.

von Faber, M., Bootsma-van der Wiel, A., van Exel, E., Gussekloo, J., Lagaay, A. M., van Dongen, E., ... & Westendorp, R. G. (2001). Successful aging in the oldest old: who can be characterized as successfully aged? *Archives of internal medicine*, 161(22), 2694-2700. <http://dx.doi.org/10.1001/archinte.161.22.2694>

Vossenaar, R. (2004). Trade and the environment: An important relationship for SIDS. In United Nations, *Is a special treatment of Small Island Developing States possible?* (pp. 57-90). Geneva, Switzerland: United Nations.

Wadensten, B. (2006). An analysis of psychosocial theories of ageing and their relevance to practical gerontological nursing in Sweden. *Scandinavian Journal of Caring Sciences*, 20(3), 347-354.

Wahl, H.-W., Iwarsson, S., & Oswald, F. (2012). Aging well and the environment: Toward an integrative model and research agenda for the future. *The Gerontologist*, 52(3), 306-316. <http://dx.doi.org/10.1093/geront/gnr154>.

Waldegrave, C. (2006) *Stakeholder consultations in ageing research* (EWAS Working Paper 7). Hamilton, New Zealand: Population Studies Centre, University of Waikato and Family Centre, Social Policy Research Unit.

Wang, X., Shang, X., & Xu, L. (2011). Subjective well-being poverty of the elderly population in China. *Social Policy & Administration*, 45(6), 714-731. <http://dx.doi.org/10.1111/j.1467-9515.2011.00804.x>.

Weinstein, J. A. (2010). *Applying social statistics: An introduction to quantitative reasoning in sociology*. Lanham, MD: Rowman & Littlefield.

Westerhof, G. J., Dittmann-Kohli, F., & Thissen, T. (2001). Beyond life satisfaction: Lay conceptions of well-being among middle-aged and elderly adults. *Social Indicators Research*, 56(2), 179-203.

White, S. C. (2009). *Bringing wellbeing into development practice* (WeD Working Paper 09/50). Bath, UK: University of Bath, Wellbeing in Developing Countries Research Group.

White, S. C. (2010). Analysing wellbeing: A framework for development practice. *Development in Practice*, 20(2), 158-172. <http://dx.doi.org/10.1080/09614520903564199>.

Williams, A., Cheston, T., Coudouel, A., & Subran, L. (2013). *Tailoring social protection to Small Island Developing States: Lessons learned from the Caribbean* (Discussion Paper No. 1306). Washington, DC: The World Bank.

Wilson, G. (1997). A postmodern approach to structured dependency theory. *Journal of Social Policy*, 26(03), 341-350. <http://dx.doi.org/10.1017/S0047279497005047>.

- Winterton, R., & Warburton, J. (2011). Does place matter? Reviewing the experience of disadvantage for older people in rural Australia. *Rural Society*, 20(2), 187-197.
- Witter, R. A., Stock, W. A., Okun, M. A., & Haring, M. J. (1985). Religion and subjective well-being in adulthood: A quantitative synthesis. *Review of Religious Research*, 26(4), 332-342.
- Wood, W., Rhodes, N., & Whelan, M. (1989). Sex differences in positive well-being: A consideration of emotional style and marital status. *Psychological Bulletin*, 106(2), 249-264. 10.1037/0033-2909.106.2.249.
- World Bank Group (The). (2014). *Maldives country snapshot*. Washington, DC: Author.
- World Health Organization. (1997). *WHOQOL: Measuring quality of life*. Geneva, Switzerland: Author.
- World Health Organization. (2008). *Active and healthy ageing*. Retrieved from World Health Organization, South East Asia Regional Office website http://apps.searo.who.int/PDS_DOCS/B3216.pdf.
- World Health Organization. (2009). *Basic documents* (47th ed.). Geneva, Switzerland: Author.
- World Health Organization. (2012). *Good health adds life to years: Global brief for world health day 2012*. Geneva, Switzerland: World Health Organization.
- World Health Organization. (2014). *World health statistics 2014* [data file]. Retrieved from World Health Observatory http://www.who.int/gho/publications/world_health_statistics/2014/en/.
- World Health Organization Regional Office for the South East Asia. (2010). *Strategy for active and healthy ageing / elderly health care in the Maldives*. Unpublished.
- Yeung, G. Y., & Fung, H. (2007). Social support and life satisfaction among Hong Kong Chinese older adults: Family first? *European Journal of Ageing*, 4(4), 219-227. <http://dx.doi.org/10.1007/s10433-007-0065-1>.
- Yi, Z., Vaupel, J. W., Zhenyu, X., Yuzhi, L., & Chunyuan, Z. (2009). *Chinese longitudinal healthy longevity survey (CLHLS), 1998-2005*. Retrieved from the Inter-university Consortium for Political and Social research website <http://www.researchconnections.org/DSDR/studies/24901?keyword=family+life#skipto>.
- Young, I. A., & Christopher, W. (2009). *Memoir on the inhabitants of the Maldiva Islands 1834-1835, Transactions of the Bombay Geographical Society from 1836 to 1838*. Retrieved from

http://www.maldivesculture.com/index.php?option=com_content&task=view&id=170&Itemid=58.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30.

Zorondo-Rodríguez, F., Gómez-Baggethun, E., Demps, K., Ariza-Montobbio, P., García, C., & Reyes-García, V. (2014). What defines quality of life? The gap between public policies and locally defined indicators among residents of Kodagu, Karnataka (India). *Social Indicators Research*, 115(1), 441-456. <http://dx.doi.org/10.1007/s11205-012-9993-z>.

Zunzunegui, M., Béland, F., & Otero, A. (2001). Support from children, living arrangements, self-rated health and depressive symptoms of older people in Spain. *International Journal of Epidemiology*, 30(5), 1090-1099. <http://dx.doi.org/10.1093/ije/30.5.1090>.

APPENDICES

Appendix A: List of Small Island Developing States, 2013

List of Small Island Developing States (UN Members)			
1	Antigua and Barbuda	20	Federated States of Micronesia
2	Bahamas	21	Mauritius
3	Bahrain	22	Nauru
4	Barbados	23	Palau
5	Belize	24	Papua New Guinea
6	Cape Verde *	25	Samoa *
7	Comoros *	26	São Tomé and Príncipe *
8	Cuba	27	Singapore
9	Dominica	28	St. Kitts and Nevis
10	Dominican Republic	29	St. Lucia
11	Fiji	30	St. Vincent and the Grenadines
12	Grenada	31	Seychelles
13	Guinea-Bissau *	32	Solomon Islands *
14	Guyana	33	Suriname
15	Haiti *	34	Timor-Lesté *
16	Jamaica	35	Tonga
17	Kiribati *	36	Trinidad and Tobago
18	Maldives *	37	Tuvalu *
19	Marshall Islands	38	Vanuatu *

List of Small Island Developing States (Non-UN Members/Associate Members of the Regional Commissions)			
1	American Samoa	8	Guam
2	Anguilla	9	Montserrat
3	Aruba	10	Netherlands Antilles
4	British Virgin Islands	11	New Calendonia
5	Commonwealth of Northern Marianas	12	Niue
6	Cook Islands	13	Puerto Rico
7	French Polynesia	14	U.S. Virgin Islands

*Also Least Developed Countries

Source: United Nations Office of the High Representative of the Least Developed Countries, Landlocked Developing Countries and Small Island Developing Countries (UN-OHRLS), 2013

http://www.un.org/special-rep/ohrls/Print_version/List%20of%20SIDS.htm

Appendix B: Population ageing statistics of SIDS

1. Population 65+ years (estimates), numbers and as a percent of total population) 2010 - 2050 by country

Country (SIDS)	Population	2010	2015	2020	2025	2030	2035	2040	2045	2050
Bahamas	(,000)	25	32	41	52	65	75	85	91	100
	(%)	7	8.3	10.1	12.2	14.6	16.3	17.9	18.8	20.1
Bahrain	(,000)	25	31	39	73	108	148	203	241	334
	(%)	2	2.3	2.6	4.7	6.6	8.7	11.5	13.3	18.2
Barbados	(,000)	29	33	39	47	55	60	64	66	68
	(%)	10.4	11.3	13.1	15.6	18	19.5	20.7	21.1	21.8
Belize	(,000)	12	14	17	22	30	40	52	66	83
	(%)	3.9	4.1	4.5	5.2	6.4	8	9.9	11.8	14
Cape Verde	(,000)	28	27	32	39	52	65	76	91	109
	(%)	5.7	5.3	6	7.1	9.1	10.9	12.4	14.5	17.1
Comoros	(,000)	20	22	26	33	40	47	56	67	81
	(%)	2.9	2.8	3.1	3.4	3.8	4.1	4.4	4.8	5.4
Cuba	(,000)	1403	1576	1826	2054	2549	3000	3328	3306	3227
	(%)	12.4	14	16.4	18.6	23.5	28.3	32.4	33.5	34.4
Dominican Republic	(,000)	601	701	852	1047	1274	1510	1 745	1 976	2 228
	(%)	6	6.6	7.6	8.9	10.4	12	13.5	15	16.7
Fiji	(,000)	42	52	63	79	94	104	111	121	134
	(%)	4.8	5.8	6.9	8.5	10	11.1	11.8	13	14.6
Grenada	(,000)	8	8	8	10	12	13	14	15	18
	(%)	7.2	7.1	7.7	9	11.1	12.1	13.5	15.5	19.2
Guinea-Bissau	(,000)	47	53	73	80	89	89	123	145	177
	(%)	3	3	3.7	3.6	3.6	3.3	4.1	4.5	5.1
Guyana	(,000)	26	29	34	45	57	72	86	96	101
	(%)	3.3	3.6	4.1	5.3	6.7	8.5	10.1	11.5	12.3
Haiti	(,000)	441	485	559	641	746	856	960	1 122	1 377
	(%)	4.5	4.6	5	5.4	6	6.5	7.1	8	9.6
Jamaica	(,000)	215	228	265	308	374	445	491	511	523
	(%)	7.8	8.1	9.2	10.5	12.7	15.1	16.8	17.8	18.6
Maldives	(,000)	16	18	20	27	36	47	59	72	92
	(%)	5	4.9	5.3	6.5	8.3	10.3	12.4	14.7	18.2
Micronesia (Federated States of)	(,000)	4	5	6	7	8	8	7	7	10
	(%)	3.8	4.4	5.4	6.2	6.6	6.4	5.8	5.7	7.4
Mauritius	(,000)	95	119	148	181	217	238	252	274	283
	(%)	7.7	9.5	11.7	14.1	16.8	18.5	19.8	21.8	22.9

Papua New Guinea	(,000)	191	229	282	340	407	492	616	734	848
	(%)	2.8	3	3.3	3.7	4.1	4.5	5.3	5.9	6.5
Saint Lucia	(,000)	15	17	19	22	27	32	36	40	44
	(%)	8.5	9	9.7	11.2	13.4	15.6	17.5	19.2	21.1
Saint Vincent and the Grenadines	(,000)	7	8	9	12	15	16	18	19	20
	(%)	6.7	7.3	8.5	10.5	13.2	14.8	16	17.1	18.4
Samoa	(,000)	9	10	12	14	18	21	24	26	28
	(%)	5.1	5.2	5.9	7.1	8.3	9.6	10.5	11.1	11.4
Sao Tome and Principe	(,000)	6	7	7	9	11	14	16	21	28
	(%)	3.6	3.2	3.2	3.5	3.9	4.4	4.8	5.8	7.1
Singapore	(,000)	458	628	844	1 099	1 351	1 559	1 757	1 915	2 041
	(%)	9	11.2	13.9	17.3	20.5	23	25.4	27.4	28.9
Solomon Islands	(,000)	17	20	23	27	33	40	52	65	75
	(%)	3.3	3.4	3.5	3.8	4.3	4.9	5.9	6.8	7.4
Suriname	(,000)	34	37	43	53	67	79	90	96	106
	(%)	6.4	6.8	7.6	9	11.1	12.8	14.4	15.4	17
Timor-Leste	(,000)	33	40	47	54	59	60	64	56	68
	(%)	3.1	3.4	3.7	3.8	3.8	3.6	3.5	2.8	3.3
Tonga	(,000)	6	6	7	8	9	10	12	13	14
	(%)	5.9	5.9	5.9	6.8	7.3	8.1	9.1	9.7	10.1
Trinidad and Tobago	(,000)	110	129	155	177	202	211	219	232	259
	(%)	8.3	9.6	11.5	13.3	15.5	16.5	17.6	19.3	22.4
Vanuatu	(,000)	9	11	13	16	21	26	31	38	47
	(%)	3.9	4	4.5	5	6	6.7	7.6	8.5	9.9

Data are not available for Antigua and Barbuda, Dominica, Kiribati, Marshall Islands, Nauru, Palau, Seychelles, St. Kitts and Nevis and Tuvalu.

Source: World Population Prospects: The 2012 Revision (United Nations, 2013),

<http://esa.un.org/unpd/wpp/index.htm>

2. Dependency ratio* of the SIDS population (estimates), 2010-2050 by country

Country (SIDS)	Dependency Ratio	2010	2015	2020	2025	2030	2035	2040	2045	2050
Bahamas	Total	42	41	45	49	52	54	56	56	59
	Child	32	29	30	31	30	29	28	27	27
	Old-age	10	12	15	18	22	25	28	29	32
Bahrain	Total	28	31	30	30	29	31	34	37	46
	Child	25	28	26	24	21	19	19	19	20
	Old-age	3	3	3	6	8	11	15	18	27
Barbados	Total	42	43	46	50	55	58	61	62	63
	Child	27	27	27	27	27	27	28	27	28
	Old-age	15	16	19	23	28	31	33	34	36
Belize	Total	65	59	54	51	50	49	50	51	53
	Child	58	52	47	43	40	37	35	33	32
	Old-age	6	6	7	8	10	12	15	18	21
Cape Verde	Total	60	50	47	45	46	45	45	46	50
	Child	51	42	38	35	32	30	27	25	25
	Old-age	9	8	9	10	13	16	18	21	26
Comoros	Total	82	80	76	71	68	66	65	63	60
	Child	77	75	70	65	61	59	57	55	52
	Old-age	5	5	5	6	6	7	7	8	9
Cuba	Total	42	42	44	47	57	69	80	82	84
	Child	25	22	20	20	20	21	21	21	21
	Old-age	18	20	24	27	37	48	58	61	63
Dominican Republic	Total	59	57	55	54	53	53	54	54	56
	Child	50	46	43	40	37	35	33	31	30
	Old-age	10	10	12	14	16	18	21	23	26
Fiji	Total	51	53	54	53	53	52	52	53	55
	Child	44	44	43	40	37	35	34	33	32
	Old-age	7	9	11	13	15	17	18	20	23
Grenada	Total	53	51	51	51	51	48	47	50	57
	Child	42	40	40	38	34	30	27	27	27
	Old-age	11	11	12	14	17	18	20	23	30
Guinea-Bissau	Total	81	79	78	74	70	65	64	61	59
	Child	76	73	71	67	64	60	57	54	51
	Old-age	5	5	6	6	6	5	7	7	8
Guyana	Total	69	61	51	46	48	50	51	51	50
	Child	63	56	45	38	38	37	36	34	32
	Old-age	5	6	6	8	10	13	15	17	19

Haiti	Total	68	63	60	56	54	51	49	48	49
	Child	61	56	52	48	44	41	38	36	35
	Old-age	8	7	8	8	9	10	11	12	14
Jamaica	Total	58	52	52	52	55	57	58	57	58
	Child	46	40	38	36	35	33	31	29	28
	Old-age	12	12	14	16	20	24	27	28	29
Maldives	Total	54	50	49	47	44	43	43	46	53
	Child	46	42	41	38	32	28	25	25	25
	Old-age	8	7	8	10	12	15	18	21	28
Mauritius	Total	41	40	40	44	49	52	55	58	60
	Child	30	26	24	24	24	24	24	24	24
	Old-age	11	13	16	20	25	28	31	35	37
Micronesia (Federated States of)	Total	69	62	60	60	60	57	50	44	44
	Child	62	55	51	50	50	47	41	36	33
	Old-age	6	7	9	10	11	10	9	8	11
Papua New Guinea	Total	72	67	63	60	57	55	54	53	51
	Child	67	62	58	54	51	48	46	44	41
	Old-age	5	5	5	6	6	7	8	9	10
Saint Lucia	Total	51	47	45	46	48	50	52	54	57
	Child	38	34	31	29	28	27	25	25	24
	Old-age	13	13	14	16	20	23	27	30	33
Saint Vincent and the Grenadines	Total	50	47	46	47	49	50	51	53	55
	Child	40	36	34	31	30	28	27	26	26
	Old-age	10	11	12	15	20	22	24	26	28
Samoa	Total	76	74	72	67	66	68	69	68	65
	Child	68	65	61	55	53	52	51	49	46
	Old-age	9	9	10	12	14	16	18	19	19
Sao Tome and Principe	Total	82	81	75	68	62	60	59	58	58
	Child	76	75	69	62	56	53	51	49	46
	Old-age	7	6	6	6	6	7	8	9	11
Singapore	Total	36	36	40	47	53	58	62	65	69
	Child	24	21	20	21	22	22	21	20	20
	Old-age	12	15	19	25	32	36	41	45	49
Solomon Islands	Total	79	75	70	65	61	59	59	58	56
	Child	73	69	64	59	54	52	49	47	44
	Old-age	6	6	6	6	7	8	9	11	12
Suriname	Total	54	50	47	47	49	51	52	52	54
	Child	44	40	36	34	33	32	30	28	27
	Old-age	10	10	11	13	17	19	22	23	26

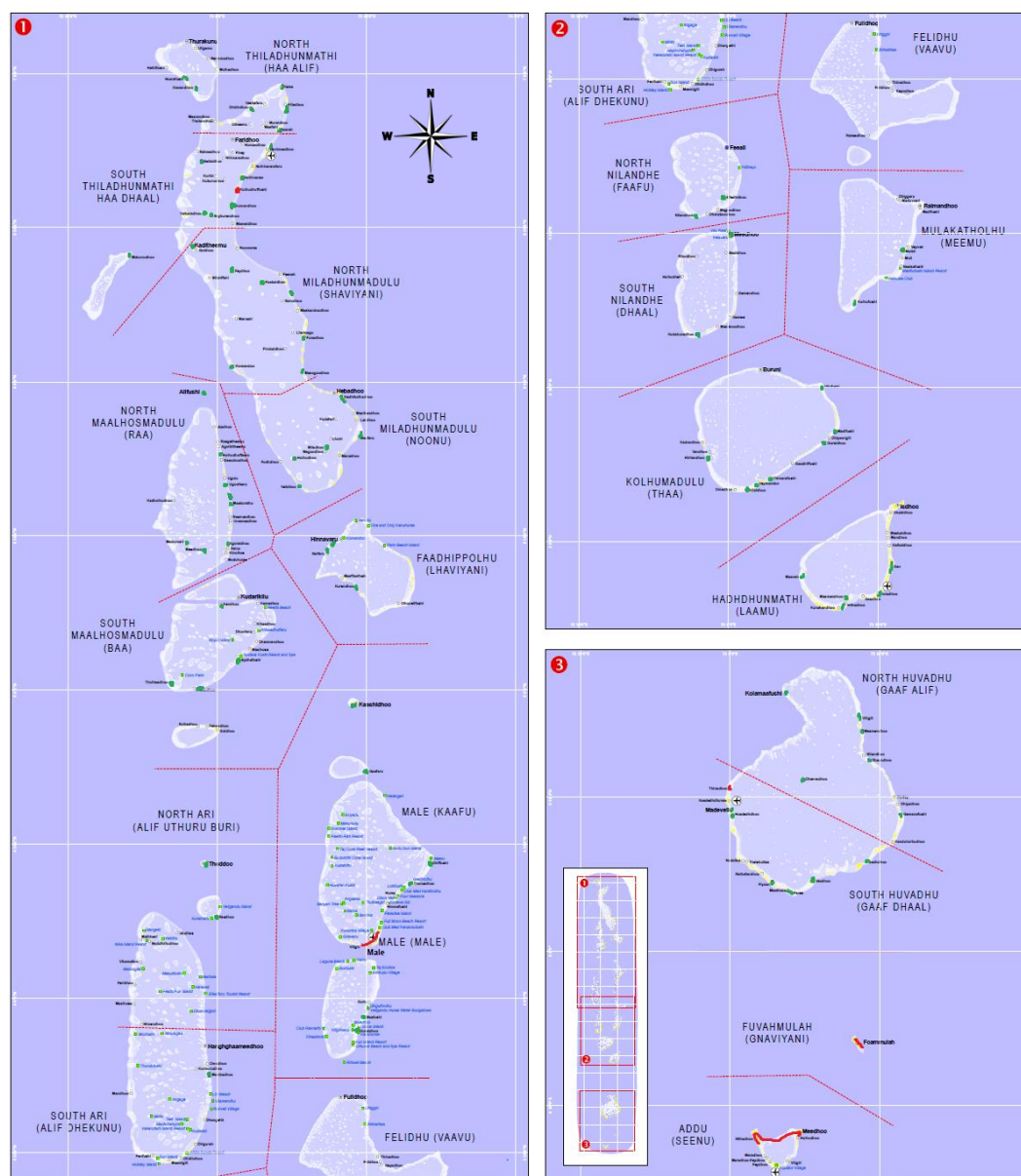
Timor-Leste	Total	102	93	92	90	87	79	70	61	57
	Child	95	86	85	83	80	73	64	56	52
	Old-age	6	7	7	7	7	6	6	5	5
Tonga	Total	76	74	68	63	62	63	65	63	60
	Child	66	64	58	52	50	50	50	48	44
	Old-age	10	10	10	11	12	13	15	16	16
Trinidad and Tobago	Total	41	44	46	47	49	49	52	56	63
	Child	29	30	30	28	26	24	25	26	27
	Old-age	12	14	17	20	23	25	27	30	37
Vanuatu	Total	73	67	64	58	57	56	55	54	54
	Child	66	60	56	50	48	45	43	41	39
	Old-age	7	7	7	8	9	10	12	13	15

* The total dependency ratio is the ratio of the sum of the population aged 0-14 and that aged 65+ to the population aged 15-64. The child dependency ratio is the ratio of the population aged 0-14 to the population aged 15-64. The old-age dependency ratio is the ratio of the population aged 65 years or over to the population aged 15-64. All ratios are presented as number of dependents per 100 persons of working age (15-64).

NB: Data is not available for Antigua and Barbuda, Dominica, Kiribati, Marshall Islands, Nauru, Palau, Seychelles, St. Kitts and Nevis and Tuvalu.

Source: World Population Prospects: The 2012 Revision, (United Nations, 2013), <http://esa.un.org/unpd/wpp/index.htm>

Appendix C: Maldives map and key developmental indicators



Source: United Nations office for Humanitarian Affairs, 2005.

Maldives - Key indicators

► LOCATION, AREA AND CLIMATE

Location

Latitude : 7° 6' 35" N to 0° 42' 24" S

Longitude : 72° 33' 19" E to 73° 46' 13" E

Area

Area (including sea) 115,300 sq. km

E.E.Z 859,000 sq. km

Climate

	<u>2012</u>	<u>Feb-13</u>	<u>Feb-14</u>
Rainfall (mm)	1,836.7	55.1	49.1
Average daily min. temp. (°C)	25.7	25.6	25.7
Average daily max. temp. (°C)	31.3	31.3	31.2
Lowest temp	20.4°C	23.1	21.6
Highest temp.	35.2°C	34.3	32.4

Number of Islands 1,192

Inhabited 188

Uninhabited 1004

Number of Inhabited Islands by size of Population

Population	<1000	1000-1999	2000-3999	4000-9999	10000+
No. of Islands	131	47	11	4	1

Number of Inhabited islands by Area (in hectares)

Area (in hectares)	1 - 39	40- 79	80 -99	100 - 199	200 - 300	300 - 520
No. of Islands	115	40	8	19	9	3

► POPULATION

	<u>2013</u>	<u>2014</u>
Both Sexes (<i>projections for mid-year</i>)	336,224	341,848
Male	169,800	172,575
Female	166,424	169,273

Census 2006

	<u>2006</u>
Male' (35 % of Total population)	103,693
Atolls	195,275
Average Annual Growth Rate	Republic 1.69%
(2000 - 2006)	Male' 5.59%
	Atolls -0.06%

► NATIONAL ACCOUNTS	2012	2013	2014
GDP (at 2003 constant prices)	(Est.)	(Prov.)	(Proj.)
GDP (million US\$)	1,611	1,671	1,746
Annual Growth Rate	1.3	3.7	4.5
GDP per Capita (US\$)	3,836	3,846	3,930
GDP (at current market prices)			
GDP (million US\$)	2,106	2,292	2,578

Published in Nov 2013

► BALANCE OF PAYMENTS	2012	2013	2014
(In million US\$)			(proj.)
Balance on Goods	-1,247.7	-1,438.6	-1,616.3
Goods: Credit	335.4	373.3	359.1
Goods: Debit	-1,583.1	-1,811.9	-1,975.4
Balance on Services	1,527.4	1,853.6	2,046.7
Balance on current transfers	-258.4	-265.2	-289.4
Financial Account	74.5		
Reserves	37.4		
Current account	-313.1	-232.4	-269.9
Current account (percent of GDP)	-14.9	-10.1	-10.5

► FINANCE	2012	2013	2014
(In million US\$)		(revised)	(Approved)
Total Revenue and Grants	657.5	761.1	981.1
Total Revenue	633.7	747.6	962.6
Grants	23.8	13.5	18.5
Total expenditure & net lending	850.2	868.6	1,064.9
Recurrent	669.0	738.0	816.6
Capital	187.0	138.3	255.8
Net Lending	-5.9	-7.7	-7.5
Overall Deficit	-216.5	-121.0	-102.3
Overall Deficit (percent of GDP)	-10.3%	-5.3%	-4.0%
Debt Service Ratio	3.4	3.3	na

► HEALTH	2011	2012
Life expectancy at birth (years)		
Male	72.8	73.0
Female	74.8	74.8
Infant mortality rate /'000 Live Births	9.0	9.0
Crude Birth Rate (CBR) /'000 Population	22.0	22.0
Crude Death Rate (CDR) /'000 Population	3.0	3.0
Still Birth Rate (SBR) /'000 Live Births	7.0	7.0
Maternal Mortality Rate (MMR)/'000 Live Births	0.6	0.13

EDUCATION				2012		
	<u>Students enrolled in the Maldives</u> <u>(Grade 1 to 12)</u>			<u>Teachers</u>	<u>% of untrained</u> <u>teachers</u>	<u>Student</u> <u>teacher ratio</u>
	Total	Male	Female	Total		Total
Republic	86,510	44,420	42,090	7,830	14	11
Male'	26,583	13,426	13,157	1,650	10	16
Atolls	59,927	30,994	28,933	6,180	15	10
Students enrolled by type of institution'						
(Grade 1 to 12)	Republic	%	Male	%	Atolls	%
Total	86,510	100	26,583	100	59,927	100
Government schools	62,151	72	15,770	59	46,381	77
Private schools	11,957	14	4,538	17	7,419	12
Community	12,402	14	6,275	24	6,127	10
Literacy Rate (Census 2006)	93.83%					

Source: Department of National Planning, 2013 (Maldives at a Glance).

<http://planning.gov.mv/publications/maldivesataglance/2014/03-MAG-March-2014.pdf>

Appendix D: Instrument for stakeholder interviews

Stakeholder Consultations: Semi structured Questionnaire

INTRODUCTION

Good morning/Afternoon/Evening. My name is _____ and I am studying for my PhD at the University of Waikato, New Zealand. For this, I am doing a research about wellbeing of the older people in Maldives. I want to learn about different aspects of life that affect their wellbeing and how much they influence overall wellbeing. To do this I am consulting a number of public and private organisations working with and for older people in Maldives, which will be followed by a sample survey of older people in the country.

In this regard, I have written earlier to the head of this organisation and he/she has agreed to take part in this consultation and arranged this meeting with you. I would like to consult you as people who you work closely with older people and have knowledge and experience regarding aspects of their wellbeing. I hope to conclude the discussion in 2 hours maximum and I would be recording this discussion for later analysis. I will be asking some questions to discuss the following areas:

- The key issues for wellbeing of ageing population in the country
- Unique characteristics of ageing in a smaller island compared to the capital Male'
- Key dimensions and factors affecting wellbeing in the context of Maldives, specifically in the domains of
 - Health and Nutrition,
 - Living environment,
 - Social connectedness and
 - Societal values
 - Rights to access.

QUESTIONNAIRE

Organisation:.....

Date/Time:.....

Venue: Place/island

atoll.....

.....

1. How would you describe the context of ageing in Maldives?
2. What demographic and economic characteristics influence wellbeing of older people?
3. What geographic and environmental characteristics influence wellbeing of older people?
4. How does ageing in Male' differ from ageing in a small island in the Atolls? Is the place of residence important for wellbeing?
5. Are there any differences in the social aspects of migrant and non-migrant older people? If so discuss the issues leading to these differences.
6. What are the key issues for wellbeing of older people?
7. What are the essential life dimensions that affect wellbeing of older people?
8. What are the aspects that enhance satisfaction with health in older people?
9. What factors in the living environment affect the wellbeing of older people? Discuss macro and micro level factors. Discuss both positive and negative factors. Is it different in Male' and in the islands?
10. How would you describe the situation of social support for older people? What factors affect social support? Is it different in Male' and in the islands?
11. How do older people interact with family and friends? Is it different in Male' and in the islands?
12. How would you describe the social participation of older people? What are factors affecting their participation in the society? Is it different in Male' and in the islands?
13. How does society/island community affect wellbeing of older people?
14. What beliefs are important for wellbeing of older persons? Discuss individual beliefs as well as societal beliefs.
15. What kinds of rights do older people have and perceive? Are there gaps in perceived rights and rights protected?

Appendix E: Survey instrument

English version

Screening

1. Assalam Alaikum. My name is Sheena Moosa. I am a researcher from the University of Waikato, New Zealand. I am calling to talk to (name). [if the person identifies as someone else], May I talk to him/her? [When the person comes to the phone], Are you (name)? [when the person on the phone is the identified], I had sent some information regarding the survey on wellbeing of the older people in the Maldives and you had indicated that you would like to participate. Do you agree to participate?
2. [If participant verifies the information], I am Sheena Moosa, a researcher at the University of Waikato, New Zealand studying for my PhD. I am calling to introduce myself and give you some more information about the survey on wellbeing of the older people I am conducting. In the survey interview I will be asking questions about your personal details such as age, marriage, education, and economic situation. Also I will be asking questions regarding your health status, social contacts, societal values, access to services and your satisfaction with these aspects and life in general. I would like you to know that your participation in this study is voluntary and you can let me know if you would like to withdraw any time or take a break from answering the questions during the interview.
3. [If the participant wants to continue to participate], The interview will take a bit more than half an hour. I will call back to do the interview on a day and time that will be convenient for you. Please try to be in a place where you can talk freely and in private. But I will leave it up to you either to have someone else with you or not at the time of the interview. What day and time shall I call to do the interview?
4. [Note day and time for interview]. Thank you. I will be calling you back on (date and time) on this number. End of call.

Introduction

1. AssalamAlaikum. My name is Sheena Moosa. I am a researcher from the University of Waikato, New Zealand.
2. [when the participant is verified], I am Sheena Moosa. I am calling to conduct the interview for the survey on wellbeing of the older people in the Maldives. Let me again inform you that your participation in this study is voluntary and you can let me know if you would like to withdraw. Would you like to continue?
3. [If the participant wants to continue to participate], The interview will take a bit more than half an hour. First I will be asking questions about your personal details such as age, gender, marriage, education, and living arrangements. Then I will be asking questions regarding your economic situation, access to goods and services, social values and norms, social connectedness, your health and your satisfaction with these aspects and life in general. If you don't want to answer any questions please let me know. Then I will to the next question. Are you in a place where you can talk freely without interruption? Shall we start?
4. [End of Introduction. Proceed to questionnaire].

Questionnaire

- | | |
|---|--|
| ☐(Date) | ☐(Respondent No.) |
| ☐(Begin time) | ☐(Atoll/Island) |
| ☐(Time taken to complete) | ☐(Urban/rural) |
| ☐(No of calls to complete) | ☐ (Distance to Atoll capital) |

Comments: (e.g. Respondent alone or not; anyone helping respondent to give answers.....)

.....
.....
.....
.....

To start with, I would like to ask some **background questions** about you regarding age, marriage, children, residence etc.

1. Can you tell me when (the year) you were born?
 - ☐ (birth year/age in years)
2. Are you?
 - ☐ Male
 - ☐ Female
3. What is the highest educational qualification you have achieved?
 - ☐ Can't read and write
 - ☐ Read and write
 - ☐ Primary
 - ☐ Vocational
 - ☐ Secondary
 - ☐ Graduate
4. Are you now?
 - ☐ Married
 - ☐ Divorced
 - ☐ Widowed
 - ☐ Never married [**Dont ask Q5**]
5. How long have you been married?
 - ☐ __ (number)
6. How many people have you been married to?
 - ☐ __ (number of years)
7. How many children did you have (including those by birth and those you looked after)?
 - ☐ __ (number)
 - ☐ None
8. How long have you been living on this island?
 - ☐ From childhood [**Dont ask Q9**]
 - ☐ (numeric- number of years)
9. Why did you come to live on this island?
 - ☐ Marriage
 - ☐ Education
 - ☐ To be with family members
 - ☐ Business
 - ☐ Medical purposes
 - ☐ Other (specify).....

10. Can you tell me about the house you are living in? Is it...

- | | |
|---|---|
| ☐ Owned by self and/or spouse | ☐ Rented house |
| ☐ Owned by another family member | ☐ Rented unit in a house |

11. Who do you live with?

- | | |
|--|--|
| ☐ Spouse | ☐ Non relatives/Friends |
| ☐ Spouse and children | ☐ Alone |
| ☐ Children and or grandchildren | ☐ Other, specify |
| ☐ Other relatives | |

12. How satisfied are you with the conditions of your living place?

- | | |
|--|---|
| ☐ 5- Very Satisfied | ☐ 2- Dissatisfied |
| ☐ 4- Satisfied | ☐ 1- Very dissatisfied |
| ☐ 3- Neither satisfied nor dissatisfied | |

13. Where would you like to live for the rest of your life?

- | | |
|--|--|
| ☐ This place | ☐ In an institution |
| ☐ My (family) house | ☐ No specific place |
| ☐ Children's house | ☐ Other, specify..... |

*The next questions relate to your **economic situation** and your **access** to basic goods and services. Please think of your situation in the last 4 weeks when you answer these questions. Can you tell me...*

14. From where (or how) do you get money to spend for yourself?

- | | |
|---|--|
| ☐ Pension (OAP) | ☐ Family/friends |
| ☐ Work | ☐ Didn't get any |
| ☐ Owned assets (e.g rent from own house, boat) | ☐ Other, specify...(e.g. interest on money) |

15. Have you enough money to meet your needs?

- | | |
|---------------------------------------|---------------------------------------|
| ☐ 5-Completely | ☐ 2-A little |
| ☐ 4-Mostly | ☐ 1-Not at all |
| ☐ 3-Moderately | |

16. Have there been times in the past 4 weeks when you found it difficult to have the following things because you could not afford them?

	No, always have (3)	Sometimes (2)	Yes (1)cant afford
Essential food items	☐	☐	☐
Essential clothing & hygiene items	☐	☐	☐
Essential durable items	☐	☐	☐
Housing	☐	☐	☐
Consult the doctor	☐	☐	☐

17. Are you currently engaged in any type of work?

- | | |
|---|--|
| ☐ Don't do any work | ☐ Voluntary work |
| ☐ Paid work/employment | ☐ Household work |
| ☐ Own work/business | ☐ Other, specify..... |

18. What are the things that limit you from working/having a job?

- | | |
|--|--|
| ☐ No difficulties | ☐ Employers don't hire old people |
| ☐ Compulsory retirement | ☐ Poor health |
| ☐ My children don't want me to work anymore | ☐ Others (specify)..... |
| ☐ No way to learn new skills | |

Now think about your economic situation and tell me,

19. How satisfied are you with your economic standard of living? How would you rank it on a scale of 5-1, with 5 being 'very satisfied' and 1 being 'very dissatisfied'?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

20. In the past 4 weeks did you do any of the following?

	A lot (3)	Some (2)	No (1)
Go to the doctor	☐	☐	☐
Use a phone	☐	☐	☐
Use internet	☐	☐	☐
Use land transport	☐	☐	☐
Use sea transport	☐	☐	☐

21. Who generally provides you with social support?

- | | |
|-------------------------------------|---|
| ☐ Family | ☐ Government institution |
| ☐ Friends | ☐ Private institutions |
| ☐ Paid Carer | ☐ Don't get any support |

22. Do you have any difficulties in getting health services you need?

- | | |
|---|---|
| ☐ No (have good access) | ☐ Not enough money |
| ☐ Needed service not available | ☐ Difficult to get transport |
| ☐ No one to accompany/ take me | ☐ Not enough information |
| ☐ Long waiting time | ☐ Others, specify..... |

23. Do you have any difficulties in getting your old age pension money?

- | | |
|---|---|
| ☐ No (have good access) | ☐ Difficult to get transport |
| ☐ Banking service not available | ☐ Not enough information |
| ☐ No one to help me to get the money | ☐ Others, specify..... |

Now thinking about your access to basic goods and services overall and tell me:

24. How satisfied are you with your overall access to basic goods and services you need (on a scale of 5-1, with 5 being 'very satisfied' and 1 being 'very dissatisfied')?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4- Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

*Now I am going to ask about the **social values and norms** of the island where you are living in. Think about the island community where you live and tell me what you have observed in the last 4 weeks.*

25. Is safe to walk around on the streets (of the island)?

- ☐ 3- Mostly safe
- ☐ 2- Some times
- ☐ 1- Not at all safe

26. In the past 4 weeks, did you observe that people have to be very careful in dealing with others (on the island) or you can trust them?

- ☐ 3-Most people can be trusted
- ☐ 2-Some can be and some can't be
- ☐ 1-Have to be very careful

27. In the past 4 weeks, did you observe that people (on the island) respect elders?

- ☐ 3-Most people do
- ☐ 2-Some do and some don't
- ☐ 1-Most people don't

28. In the past 4 weeks, did you observe that people (on the island) look after their elderly parents and relatives?

- ☐ 3-Most people do
- ☐ 2-Some do and some don't
- ☐ 1-Most people don't

29. In the past 4 weeks, did you observe that people in your island volunteer to help neighbours and others?

- ☐ 3-Most people do
- ☐ 2-Some do and some don't
- ☐ 1-Most people don't

Now think about these social values and norms of the island and tell me:

30. How satisfied are you with the extent to which your community practices accepted social values and norms (like the values we just talked about trust, respect...) of your community (on a scale of 5-1, with 5 being 'very satisfied' and 1 being 'very dissatisfied')?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

*Now I have some questions about your **social connectedness**. Think about all the contacts you have had with other people in the past 4 weeks. These people might be spouse, children, other family members, friends, neighbours, colleagues etc.*

Can you tell me:

31. How many people do you have frequent contact with (both friends and family)? Let's start with those who you live with [*note the relationship and if same relationship say 1st, 2nd ...*]

Family members

- ☐
- ☐
- ☐
- ☐
- ☐

Friends/non family

- ☐
- ☐
- ☐
- ☐
- ☐

32. Thinking of the your family members who you live with, how often do you spend time (talking or doing something with) with them?

- ☐ 3-Daily/continuous
- ☐ 2-Weekly
- ☐ 1-Monthly or more

33. Thinking of the your family members who don't live with you, how often do you spend time (talking or doing something with) with them?
- ☐ 3-Daily/continuous
 - ☐ 2-Weekly
 - ☐ 1-Monthly or more
34. Thinking of the your friends, how often do you spend time (talking or doing something with) with them?
- ☐ 3-Daily/continuous
 - ☐ 2-Weekly
 - ☐ 1-Monthly or more
35. Thinking of the family members you have most contact with who don't live with you, how do you generally contact them?
- ☐ 3-In person mostly
 - ☐ 2-In person and by phone
 - ☐ 1-By ICT (email, skype)
36. Thinking of the friends you have most contact with who don't live with you, how do you generally contact them?
- ☐ 3-In person mostly
 - ☐ 2-In person and by phone/ICT
 - ☐ 1-By ICT (phone, email, skype)
37. Where do you commonly meet your family members?
- | | |
|---|---|
| ☐ At this house or their house | ☐ Don't meet them |
| ☐ On the street | ☐ Others, specify..... |
38. Where do you commonly meet your friends?
- | | |
|---|---|
| ☐ At home my house/their house | ☐ Near mosque |
| ☐ On the street | ☐ Work |
| ☐ At beach side/holhuashi | ☐ Don't meet them |
| ☐ Market place/shops | ☐ Others, specify..... |
39. In the past 4 weeks, in your relationships with others (family and friends), how would you describe the giving and receiving of support?
- ☐ 3- I **receive as much as I give** support and help
 - ☐ 2-I **give more** support and help than I receive
 - ☐ 1-I **receive more** support and help than I give

40. In the past 4 weeks, how often did you do any of the following activities?

	Quite often (3)	A few times (2)	No (1)
Had a meal with family	☐	☐	☐
Go to the mosque	☐	☐	☐
Go shopping	☐	☐	☐
Gone out with friends (eg. hangout, walk)	☐	☐	☐
Participated in a community activity (eg. meeting, talk)	☐	☐	☐

41. What limits you from engaging in social activities with friends, family and community?

- | | |
|---|--|
| ☐ Nothing (I have no difficulties) | ☐ Safety concerns |
| ☐ Poor health | ☐ Not enough money |
| ☐ Living arrangement | ☐ I am not invited |
| ☐ Transport difficulties | ☐ Other, specify..... |

42. On a scale of 5-1, with 5 being ‘very satisfied’ and 1 being ‘very dissatisfied’ how satisfied are you with your social connectedness with your family members?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

43. On a scale of 5-1, with 5 being ‘very satisfied’ and 1 being ‘very dissatisfied’ how satisfied are you with your social connectedness with your friends?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

44. On a scale of 5-1, with 5 being ‘very satisfied’ and 1 being ‘very dissatisfied’ how satisfied are you with your overall social connectedness with family, friends and community members all together?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

Next I am going to ask about things related to your **health** in the past 4 weeks..

45. How would you describe your health? Would you say it is:

- | | |
|--|---------------------------------------|
| ☐ 5- Very good | ☐ 2- Poor |
| ☐ 4- Good | ☐ 1- Very poor |
| ☐ 3- Neither bad nor good | |

46. Do you have enough energy for everyday life?

- | | |
|--|--|
| ☐ 5- Completely | ☐ 2- A little |
| ☐ 4- Mostly | ☐ 1- Not at all |
| ☐ 3- Moderately | |

47. How well are you able to get around (e.g. doing your daily activities, walking, climbing)?

- | | |
|---|---------------------------------------|
| ☐ 5- Very good | ☐ 2- Poor |
| ☐ 4- Good | ☐ 1- Very poor |
| ☐ 3- Neither poor nor good | |

48. To what extent do impairments to your senses (e.g. hearing, vision, taste, smell, touch) prevent you from doing what you need to do in daily life?

- | | |
|---|---|
| ☐ 5- Not at all | ☐ 2- Very much |
| ☐ 4- A little | ☐ 1- An extreme amount |
| ☐ 3- A moderate amount | |

49. To what extent do you feel that physical pain prevents you from doing what you need to do?

- | | |
|---|---|
| ☐ 5- Not at all | ☐ 2- Very much |
| ☐ 4- A little | ☐ 1- An extreme amount |
| ☐ 3- A moderate amount | |

50. How much do you need any medical treatment to function in your daily life?

- | | |
|---|--|
| ☐ 5- Not at all | ☐ 2- Very much |
| ☐ 4- A little | ☐ 1- A extreme amount |
| ☐ 3- A moderate amount | |

51. How satisfied are you with your ability to perform your daily living activities?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

52. How satisfied are you with your capacity for work?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

53. How satisfied are you with your sleep?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

54. How much do you enjoy life?

- | | |
|---|--|
| ☐ 5- An extreme amount | ☐ 2- A little |
| ☐ 4- Very much | ☐ 1- Not at all |
| ☐ 3- A moderate amount | |

55. To what extent do you feel your life to be meaningful?

- | | |
|---|--|
| ☐ 5- An extreme amount | ☐ 2- A little |
| ☐ 4- Very much | ☐ 1- Not at all |
| ☐ 3- A moderate amount | |

56. How well are you able to concentrate?

- | | |
|---|--|
| ☐ 5- Extremely | ☐ 2- A little |
| ☐ 4- Very much | ☐ 1- Not at all |
| ☐ 3- A moderate amount | |

57. How often do you have negative feelings such as blue moods, despair, anxiety, depression?

- | | |
|---|--|
| ☐ 5- Never | ☐ 2- Very often |
| ☐ 4- Seldom | ☐ 1- Always |
| ☐ 3- Quite often | |

58. Are you able to accept your bodily appearance?

- | | |
|--|--|
| ☐ 5- Completely | ☐ 2- A little |
| ☐ 4- Mostly | ☐ 1- Not at all |
| ☐ 3- Moderately | |

59. How satisfied are you with your self?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

Now think about your overall health and tell me:

60. How satisfied are you with your health status (on a scale of 5-1, with 5 being 'very satisfied' and 1 being 'very dissatisfied')?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

*Now about your **overall wellbeing**,*

61. Taken all together, how satisfied are you with your life as a whole (on a scale of 5-1, with 5 being 'very satisfied' and 1 being 'very dissatisfied')?

- | | |
|---|--|
| ☐ 5-Very Satisfied | ☐ 2-Dissatisfied |
| ☐ 4-Satisfied | ☐ 1-Very dissatisfied |
| ☐ 3-Neither satisfied nor dissatisfied | |

That brings us to the last question. Is there anything else about your wellbeing that you would like to tell me?

.....

.....

.....

.....

.....

.....

.....

.....

THANK YOU VERY MUCH FOR YOUR TIME AND FOR YOUR
ANSWERS. WASSALAM ALIKUM.

اَللّٰهُمَّ صَلِّ وَسَلِّمْ عَلٰى سَيِّدِنَا مُحَمَّدٍ

יִרְמְיָהוּ בְּנֵי דָוִד

..... □ *نَمُو و نَمُو دَر رَی مَر نَمُو سَر سَر مَر* □ *نَمُو دَر رَی مَر نَمُو*

..... ☐ سَر دَسَر یَک مَر یَک مَر ☐

..... □ □

رُفُوفٌ

اَيُّكُمْ اَلَّذِي؟ (دستِ اُس: اِسْتَعْمَدُوا نَعْمًا جَرَّ اِسْمِ اَلْمُسْتَدْرِكِ فَيُسْتَأْذِنُ سَوَاءٌ اَلْاَسْمَاءُ؟) جَوَّزْتُ اَلْمُسْتَدْرِكَ

از رقبه بروم؟

.....

.....

.....

[illegible]

1. جَرِّمُوا ذُنُوبَكُمْ بِرُؤُوسِكُمْ سُرٌّ؟

(.....) ☐

2. یے سُرُو؟ (سُورِیہ سُرَا سُرَیج)

محرر

دسترسز

3. **فَلْيُذَكِّرُوا** اَنْسَدَ رَاكِبُوهُ **مِنْ قَبْلِ** اَنْ يَسْتَوْفُوا **لَهُ** اَمْوَالَهُمْ **وَلْيُذَكِّرُوا** اَنْ يَكُونُوا **مِنْ** اَلْخٰسِرِيْنَ (يَعْنِي اَنْ يَكُونُوا اَمْوَالُهُمْ اَمْوَالًا مَبْنِيًّا عَلَى الْفِتْرِ. رَدُّوْا لَهُمْ.....)

□ **خُذْ سِرِّي** □ **سِرِّي**

□ وَنَاثِرٌ مُّذْهِبٌ لِّلْخَبَرِ □

اگر سرے/اگر سب سے

☐ ۱. تھیں۔ ☐ ۲. نہ تھے۔

4. چرڼم اړخيز چرڼا اړخيزه؟ (اړخيزه سترسيزه وېرې ستره ژورنيزه اړخيزه ستره)

☐ اړخيزه ☐ چرڼم اړخيزه چرڼم اړخيزه (س.د. 6 اړخيزه)

☐ وېرې ستر (س.د. 6 اړخيزه) ☐ چرڼم اړخيزه چرڼم اړخيزه (س.د. 7 اړخيزه)

5. چرڼم اړخيزه چرڼم اړخيزه چرڼم اړخيزه؟ (س.د. 7 اړخيزه) (س.د. 7 اړخيزه) (س.د. 7 اړخيزه) (س.د. 7 اړخيزه)

☐ (س.د. 7 اړخيزه).....

6. رڼيزه چرڼم اړخيزه چرڼم اړخيزه؟

☐ (س.د. 7 اړخيزه)

7. چرڼم اړخيزه چرڼم اړخيزه چرڼم اړخيزه؟ (س.د. 7 اړخيزه) (س.د. 7 اړخيزه) (س.د. 7 اړخيزه) (س.د. 7 اړخيزه)

☐ (س.د. 7 اړخيزه)

8. چرڼم اړخيزه چرڼم اړخيزه چرڼم اړخيزه؟

☐ (س.د. 10 اړخيزه)

☐ (س.د. 7 اړخيزه)

9. چرڼم اړخيزه چرڼم اړخيزه چرڼم اړخيزه؟

☐ چرڼم اړخيزه چرڼم اړخيزه ☐ چرڼم اړخيزه چرڼم اړخيزه

(س.د. 7 اړخيزه)

☐ چرڼم اړخيزه چرڼم اړخيزه ☐ چرڼم اړخيزه چرڼم اړخيزه

☐ چرڼم اړخيزه چرڼم اړخيزه ☐ چرڼم اړخيزه چرڼم اړخيزه

10. چرڼم اړخيزه چرڼم اړخيزه چرڼم اړخيزه؟ (س.د. 7 اړخيزه) (س.د. 7 اړخيزه) (س.د. 7 اړخيزه) (س.د. 7 اړخيزه)

☐ چرڼم اړخيزه چرڼم اړخيزه ☐ چرڼم اړخيزه چرڼم اړخيزه

(س.د. 7 اړخيزه)

☐ چرڼم اړخيزه چرڼم اړخيزه ☐ چرڼم اړخيزه چرڼم اړخيزه

[illegible]

□ اِسْرَیٰ / اِیْمَرِ دِرَّ اَلَّ اَنِّ وَ اِیْمَرِ □ مَعْدِ اِیْمَرِ سَرِّ اَنِّ

□ اِسْمُ الْغُزَيْرِ / اِسْمُ الْغَزَّارِ □ اِسْمُ الْغُزَيْرِ

کتابخانه سرسبز

□ كَرِيمٌ سَرِيدٌ لَدَا / دَدَا لَدَا لَدَا □ □ اَزْ سِرِّ سِرِّ □

کرمج سرسبز

□ مَدِّي دَر سَر سَرَد

12. دُرُغْمُ كَرِيمٍ لَقَدْ فَتَنَّا لُطْفًا لِّقَوْلِهِمْ هَٰؤُلَاءِ أَكْبَرُ مِنْكُمْ أَمْ لَمْ يُبْدِئْ بِهِمُ الْبَاقِ وَالْآخِرُ لَعَلَّهُمْ يَرْجِعُونَ

1أَيُّ وَغَمٍ يَجُوزُ فِيهِ لَدُنَّكَ 5-1 أَتَقَعُّهُمُ أَكْفَرًا سَرِيحًا سَرِيحًا نَسْرُ أَكْفَرًا؟ (سُورَةُ الْاِنْفِرَاتِ 5) لَدُنَّكَ

زُجِرَ زُجِرَ سُرُورًا بِأَمْرِيَا

□ 5- وَمَا سُرُّ بِمِثْرِ دَعَرٌ
□ 2- بِمِثْرِ دَاوُدَ سُرْعٌ

□ 4- رِفْعُ الرَّفْعِ □ 1- وَفَعُ الرَّفْعِ وَفَعُ الرَّفْعِ □

□ 3- دُفِرْدِ سُرُوْعَمَرْ (وَلَا يَفْرُدْ عَمَرْ سُرِيْرَ سُرْعَمَرْ وَنُو سُرْعَمَرْ سُرُوْعَمَرْ)

13. نَبْرَأْنُو اَقْرَبُو سَمِیْیَیْ یَرْجِعْ لَیْسَ فِیْ سَمِیْیَیْ اَنْتُمْ سَمِیْیَیْ؟ (عَوَّضْتُ عَنْ اَنْتُمْ سَمِیْیَیْ یَا نَبْرِیْ. دَسْخُلْ اَنْتُمْ....)

□ جی □ (تروئید رتری) دیمایری □

□ اِحْدِثْ كَيْسَ / يَمِيَسَ □ تَسْرُفِي سِرْهُنْ وَبِرْ رُو □

☐ تَرَجِمَ سِدْرَتُكَ إِلَى ☐ اَرْتَبِعْ سِدْرَتُكَ

[illegible]

رَبِّهِمْ فَتُحْيَاهُ فَتَمِيتُهُ ۚ لَهُ تُخَفِّدُ السَّيْفَ وَتُغْرِقُ ۚ لَهُ الْغَايَةُ ۚ لَهُ السَّمْعُ ۚ لَهُ الْبَصَرُ ۚ لَهُ الْغُفْرَانُ ۚ

14. زمره نامبرو فرمايو ڇا سڃاڻي ٿو ته (جوهن ٿورو) ڇا ڪم ڪندو آهي؟ ڇا (زير ڪم آهي) ڇا (ختم ٿيو آهي)؟

☐ کروسیو چرسر سر کراسید

☐ چودی چرسر سر کراسی کراسی

برسروشور یازد

« > 0 < 4 / 0 < 0 < 0 > / 0 / / / > »

[illegible]

□ **الدكتور محمد حسن (المهندس محمد زكريا، أ.م.ع.)** □ **الدكتور محمد زكريا (م.ع.م.)**

مُحرَّر

15. مَدَّيْ اَلْحِلْزُ نَسْرَقَا لِمَنْ نَسْرَعُوْعَمَرْ قُرَاسٌ اَلْوَرَعِيْمُو؟ (تَوَوْتَرُوْسَرِ اَلْقُرَشُوْسَرِقُوْا نَبْرِيرِ. دِسُوْا نَسْرُ....)

$\frac{1}{n} \sum_{i=1}^n x_i$ □ $\frac{1}{n} \sum_{i=1}^n y_i$ □

□ $\text{يسر السري من السرور سر السرير}$ □ $\text{الزور سر السرور سر}$

□ زُكْرٌ دَسْرُوعٌ لَسْرُوعٌ لَسْرُوعٌ

16. جِئِرْ دَر (جِئِرْجِيو رَجَمَرْ رَقْمَكُ فَعْيَا) نَزْد سَرْمِي سَر جِئِسَّر نَسْرِمَاوَا اَنَوَسُوغَر نَرْ سُرُو بَرِمَاوَا؟ (15 وَسَرْ سُوغَر)

[illegible]

سُرُورِ	وَرْدِ	وَرْدِ
(1)	(2)	(3)

□ □ □ *የሥራ ጥያቄ?*

[illegible]

سُرُودِ کِرمِ؟

(اَللّٰهُمَّ سِرِّ لِسْرِزَسْرَعَسَرْو) فَاِلَهِ سِرِّ

□ □ □ *وَرَبِّكَ لَئِنْ لَمْ يَنْفَخِ فِي سُوفِهِ لَإِذَا هُمْ مُرْتَدُونَ؟ (٧٦)*

سُرُورِ رَاسِ مَعْرُوفِ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ (بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ) سُبْحَانَكَ

[illegible]

مَنْزِيَّةٌ لِمَنْزِلِ رَسُوْلِنَا مُحَمَّدٍ (عَلَيْهِ السَّلَامُ وَآلِهِ وَصَحْبِهِ أَجْمَعِينَ)

- **اَللّٰهُمَّ رَسُوْلَیْكَ سُرْعَتُ**
- **وَّوَسْطَیْهِ (اَلْذَرِیَّةُ سُرْعَتُ) رَسُوْلُیْ**

□ اَلْزُّكَّرُ سِرٌّ وَيَحْزَنُ اَلْاَمْرُ □ □ يَفْتَتِي دَسْرُ اَلْمَوْ □

□ اَلْحَمْدُ لِلّٰهِ الَّذِيْ اَوْفَقْنَا □ اَللّٰهُمَّ اِنِّىْ اَسْأَلُكَ

18. אֲדַסְרָא לֹא זָכַרְתָּ לְפָנֶיךָ תְּרִימוֹ נִלְוֵה לְפָנֶיךָ? (עֲוֹנוֹתֵינוּסְאֵי אֲבִיבְשִׁימֵנוּסְאֵי בְּהִתְרַחֵם, חֲרִיבוֹ זְכַרְךָ נִלְוֵה לְפָנֶיךָ תְּרִימוֹ)

- اَللّٰهُمَّ كَرِّمْ لَنَا سَمِيَّ □ وَجْعَلْ كَرِّمَ جَرِّسِمْ دَسْلَايَ سِرْسَلَا سَمِيَّ وَجْعَلْ لَنَا سَمِيَّ

- 65 اَرْعَ وَدَسْرُزْ وَجْغَرِي سَرْعَرَوِي □ بَدَنِي رُفُو رَعِي رَعِي □

- كَرَمُ سِرِّ الْوَلَدِ سِرِّ زَمِي □ اَزْ سِرِّ سِرِّ □

- [illegible]

19. تَبَرُّكُكَ يَا دُرُّ قُرُونٍ دُرُّ رُفُوحٍ زَيْبٍ يَا رَوْحَ لَاسٍ؟

- 5- وَعُزِّرَ رَفِيزُ دَعْوَةٍ □ 2- رَفِيزُ دَعْوَةِ سُرْمَةٍ □

- 4- رَمِزُ دُخْرُ □ 1- وَخَرُّ رَمِزُ دُ سَرِخُ □

- 3- دُفِرْدُ سُرُوْعَمَرْ (وَأَرْفَعُ رُفْعًا سَرِيعًا وَنُفْسٌ سَرِيعٌ سُرُوْعٌ)

20. لَمْ يَكُنْ لَكَ سُلْطَانٌ عَلَى شَيْءٍ مِّنْ شَيْءٍ إِذْ يَخْلُقُ مَا يَشَاءُ لَكَ تَرْجِعُ الشَّيْءَ إِلَىٰ ذِي الْعَرْشِ الْعَظِيمِ (النَّازِعَاتُ ٢٠)

لَا تَسْأَلْنِي عَنْ دِينِي وَأَنَا أَسْأَلُكَ عَنْ دِينِكَ فَارْجِعْ بِي إِلَى دِينِكَ وَالنَّاسُ قُلُوبُ

- وَعَزَّزْ سُرُجًا سُرْ وَعَزَّزْ دُكْرًا سُرْ سُرُجًا سُرْ (1)

(3)

- □ □ *بِسْمِ الرَّحْمَنِ الرَّحِيمِ (بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ)*

﴿وَسِرِّي سِرِّ خُفْرٍ﴾ سِرِّ سِرِّ رَاغِبٍ سِرِّ؟

- □ □ $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$ ؟

- دِسْتِجِ مَسْرُوعِ (دِسْوَرَاں سَدَاہِجِ)
- دِسْتِجِ مَسْرُوعِ؟

- [illegible]

وَسِّرْ، هَيِّئْ، سُدِّدْ لَكَ مَرْكَبًا؟

- □ □ *الْأَسْبَحُ رُبِّي سُبْحَكَ يَا مَنْ لَا يُعْرَفُ (تَعْبَرِي*

سَرَرُوْند؟

21. اِنْعَمِدْ اِلَيَّ بِعَمَلِكَ وَسَيِّئَاتِكَ اَمْ تَكْفُرُ؟ اِنْعَمِدْ اِلَيَّ بِعَمَلِكَ اَمْ تَكْفُرُ؟ اِنْعَمِدْ اِلَيَّ بِعَمَلِكَ اَمْ تَكْفُرُ؟ اِنْعَمِدْ اِلَيَّ بِعَمَلِكَ اَمْ تَكْفُرُ؟

(فَسَمِعَ سَرَّ كَرَامٍ، نَادٍ، فَسَمِعَهُمْ يَقْرَأُونَ (وَرَأَى كَرَامٌ وَرَأَى أَعْدَاءَهُمْ قُرْآنًا)، كَرَامٌ

رکتر سځې، لاس لاس سر سځې وکړه ځو ځو لاس لاس وکړه سځې (د لاس لاس وکړه سځې وکړه سځې)
 (ځو ځو سځې وکړه سځې)

- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې
- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې
- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې
- 22. رځو ځو لاس لاس وکړه سځې (ځو ځو لاس لاس وکړه سځې) (ځو ځو لاس لاس وکړه سځې)
- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې
- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې
- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې
- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې

ځو ځو سځې

23. ځو ځو لاس لاس وکړه سځې (ځو ځو لاس لاس وکړه سځې) (ځو ځو لاس لاس وکړه سځې)
 (ځو ځو لاس لاس وکړه سځې)

- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې
- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې
- ☐ لاس لاس وکړه سځې ☐ لاس لاس وکړه سځې

24. ځو ځو لاس لاس وکړه سځې (ځو ځو لاس لاس وکړه سځې) (ځو ځو لاس لاس وکړه سځې)
 (ځو ځو لاس لاس وکړه سځې)

- ☐ 5- وکړه سځې ☐ 2- وکړه سځې
- ☐ 4- وکړه سځې ☐ 1- وکړه سځې
- ☐ 3- وکړه سځې (وې وکړه سځې وکړه سځې)

ځو ځو لاس لاس وکړه سځې (ځو ځو لاس لاس وکړه سځې) (ځو ځو لاس لاس وکړه سځې)
 (ځو ځو لاس لاس وکړه سځې)

وَسُورَةُ الرَّحْمٰنِ (سُورَةُ الرَّحْمٰنِ)

□ یَسْرِدْزِسْرَنَامَ

□ $\mathbb{S}^1 \times \mathbb{S}^1 \cong \mathbb{S}^1 \vee \mathbb{S}^1 \vee \mathbb{S}^2$ $\mathbb{S}^1 \times \mathbb{S}^1 \cong \mathbb{S}^1 \vee \mathbb{S}^1 \vee \mathbb{S}^2$

□ **يَسْرُدُكُمْ سُرَاتًا**

[illegible]

زَعِمْدَسُوْمُ تَرَفُّعًا يَرْوَعُلَانُ رِيْمَزِدْعُ؟ دِسْزَلَانُ 5 يَرْوَعُلَانُ رِيْمَجِدْعُ زَسْرَ لَدُسْرُوْنِ، اِيْلَا وَكُنْ رِيْمَزِدْسُجُ

لَا تُرْوَرُ 5-1 اَكْرَفُكُمْ اَكْرَمُ سُرُورُ سُرُورٍ؟ (سُرُورُ 1 اَلْاَسْرُ 5 رُفْعُ رُفْعٍ اَكْرَفُكُمْ رُفْعٍ)

□ 5- وَاَمْرٌ بِرَبِّكَ زَجَرٌ

□ 2- رَبِّكَ زَجَرٌ سُرْعَةٌ

□ 4- رِفْوَزْدُخْ

□ 1- وَغَرْزُ رِفْوَزْدُ سُرْعِيْ

□ 3- دُفِرْدُ شَرُوعُهُ (وَيْلٌ لِّمَنْ رَزَقَهُ الرَّسْمُ سَرِيحُ الرَّاسِ وَنُورُ شَرُوعِهِ)

اَللّٰهُمَّ اِنِّىْ اَسْأَلُكَ بِرَحْمَتِكَ الَّتِىْ رَحِمْتَ بِهَا نُوْحًا وَاِسْحٰقَ وَاٰدَمَ وَاَنْتَ اَعْلَمُ

(رَبِّهِ) يَاسْتَرْفِعُ لَنَا وَيُسْتَرْفَعُ.

31. אֲשֶׁר דִּי סִבְסִי וְדִי רִכְרִיכוֹ דִּירְסִיָּה וְחָ? אֲשֶׁר דִּי חֲמִידָא דִּירְסִיָּה דִּירְסִיָּה. תְּרִימָא חֲסִיָּה. (דִּירָא רִבִּי דִּירְסִיָּה)

سُرْعَتُهُ، دَسُونُ سُرْعَةٍ، تَرْدٌ، اَلْاِيْدُ اَلْعُزِيْزَةُ، 2، تَعَزُّزٌ، دَسُونُ سُرْعَتِيْ، 1، تَرْدِيْ، 2، اَلْفَرْدِيْ، 1،

[illegible]

اَللّٰهُمَّ اِنِّىْ اَسْأَلُكَ بِرَحْمَتِكَ الَّتِىْ رَحِمْتَ بِهَا نُوْحًا وَاِسْحٰقَ وَاٰدَمَ وَاَنْتَ اَعْلَمُ

اَللّٰهُمَّ اِنِّىْ اَسْأَلُكَ بِرَحْمَتِكَ الَّتِىْ رَحِمْتَ بِهَا نُوْحًا وَاِسْحٰقَ وَاٰدَمَ وَاَنْتَ اَعْلَمُ

..... ☐

..... ☐

..... ☐

..... ☐

..... ☐

☐ ☐

..... ☐

☐ ☐

..... ☐

..... ☐

[illegible][illegible]

□ تۇغۇتۇش تۈرلۈكۈن (يەنە ئۇ ئۇيۇشۇش ۋە تۈرلۈكۈن)

37. ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن). ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن).

□ جۈملىسى ئۇيۇشۇش تۈرلۈكۈن □ ۋە تۈرلۈكۈن

□ جۈملىسى □ ئۇيۇشۇش تۈرلۈكۈن.....

38. ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن). ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن).

□ جۈملىسى ئۇيۇشۇش تۈرلۈكۈن □ جۈملىسى ئۇيۇشۇش تۈرلۈكۈن

□ جۈملىسى □ جۈملىسى ئۇيۇشۇش تۈرلۈكۈن

□ جۈملىسى ئۇيۇشۇش تۈرلۈكۈن □ ۋە تۈرلۈكۈن

□ ۋە تۈرلۈكۈن □ ئۇيۇشۇش تۈرلۈكۈن.....

39. ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن). ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن).

□ 3- ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن)

□ 2- ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن)

□ 1- ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن)

40. ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن). ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن (تۈرلۈكۈن ۋە تۈرلۈكۈن).

□ ۋە تۈرلۈكۈن □ جۈملىسى □ جۈملىسى

□ □ □ ئۇ ئۇيۇشۇش تۈرلۈكۈن ۋە تۈرلۈكۈن؟

☐

در بخش سوره و در سوره

□ اَللّٰهُمَّ صَلِّ وَسَلِّمْ وَبَارِكْ عَلَى سَيِّدِنَا مُحَمَّدٍ

وَمِنْ خَلْقِهِ خَلْقَ الْبَشَرِ ☐

☐[illegible]

« > 0 < > « 0 < 0 / / x 0 < □

$\frac{0}{\sqrt{2}} \frac{x}{\sqrt{2}} \frac{1}{\sqrt{2}} \frac{0}{\sqrt{2}} \frac{0}{\sqrt{2}} \frac{1}{\sqrt{2}} \frac{1}{\sqrt{2}} \frac{0}{\sqrt{2}}$

5

[illegible]

5 וְעָמְרָם רִמְעָה דָּמְרָס לְדָוִד וְיִשְׂרָאֵל וְעָמְרָם רִמְעָה דָּמְרָס לְדָוִד וְיִשְׂרָאֵל 5-1 וְעָמְרָם רִמְעָה דָּמְרָס לְדָוִד וְיִשְׂרָאֵל

دکتر کر؟ (سورسور 1 د لاس 5 د لاس زمره بخیر شد سورسور د لاس)

وَمَعْرُوفٍ رَفِيعٍ ﴿١٠٠﴾ □

“*روزگار*” □

□ دُفِرْدِسْرُوْعَمَرْ (وَوَ رِفْرَزْ قِمَرِ سُرْسَرِ مَرْقَمَرْ وَوَسْ مَرْهَشْوَسْ)

[illegible]

راہِ حق

وَمَعْرُوفٍ رَفِيعٍ ۝۱۰۰ □

روزگار ☐

□ دُتْر دِسْرُوْعَرِ (وَرِ رِغْرُ زَ مَرِ سَرِ سَرِ مَرِ زَ وَ دِ سَرِ سَرِ مَرِ)

53. مَخْرَجُ يَرْسُ سَرْجَمٌ؟ سَرْجَمٌ قَوْمٌ رَمَزُوا زَيْدَ بْنَ رِجْوَةَ لَأَسْرَ؟ (1) لَأَسْرَ 5 رَأْسُ زَيْدٍ فَخَشِرْهُ لِمَنْ يَرَى

وَمَنْ يَرْزُقْ رِجُلًا دَخَلَ

“روزگار در دست خداست” □

□ דַּחֲסֵי שְׂרָא (וְיִרְדּוּ חַיֵּי שְׂרָא וְשֵׁי שְׂרָא)

54. הַיּוֹם הַזֶּה בָּרַךְ אֱלֹהֵינוּ? (תַּעֲשֶׂה תְּשׁוּבָה אֶתְּשׁוּבָה בַּיּוֹם)

□ אֲשֶׁר זָכַרְתָּ לְךָ □ לֵאמֹר

□ וְעָשִׂיתָ עֲשֵׂי יוֹם □ אֱלֹהֵינוּ שֶׁנִּשְׁכַּח

□ לֵאמֹר וְעָשִׂיתָ

55. הַיּוֹם הַזֶּה שָׂרָא אֱלֹהֵינוּ בְּרִשְׁתָּנוּ וְעָשִׂיתָ בְּרִשְׁתָּנוּ? (תַּעֲשֶׂה תְּשׁוּבָה אֶתְּשׁוּבָה בַּיּוֹם)

□ אֲשֶׁר זָכַרְתָּ לְךָ □ לֵאמֹר

□ וְעָשִׂיתָ עֲשֵׂי יוֹם □ אֱלֹהֵינוּ שֶׁנִּשְׁכַּח

□ לֵאמֹר וְעָשִׂיתָ

56. לֵאמֹר שֶׁנִּשְׁכַּח אֱלֹהֵינוּ (אֱלֹהֵינוּ בְּרִשְׁתָּנוּ, דְּרַבְרָא לֹא נִשְׁכַּח אֱלֹהֵינוּ בְּרִשְׁתָּנוּ) (תַּעֲשֶׂה תְּשׁוּבָה אֶתְּשׁוּבָה בַּיּוֹם)

□ אֲשֶׁר זָכַרְתָּ לְךָ □ לֵאמֹר

□ וְעָשִׂיתָ עֲשֵׂי יוֹם □ אֱלֹהֵינוּ שֶׁנִּשְׁכַּח

□ לֵאמֹר וְעָשִׂיתָ

□ אֲשֶׁר זָכַרְתָּ לְךָ □ לֵאמֹר

57. שְׂרָא שֶׁנִּשְׁכַּח אֱלֹהֵינוּ (אֱלֹהֵינוּ בְּרִשְׁתָּנוּ, דְּרַבְרָא לֹא נִשְׁכַּח אֱלֹהֵינוּ בְּרִשְׁתָּנוּ) (תַּעֲשֶׂה תְּשׁוּבָה אֶתְּשׁוּבָה בַּיּוֹם)

□ אֲשֶׁר זָכַרְתָּ לְךָ □ לֵאמֹר

□ וְעָשִׂיתָ עֲשֵׂי יוֹם □ אֱלֹהֵינוּ שֶׁנִּשְׁכַּח

□ לֵאמֹר וְעָשִׂיתָ

□ אֲשֶׁר זָכַרְתָּ לְךָ □ לֵאמֹר

58. הַיּוֹם הַזֶּה רִבִּיתָ עֲשֵׂי יוֹם בְּרִשְׁתָּנוּ? (תַּעֲשֶׂה תְּשׁוּבָה אֶתְּשׁוּבָה בַּיּוֹם)

□ אֲשֶׁר זָכַרְתָּ לְךָ □ לֵאמֹר

□ וְעָשִׂיתָ עֲשֵׂי יוֹם □ אֱלֹהֵינוּ שֶׁנִּשְׁכַּח

59. אַזאַלע סוף־פּאָרטיקע ריזענציעס באַווערן? דעם 5טן יאָר ווערן ריזענציעס נאָכגעפֿונען, אַזאָלע ווערן ריזענציעס נאָכגעפֿונען 5-1 אַקטעס אַקטעס סוף־פּאָרטיקע (סוף־פּאָרטיקע 5טן יאָר ריזענציעס אַקטעס אַקטעס)

□ ווערן ריזענציעס □ ריזענציעס אַקטעס

□ ריזענציעס □ ווערן ריזענציעס אַקטעס

□ דערפֿאַר ווערן (ווערן ריזענציעס אַקטעס אַקטעס אַקטעס)

60. אַזאַלע סוף־פּאָרטיקע ריזענציעס באַווערן? דעם 5טן יאָר ווערן ריזענציעס נאָכגעפֿונען, אַזאָלע ווערן ריזענציעס נאָכגעפֿונען 5-1 אַקטעס אַקטעס סוף־פּאָרטיקע (סוף־פּאָרטיקע 5טן יאָר ריזענציעס אַקטעס אַקטעס)

□ ווערן ריזענציעס □ ריזענציעס אַקטעס

□ ריזענציעס □ ווערן ריזענציעס אַקטעס

□ דערפֿאַר ווערן (ווערן ריזענציעס אַקטעס אַקטעס אַקטעס)

פֿאַר אַזאַלע סוף־פּאָרטיקע ריזענציעס אַקטעס אַקטעס אַקטעס.

61. ריזענציעס נאָכגעפֿונען אַקטעס אַקטעס באַווערן? דעם 5טן יאָר ווערן ריזענציעס נאָכגעפֿונען, אַזאָלע ווערן ריזענציעס נאָכגעפֿונען 5-1 אַקטעס אַקטעס סוף־פּאָרטיקע (סוף־פּאָרטיקע 5טן יאָר ריזענציעס אַקטעס אַקטעס)

□ ווערן ריזענציעס □ ריזענציעס אַקטעס

□ ריזענציעס □ ווערן ריזענציעס אַקטעס

□ דערפֿאַר ווערן (ווערן ריזענציעס אַקטעס אַקטעס אַקטעס)

פֿאַר אַזאַלע סוף־פּאָרטיקע ריזענציעס אַקטעס אַקטעס אַקטעס.

אָנפֿאַנג ווערן דערפֿאַר. פֿאַר אַזאַלע סוף־פּאָרטיקע ריזענציעס אַקטעס אַקטעס אַקטעס.

Appendix F: Ethical approvals of the current research

Philosophy Programme
School of Social Sciences
Faculty of Arts and Social
Sciences
Te Kura Kete Aronui
The University of Waikato
Private Bag 3105
Hamilton 3240
New Zealand

Phone +64 7 838 6131
E-mail
rmwalker@waikato.ac.nz
www.waikato.ac.nz



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Sheena Moosa
Professor Natalie Jackson
Professor Peggy Koopman-Boyden

National Institute of Demographic and Economic Analysis

23 August 2011

Dear Sheena

Re: **FS2011-36 Wellbeing and Social Connectedness of Older People in the Small Island
Developing State of Maldives.**

Thank you for submitting your amended application to the Committee. It was particularly helpful to have the summary of revisions as well as the full document. You have addressed all the matters raised very well and I am happy to provide you with formal ethical approval for your research.

I wish you well with your research.

Kind regards,

A handwritten signature in cursive script, appearing to read 'Rmwalker'.

Ruth Walker
Chair Faculty of Arts and Social Sciences Human Research Ethics Committee.



Decision Support Division
Ministry of Health & Family
Republic of Maldives

Application Form for Research Registration

Date of application: 1/8/2011

Part A: Identification

1. Organisation/Individual applying for registration: SHEENA MOOSA

2. Contact information: Name: SHEENA MOOSA

Address: NATIONAL INSTITUTE FOR DEMOGRAPHIC & ECONOMIC ANALYSIS,
UNIVERSITY OF WAIKATO, HAMILTON NEW ZEALAND

Telephone: Fax: Email: moosa.sheena@gmail.com

Part B: Research Details

1. Title of the study: WELLBEING & SOCIAL CONNECTEDNESS OF
SMALL ISLAND DEVELOPING STATES
OLDER PEOPLE IN THE MALDIVES

2. Broad objective: DETERMINE THE STATUS & CAUSALITIES OF
WELLBEING OF OLDER PEOPLE IN MALDIVES

3. Budget: SELF

4. Method of data collection (tick appropriate box[s]):

- | | | |
|---|--|---|
| ☒ Personnel Interview | ☐ Self Enumeration | ☒ Telephone Interview |
| ☐ Focus Groups | ☐ Literature Research | ☐ Other (specify) |

Signature of applicant (if individual):

Stamp(organisations):



Form DSD use:

Form received by: Signature:

Date:

Appendix G: Factor analysis and reliability analysis of the scales developed for the research

1. Social connectedness scale

Social Connectedness Scale (Initial scale tested): A principal component analysis (PCA) was conducted on 13 items (N=386) of the social connectedness scale with orthogonal rotation (varimax). The Kaiser-Mayer-Olkin measure (KMO=.70) verified the sampling adequacy for the analysis and all the values for individual items were $>.5$, the acceptable limit (Field, 2009). Bartlett's test of sphericity, $\chi^2(78)=918.997$, $p<.001$, indicated that correlations between items were significantly large for the PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Four components had eigenvalues over Kaiser's criterion of 1, and in combination explained, 56.06% of the variance. Given the sample size and convergence of the Scree plot and Kaiser's criterion, three components were analysed. Table G.1 shows the factor loadings after rotation.

Table G.1: Summary of exploratory factor analysis for the social connectedness scale (N=386)

	Component		
	Social engagement	Friends network	Family network
Engagement in social activity_informal	.720	-.017	.026
Engagement in social activity_community	.701	.008	-.054
Engagement in social activity_friends	.679	.364	.055
Engagement in social activity_religious	.529	.246	.071
Friend contact type	-.078	.803	.050
Freq. contact with friends	.277	.763	.062
Friends contacts number	.290	.616	.141
Social support family	-.103	-.043	.713
Freq. contact with family	.170	.139	.707
Family contacts number	-.020	.147	.662
Engagement in social activity_family	.384	-.075	.445
Social support friends	-.031	.125	-.032
Family contact type	-.219	.414	.410
Eigenvalues	2.16	2.03	1.85
% of variance	16.58	15.65	14.25
α	.64	.39	.58

Note: Factor loadings over .40 (substantive values) appear in bold.

The items that cluster on the same components suggest that component 1 represents social engagement, component 2 represents friends' network and component 3 represents family network.

Reliability analysis of the components of the social connectedness scale show that the reliability of the social engagement subscale is moderate ($\alpha=.64$) while subscale family network has a relatively lower reliability ($\alpha=.58$). the reliability of friends' network subscale is very low ($\alpha=.39$) indicating poor reliability. Examination of reliability statistics show that removal of one item (social support friend) would increase the reliability of the friends' network (α will increase to .66). The reliability statistics for each subscale is given in Tables G.2, G.3 and G.4.

Table G.2: Reliability Statistics: Social engagement subscale (Initial)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items		
.640	.654		4		
Inter-Item Correlation Matrix					
	Engagement in religious social activity	Engagement in informal social activity	Engagement in social activity with friends	Engagement in social activity in community	
Engagement in religious social activity	1.000	.217	.326	.290	
Engagement in informal social activity	.217	1.000	.448	.312	
Engagement in social activity with friends	.326	.448	1.000	.334	
Engagement in social activity in community	.290	.312	.334	1.000	
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Engagement in religious social activity	5.64	2.840	.362	.145	.633
Engagement in informal social activity	5.66	3.083	.428	.232	.565
Engagement in social activity with friends	5.34	2.974	.513	.279	.506
Engagement in social activity in community	6.31	3.555	.418	.176	.582

Corrected item-total correlation are all above .3 and Cronbach's alpha if item deleted indicate that none of these items would increase the reliability if they were deleted because all values in this column are less than the overall reliability of .64.

Table G.3: Reliability Statistics: Friends network subscale (Initial)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items		
.388	.581		4		
Inter-Item Correlation Matrix					
	Socialsupport friend	Friends contacts number	Freq friends contact	Friend contact type	
Social support friend	1.000	.177	.132	-.018	
Friends contacts number	.177	1.000	.539	.259	
Freq. friends contact	.132	.539	1.000	.456	
Friend contact type	-.018	.259	.456	1.000	
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Social support friend	7.83	1.534	.124	.041	.665
Friends contacts number	6.33	2.669	.381	.302	.201
Freq. friends contact	5.79	2.875	.440	.401	.219
Friend contact type	6.02	3.079	.190	.215	.353

Corrected item-total correlation show that two items have values above .3 and two items have values lower than .3 indicating the internal consistency is not good. Cronbach's alpha if item deleted indicate that deletion of item 'social support friend' would increase the reliability as the values in this column is more than the overall reliability of .39.

Table G.4: Reliability Statistics: Family network subscale (Initial)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items		
.575	.596		5		
Inter-Item Correlation Matrix					
	Social support family	Family contacts	Frequenc y family	Family contact type	Engagement in social activity family
Social support family	1.000	.254	.318	.197	.095
Family contacts number	.254	1.000	.276	.193	.264
Freq. family contact	.318	.276	1.000	.381	.224
Family contact type	.197	.193	.381	1.000	.079
Engagement in social activity with family	.095	.264	.224	.079	1.000
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Varianc e if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlati on	Cronbach's Alpha if Item Deleted
Social support family	10.02	2.452	.314	.136	.531
Family contacts number	10.33	2.566	.391	.155	.495
Freq. family contact	10.24	2.372	.473	.251	.447
Family contact type	10.45	2.675	.308	.158	.534
Engagement in social activity with family	10.44	2.350	.241	.095	.594

Corrected item-total correlation show that one item has values below .3 indicating the internal consistency is not good. Cronbach's alpha if item deleted indicate that deletion of this item would increase the reliability as the values in this column is more than the overall reliability of .58.

Final Social Connectedness Scale: The problematic items, from the friends' network component and family network components, were removed ('social support friends' and 'social engagement with family') and the principal component analysis (PCA) was conducted again on 11 items (N=386) with orthogonal rotation (varimax).with orthogonal rotation (varimax). The Kaiser-Mayer-Olkin measure verified the sampling adequacy for the analysis, KMO=.71 and all the values for individual items were above the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity $\chi^2(55)=824.27$, $p<.001$, indicated that correlations between items were significant for the PCA. Eigenvalues for each component in the data was obtained. Three components had eigenvalues over Kaiser's criterion of 1 and in combination explained 53.94% of the variance. Given the sample size and convergence of the Scree plot and Kaiser's criterion on the three components, this is the number of components retained in the final analysis. Table G.5 shows the factor loading after rotation.

Table G.5: Summary of exploratory analysis results for revised social connectedness question scale (N=386)

	Component		
	Social engagement	Friends network	Family network
Engagement in informal social activity	.740	.019	-.071
Engagement in social activity with friends	.705	.379	.020
Engagement in social activity in community	.681	.005	-.055
Engagement in religious social activity	.546	.144	.228
Freq. friends contact	.259	.815	.028
Friend contact type	-.129	.764	.196
Friends contacts number	.297	.681	.053
Freq. family contact	.251	.040	.748
Social support family	.014	-.109	.680
Family contact type	-.190	.253	.636
Family contacts number	-.009	.164	.588
Eigenvalues	2.08	1.98	1.87
% of variance	18.89	18.01	17.04
α	.64	.67	.59

Note: Factor loadings over .40 (substantive values) appear in bold.

The items that cluster on the same components indicate that component 1 represents social engagement, component 2- friends' network and component 3 represents family network.

Reliability analysis of the components of the scale show that the reliability is moderate for all components, ($\alpha = .6$ for all three components). A very high reliability is not expected in social science data (Kline, 1999). The reliability statistics for each subscale is given Tables G.6, G.7 and G.8.

Table G.6: Reliability Statistics: Social engagement subscale (final)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items		
.640	.654		4		
Inter-Item Correlation Matrix					
	Engagement in religious social activity	Engagement in informal social activity	Engagement in social activity with friends	Engagement in social activity in community	
Engagement in religious social activity	1.000	.217	.326	.290	
Engagement in informal social activity	.217	1.000	.448	.312	
Engagement in social activity with friends	.326	.448	1.000	.334	
Engagement in social activity in community	.290	.312	.334	1.000	
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Engagement in religious social activity	5.64	2.840	.362	.145	.633
Engagement in informal social activity	5.66	3.083	.428	.232	.565
Engagement in social activity with friends	5.34	2.974	.513	.279	.506
Engagement in social activity in community	6.31	3.555	.418	.176	.582

Corrected item-total correlation are all above .3 and Cronbach's alpha if item deleted indicate that none of these items would increase the reliability if they were deleted because all values in this column are less than the overall reliability of .64.

Table G.7: Reliability Statistics: Friends network subscale (final)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items			
.665	.682	3			
Inter-Item Correlation Matrix					
	Friends contacts number	Freq. friends contact	Friend contact type		
Friends contacts number	1.000	.538	.258		
Freq. friends contact	.538	1.000	.456		
Friend contact type	.258	.456	1.000		
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Friends contacts number	5.51	.731	.449	.290	.618
Freq. friends contact	4.96	.817	.628	.398	.409
Friend contact type	5.19	.834	.391	.208	.684

Corrected item-total correlation are all above .3 and Cronbach's alpha if item deleted indicate that if the item 'friend contact type' would increase the reliability from .67 to .68. Since the item-total correlation is >.3 (showing that internal consistency is fairly good) and the expected increase in reliability if this item is removed is very small (.01) the item was retained in the scale.

Table G.8: Reliability Statistics: Family network subscale (final)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items			N of Items	
.593	.595			4	
Inter-Item Correlation Matrix					
	Socialsupport family	Family contacts number	Freq family contact	Family contact type	
Social support family	1.000	.253	.318	.197	
Family contacts number	.253	1.000	.274	.189	
Freq family contacts	.318	.274	1.000	.382	
Family contact type	.197	.189	.382	1.000	
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Social support family	7.59	1.386	.356	.135	.542
Family contacts number	7.90	1.621	.329	.112	.554
Freq family contacts	7.81	1.405	.469	.231	.447
Family contact type	8.03	1.579	.352	.158	.538

Corrected item-total correlation are all above .3 and Cronbach's alpha if item deleted indicate that none of these items would increase the reliability if they were deleted because all values in this column are less than the overall reliability of .59.

2. Social Values and Norms Scale

A principal component analysis (PCA) was conducted on the five items of the scale (N=391). The Kaiser-Mayer-Olkin measure (KMO=.74) verified the sampling adequacy for the analysis and all the values for individual items were $>.5$, the acceptable limit (Field, 2009). Bartlett's test of sphericity, $\chi^2(10)=376.39$, $p<.001$, indicated that correlations between items were significant for the PCA. An initial analysis to obtain eigenvalues for components extracted one component that had eigenvalues over Kaiser's criterion of 1, and in combination, explained 47.75% of the variance. The five items cluster on this component indicating that this component represents social values and norms. Table G.9 shows the factor loadings for the component items.

Table G.9: Summary of exploratory analysis results for social connectedness scale items(N=391)

	Component
	Social Values and norms
Tradition/Respect	.724
Benevolence/Trust	.723
Conformity/Obedience	.710
Universalism/Altruism	.649
Security/Safety	.644
Eigenvalues	2.387
% of variance	47.75
α	.73

Note: Factor loadings over .40 (substantive values) appear in bold.

Reliability analysis of the items of the scale show that the reliability of the scale is high ($\alpha=.73$). The reliability statistics for the scale is given in Table G.10.

Table G.10: Reliability Statistics: Social values and norms scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items			N of Items	
.725	.725			5	
Inter-Item Correlation Matrix					
	Security/ Safety	Benevolence /Trust	Tradition /Respect	Conformity/ Obedience	Universalis m/Altruism
Security/Safety	1.000	.500	.283	.266	.214
Benevolence/Trust	.500	1.000	.323	.334	.323
Tradition/Respect	.283	.323	1.000	.475	.387
Conformity/Obedience	.266	.334	.475	1.000	.351
Universalism/Altruism	.214	.323	.387	.351	1.000
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Security/Safety	8.73	4.499	.435	.270	.697
Benevolence/Trust	8.76	4.378	.527	.326	.661
Tradition/Respect	9.04	4.250	.517	.303	.664
Conformity/Obedience	8.83	4.496	.504	.285	.671
Universalism/Altruism	8.88	4.605	.440	.215	.694

Corrected item-total correlation are all above .3 and Cronbach's alpha if item deleted indicate that none of these items would increase the reliability if they were deleted because all values in this column are less than the overall reliability of .73.

3. Access to goods and services scale

Factor analysis of the Access Scale (initial scale tested): A principal component analysis (PCA) was conducted on nine items (N=385) with orthogonal rotation (varimax). The Kaiser-Mayer-Olkin measure (KMO=.63) verified the sampling adequacy for the analysis and all the values for individual items were >.5, the acceptable limit (Field, 2009). Bartlett's test of sphericity, $\chi^2(36)=341.53$, $p<.001$, indicated that correlations between items were significant for the PCA.

Table G.11: Summary of exploratory analysis results for access to goods and services scale items(N=385)

	Component		
	Access to basic goods	Access to communication services	Access to health care services
Times with difficulty to get personal items	.783	-.033	-.038
Times with difficulty to get household items	.663	.079	-.110
Times with difficulty to get healthcare	.646	.098	-.118
Times with difficulty to afford housing	.590	-.135	.283
Access land transport	.031	.773	.143
Access telephone	.126	.720	-.209
Access internet	-.074	.697	.035
Access health care	-.005	-.201	.740
Access sea transport	-.096	.316	.654
Eigenvalues	1.85	1.78	1.15
% of variance	20.55	19.75	12.75
α	.53	.60	.15

Note: Factor loadings over .40 (substantive values) appear in bold.

An initial analysis was run to obtain eigenvalues for components in the data. Three components had eigenvalues over Kaiser's criterion of 1, and in combination, explained 53.04% of the variance. Table G.11 shows the factor loadings for the three components. The items that cluster on the same components suggest that component 1 represents access to basic goods, component 2 represents access to communication and component 3 represents access to healthcare.

Reliability analysis of the components of the scale show that the reliability of the access to communication services subscale is moderate ($\alpha=.60$) while subscale access to basic goods is relatively lower ($\alpha=.53$). The reliability of the healthcare access subscale is problematic for the scale ($\alpha=.15$).

Final Access scale: The problematic items, access to health care and access to sea transport, were removed and the principal component analysis (PCA) was conducted again on seven items (N=386) with orthogonal rotation (varimax). The Kaiser-Mayer-Olkin measure verified the sampling adequacy for the analysis, KMO=.65 and all the values for individual items were above .5. Bartlett's test of sphericity $\chi^2(21)=301.58$, $p<.001$, indicated that correlations between items were significant for the PCA. Two components had eigenvalues over Kaiser's criterion of 1 and in combination explained 50.83% of the variance. These two components were retained for the final analysis (Table G.12).

Table G.12: Summary of exploratory analysis results for revised access to goods and services scale items (N=386)

	Component	
	Access to basic goods	Access to services (Communication)
Times with difficulty to get personal items	.782	-.010
Times with difficulty to get household items	.670	.091
Times with difficulty to get healthcare items	.654	.108
Times with difficulty to afford housing	.575	-.158
Access land transport	.003	.803
Access telephone	.123	.740
Access internet	-.085	.691
Eigenvalues	1.84	1.71
% of variance	26.31	24.51
α	.53	.60

Note: Factor loadings over .40 (substantive values) appear in bold.

The items that cluster on the same components suggest that component 1 represents access to basic goods and component 2 represents access to communication services. Table G.13 below shows the factor loadings for the two components after rotation.

Reliability analysis of the components of the social values and norms scale shows that the reliability of the communication access subscale is moderate ($\alpha=.60$) while subscale financial access is relatively low ($\alpha=.53$). The reliability statistics for each subscale is given in Tables G.13 and G.14.

Table G.13: Reliability Statistics: Access to communication services subscale (final)

Subscale (final)					
Cronbach's Alpha		Cronbach's Alpha Based on Standardized Items		N of Items	
.596		.611		3	
Inter-Item Correlation Matrix					
	Access telephone	Access internet	Access land transport		
Access telephone	1.000	.246	.429		
Access internet	.246	1.000	.356		
Access land transport	.429	.356	1.000		
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Access telephone	2.87	.948	.435	.194	.453
Access internet	4.13	1.289	.364	.138	.586
Access land transport	3.52	.607	.501	.251	.373

Corrected item-total correlation are all above .3 and Cronbach's alpha if item deleted indicate that none of these items would increase the reliability if they were deleted because all values in this column are less than the overall reliability of .60.

Table G.14: Reliability Statistics: Access to basic goods subscale (final)

Cronbach's Alpha		Cronbach's Alpha Based on Standardized Items		N of Items	
.526		.599		4	
Inter-Item Correlation Matrix					
	Times with difficulty to get personal items	Times with difficulty to get household items	Times with difficulty to afford housing	Times with difficulty to get healthcare	
Times with difficulty to get personal items	1.000	.379	.292	.350	
Times with difficulty to get household items	.379	1.000	.177	.244	
Times with difficulty to afford housing	.292	.177	1.000	.187	
Times with difficulty to get healthcare	.350	.244	.187	1.000	
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Times with difficulty to get personal items	8.81	.265	.489	.251	.367
Times with difficulty to get household items	8.91	.143	.370	.161	.493
Times with difficulty to afford housing	8.80	.334	.273	.097	.524
Times with difficulty to get healthcare	8.85	.238	.340	.144	.431

Corrected item-total correlation are above .3 for three items and .27 for one item (raises concern for internal consistency). However, Cronbach's alpha if item

deleted indicate that none of these items would increase the reliability if they were deleted because all values in this column are less than the overall reliability of .53. Hence this item is retained in the scale.

Note: In conducting the factor analysis cases with missing values in any of the items for that specific indicator were excluded and listwise cases were selected in SPSS to exclude cases with missing values for that particular scale.

Appendix H: Data dictionary of variables used in the correlation and multiple regression analysis

Variable	Position	Label	Measurement Level	Role	Missing Values
respondentNo	1	Respondent number	Nominal	Input	
populationsize	2	Island cluster	Nominal	Input	99
dummyIslandclusterPop	3	Island cluster population	Ordinal	Input	
age	4	Respondent age	Ordinal	Input	
gender	5	sex	Ordinal	Input	
Health	6	Level of health	Scale	Input	99
SocialConnectedness	7	Level of overall social connectedness	Scale	Input	99
Economicstatus	8	Level of economic standard	Scale	Input	
Socialvalueslevel	9	Level of conformity social values_norms	Scale	Input	99
Access	10	Level of access to gooods_services	Scale	Input	99
SatisfyHealth	11	Satisfaction health	Scale	Input	99
SatisfaySCall	12	Satisfaction overall social connectedness	Scale	Input	99
SatisfyEconomic	13	Satisfaction economic standard	Scale	Input	99
SatisfySocialvalues	14	Satisfaction social values_norms	Scale	Input	99
SatisfyAccess	15	Satisfaction access to goods_services	Scale	Input	99
OSWLWellbeing	16	Satisfaction with life	Scale	Input	99
dummywellbeing	17	Wellbeing	Ordinal	Input	99
dummyHealth	18	Health	Ordinal	Input	99
dummySC	19	Social connectedness	Ordinal	Input	99
dummyES	20	Economic status	Ordinal	Input	99
dummySV	21	Conformity to social values and norms	Ordinal	Input	99
dummyAccess	22	Access to goods and services	Ordinal	Input	99
dummySatisfiedHealth	23	Satisfaction with health	Ordinal	Input	99
dummySatsfiedSC	24	Satisfaction with social connectedness	Ordinal	Input	99
dummySatisfiedES	25	Satisfaction with economic status	Ordinal	Input	99
dummySatisfiedSV	26	Satisfaction with conformity to social values and norms	Ordinal	Input	99
dummySatisfiedAccess	27	Satisfaction with access to goods and services	Ordinal	Input	99

Variable values for the data in correlation and regression analysis

Variable	Value	Label
populationsize	0	dense population >100,000
	1	moderate population 1000-99,999
	2	sparse population <1000
dummyIslandclusterPop	0	other
	1	pop 99,000 to 1,000
gender	0	Male
	1	Female
Health	1	Poor
	2	Neither good nor poor
	3	Good
	99 ^a	No response
SocialConnectedness	1	Poor
	2	Neither good nor poor
	3	Good
	99 ^a	No response
Economicstatus	1	Poor
	2	Neither poor nor good
	3	Good
	99	No response
Socialvalueslevel	1	Poor
	2	Neither good nor poor
	3	Good
	99 ^a	No response
Access	1	Poor
	2	Neither good nor poor
	3	Good
	99 ^a	No response
SatisfyHealth	1	Dissatisfied
	2	Neither satisfied nor dissatisfied
	3	Satisfied
	99 ^a	No response
SatisfaySCall	1	Dissatisfied
	2	Neither satisfied nor dissatisfied
	3	Satisfied
	99 ^a	No response
SatisfyEconomic	1	Dissatisfied
	2	Neither satisfied nor dissatisfied
	3	Satisfied
	99 ^a	No response

SatisfySocialvalues	1 2 3 99 ^a	Dissatisfied Neither satisfied nor dissatisfied Satisfied No response
SatisfyAccess	1 2 3 99 ^a	Dissatisfied Neither satisfied nor dissatisfied Satisfied No response
OSWLWellbeing	1 2 3 99 ^a	Dissatisfied Neither satisfied nor dissatisfied Satisfied No response
dummywellbeing	0 1 99 ^a	other satisfied with life No response
dummyHealth	0 1 99 ^a	other good no response
dummySC	0 1 99 ^a	other good no response
dummyES	0 1 99 ^a	other good no response
dummySV	0 1 99 ^a	other good no response
dummyAccess	0 1 99 ^a	other good no response
dummySatisfiedHealth	0 1 99 ^a	other satisfied with health No response
dummySatsfiedSC	0 1 99 ^a	other satisfied with SC No response
dummySatisfiedES	0 1 99 ^a	other satisfied with ES No response
dummySatisfiedSV	0 1 99 ^a	other satisfied with SV No response
dummySatisfiedAccess	0 1 99 ^a	other satisfied with Access No response

a. Missing value.