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The relationship between intergenerational transfers, co-residence and labour participation among older people in Malaysia

by

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Thesis for the degree of Doctor of Philosophy

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ABSTRACT

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THE RELATIONSHIP BETWEEN INTERGENERATIONAL TRANSFERS, CO-RESIDENCE AND LABOUR PARTICIPATION AMONG OLDER PEOPLE IN MALAYSIA

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The increasing percentage of older people in many countries has aroused interest among policymakers with regard to older people's well-being, including issues concerning support for older people, their economic security and familial and living arrangements. While some older people support themselves with their own income and savings through wealth accumulation, there are others who remain active in the labour market out of financial necessity. Some older people tend to work as long as they are physically able, especially when support from family members is limited. Using data from the Fifth Malaysian Population and Family Survey 2014 (MPFS-5), this research investigates the relationship between intergenerational transfers, co-residence and labour participation among 4,059 older Malaysians aged 60 years and above. A binary logistic regression was used to identify the significant predictors of older Malaysians participating in the labour market after controlling for key demographic, health and socio-economic, geographical and intergenerational support variables. The results showed that respondents who were older, female, and either married or widowed were less likely to participate in the labour market than their counterparts. On the other hand, those who were of Chinese background, with more income sources, who lived in rural areas and those residing in Sabah, Sarawak and Labuan were more likely to be in the labour market than their comparison groups. Furthermore, respondents with a higher education, those who experienced greater difficulty in daily living and those who lived with more health problems were less likely to be in the labour market than the reference group. In terms of intergenerational support, older people who received support from their adult children more frequently were less likely to participate in the labour market than those who received no support. Surprisingly, co-residence was not a statistically significant factor. This research has offered an insight into the complex relationship between working in later life and supporting one's family among older people in Malaysia. These findings have important implications for Malaysian old age policy and its effort to promote productive ageing through employment opportunities, which can ensure continued independence in old age, while acknowledging the importance of family support on preserving the welfare of older people in Malaysia.

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Academic Thesis: Declaration of Authorship

Print name: Khairul Hanim Binti Pazim

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I declare that this thesis and the work presented in it is my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

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Acknowledgements

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Abbreviations

ADLs	Activities of Daily Living
BOT	*Bantuan Orang Tua*
DOSM	Department of Statistics Malaysia
EPF	Employees' Provident Fund
EPU	Economic Planning Unit
ERGO	Ethics and Research Governance Online
GBP	Great British Pound
IADLs	Instrumental Activities of Daily Living
ILO	International Labour Organisation
LFPR	Labour Force Participation Rate
ML	Maximum Likelihood
MOE	Ministry of Education
MOF	Ministry of Finance
MPFS	Malaysian Population and Family Survey
MYR	Malaysian Ringgit
NEP	New Economic Policy
NPFDB	National population and Family Development Board
OR	Odds ratio
SPSS	Statistical Package for the Social Sciences
TFR	Total Fertility Rate
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WHO	World Health Organisation

Chapter 1: Introduction

1.1 Introduction

Population ageing is one of the most pressing issues of the twenty-first century facing countries all over the world. It is expected that the global increase in the number of older persons (aged 60 and above) will be more than double, from 901 million people in 2015 to nearly 2.1 billion in 2050 (United Nations, 2015a). While all countries are expected to experience rapid growth in the number of older persons, developing nations will experience faster growth compared to developed nations (United Nations, 2015b). For instance in Malaysia, it will take only 23 years for the percentage of the population aged 65 years and above to double from 7 percent in 2020 to 14 percent in 2043 (Hamid, 2015). In South-Eastern Asia, which includes Malaysia, about 14.7 percent of the total population is expected to be 60 years or over by 2030 (United Nations, 2015b). It was also reported by the United Nations (2015b) that in Malaysia the number of people aged 60 and above is expected to increase from just under 2.8 million in 2015 to 5.2 million in 2030. This phenomenon is a direct result of reducing fertility and mortality as well as increasing in longevity, which Malaysia has been experiencing during recent decades in conjunction with its economic development (Hamid, 2015). The increasing number of older people has aroused interest among policymakers with regard to older people's well-being, including issues concerning support for older people, familial living arrangement and their economic security. Such issues are included in the Eleventh Malaysia Plan's aim to enhance the living environment for elderly people (Economic Planning Unit Malaysia, 2015).

In Malaysia, as well as most countries around the world, the life expectancy at birth increases every year. For example in 2015, a new-born Malaysian resident was expected to live to 74.8 years on average, compared to 74.1 in 2010 (Department of Statistics Malaysia, 2015a). This is in line with the social and medical advancements which Malaysia is experiencing (Tan and Folk, 2011); however, the increase in longevity means that people are living longer and need resources to finance the additional years of life after their retirement (Vaghefi *et al.*, 2016). Although old age does not necessarily mean frailty and passive dependency, living longer will increase the tendency of older people to outlive their available income and savings (Hamid, 2015), thus increasing the chance of older people living in poverty (Chan *et al.*, 2010a). For example, evidence from the Household Income Surveys in Malaysia reported that in 2012, the incidence of poverty among older people was 1.96 percent compared to only 0.79 percent among the younger people (Mohd *et al.*, 2018).

Several studies conducted in Malaysia have shown that older people, which include retirees, are vulnerable to unpredictable events and changing financial conditions (Holzmann, 2015; Vaghefi *et al.*, 2016). According to data from the Malaysian Household Income Survey 2009, households headed by individuals aged 65 years and above are the ones with the highest incidence of poverty (Mohd, 2014) . A study among Employees Provident Fund (EPF) retirees, which is a fund for employees in the private sector in Malaysia, showed that 62 percent of older people have a lower retirement income compared to their pre-retirement income (Vaghefi *et al.*, 2016). Thus, older people in general are at risk of experiencing poverty as a decline in economic opportunities with age may especially threaten those with limited sources of income in old age (Barrientos, 2007; Tey, 2017).

Older people vary in terms of their dependence and economic self-sufficiency as a result of their cumulative lifelong experiences along their life course (Hamid, 2015). While some older people support themselves with their own income and savings through wealth accumulation, there are others who remain active in the labour market out of financial necessity (United Nations, 2015a). It was reported by the United Nations (2015a) that many older persons in developing countries still need to work and were more likely to be economically active in the labour market than in developed countries. As for many older people in other developing countries, earnings from employment are the main source of income for Malaysian older persons (Masud and Haron, 2014). Thus it is not surprising that a study by Tey and Hamid (2014) in Malaysia identified that financial considerations were the most important reason for older people's decision to continue working. In addition, according to Friedman *et al.* (2001) some older people tend to work as long as they are physically able, especially when support from family members is limited. At the same time, any reliance on support from children may become strained as the old age dependency ratio, which measures the number of older people as a share of those of working age, increases (Cameron and Cobb-Clark, 2008). In other words, an increase in the old age dependency ratio is often accompanied by a deteriorating family support system, particularly in countries where there are low levels of physical and human capital (Ingham *et al.*, 2009). Despite the growing number of older people, to date there has been relatively little research in Malaysia examining the determinants of the labour participation decision among older people in the labour market. Accordingly, this thesis aims to build upon previous work carried out in Malaysia on work participation (Wan Ahmad *et al.*, 2011; Ng and Sia, 2012; Tey and Hamid, 2014). Own labour participation becomes more crucial among older people with the impact of socio-economic changes on living arrangements (Nguyen *et al.*, 2012) where this transformation can no longer guarantee family's main role in supporting older people in old age (Abdul Aziz and Yusooff, 2012).

Socio-economic differences such as geographical location and educational attainment create old age diversity in society (Tan and Folk, 2011). Socio-economic factors further differentiate between the different ethnic groups in Malaysia in terms of the rural–urban distribution, occupation (Tey *et al.*, 2015), and patterns of parental support (Teh *et al.*, 2013), as well as the rate of ageing among different population groups (Chai and Hamid, 2015). Due to modernisation, family structures have changed causing shifts from extended families to nuclear families, and this trend for smaller family units is growing (Caraher, 2003; Ladusingh and Maharana, 2017). Rural-urban migration among younger generations in search of work opportunities in the urban areas has resulted in many older people being isolated in the rural areas (Abdul Aziz and Yusooff, 2012). As a result, older people are left on their own with less family support (Hoi *et al.*, 2011). Declining birth rates have decreased the number of children with whom older parents can co-reside, reducing the likelihood of adult children looking after the needs of their older parents (DaVanzo and Chan, 1994). This gives rise to the following question: to what extent are demographic and socio-economic factors associated with older people's decision to participate in the labour market? This is a particularly important question as changes in individuals' socio-economic characteristics will result in different experiences of ageing for the older population (Hamid, 2015). For example, such changes may result in future older people being more educated and resourceful, thus having different expectations with respect to labour participation (Hamid, 2015), as well as family support (Ibrahim, 2012).

Whilst employment plays an important role not only in the provision of income security in old age (Vaghefi *et al.*, 2016), but also in ensuring active and productive ageing (Tey and Hamid, 2014), the role of the family is also significant in terms of the support for older people (Caraher, 2003). The lack of a comprehensive social security system in Malaysia perpetuates the role of family as the main source of support for elderly persons (Ibrahim, 2012). Generally, the family provides unpaid informal support (Knodel and Chayovan, 2009), which may come in the form of material support including cash or goods (Zhu, 2016), space (Ruggles and Heggeness, 2008), time spent on providing emotional support and assistance with housework and care (Ibrahim *et al.*, 2012a). Studies on intergenerational support between older people and their adult children in different countries have found that the types of support (Ibrahim, 2012), the intensity of support (Gomes, 2007) and the flow of support (Evandrou *et al.*, 2018), both when it is received and provided, vary. For example, a study in Malaysia by Ibrahim (2012) found that there are differences between co-resident and non-co-resident adult children with respect to the type and intensity of support provided to their older parents. Co-resident children tend to have a greater capacity to offer support to older parents in terms of material and instrumental help and on a more regular basis as needs arise (Ibrahim, 2012) due to their geographical location (Yi and Lin, 2009). In terms of the

flow of support, a study in Taiwan by Yi and Lin (2009) found that co-residing children are more likely to offer monetary and household assistance to their older parents and to receive household assistance from their parents (Yi and Lin, 2009).

Recent data suggest that the majority of older Malaysians co-reside with their adult children (Mohd *et al.*, 2017), and studies have also shown that older people were likely to depend a great deal on their children for financial support, especially when they do not engage in any paid work (Ng and Hamid, 2013). At the same time, the 2010 census report showed that 56 percent of Malaysian men and 28 percent of women aged 60–64 were still working (Tey *et al.*, 2015). Despite these forms of support, a significant proportion of older people remains in the labour market, which implies that many older people still need to work after retirement in order to sustain their inflow of income as they advance into older age (Vaghefi *et al.*, 2016). Thus, work participation, co-residence and intergenerational transfers seem to be the most important mechanisms of support for older Malaysians. This gives rise to the following question: to what extent is family support in terms of intergenerational transfers and co-residence associated with the work participation decision of older persons? Although previous research has examined this issue in other Asian countries like Indonesia and Vietnam (Cameron and Cobb-Clark, 2008; Nguyen *et al.*, 2012), there has been little research in linking work participation with intergenerational transfers and co-residence patterns in Malaysia. This study will seek to enhance our understanding of the different forms of support provided and received by older people, as such understanding is crucial for the development of policies to improve the welfare of the older population and their families (Cameron and Cobb-Clark, 2008).

It is unclear as to why certain older people decide to be actively involved in labour market activities while others tend to withdraw from such activities (Adhikari *et al.*, 2011). If older individuals decide to work, what drives their work participation decision, and are co-residence and intergenerational transfers associated with such decision? As far as the flow of support is concerned, do older people wish to work longer in order to support the children or grandchildren under their care? Alternatively, is family support sufficient in sustaining older people, and does it, in turn, deter older people from work participation? In order to fill this gap, this research explores the role of co-residence and intra-family intergenerational transfers on labour participation among older people in Malaysia.

1.2 Study aims and objectives

The main purpose of this study is to examine the factors associated with work participation among older people in Malaysia. As there will be an increase of older people in the future due to

the demographic transition (Wan Ahmad *et al.*, 2015), it is expected that patterns of work and support for older people will also be different in the future. The determinants of older people's participation in the labour market remain unknown. Thus, this study also aims to shed light on the role of intergenerational support and co-residence between children and parents in terms of their older parents' decision to work in the labour market.

In particular, the objectives of this research are as follows:

i) To identify the key factors (demographic, health, socio-economic, geographic and support exchange) associated with labour participation among older people.

ii) To analyse the role of co-residence in terms of older people's work participation.

iii) To investigate the association of the receipt of support and its frequency by older people from adult children with the labour participation of older people.

iv) To investigate the association of the provision of support and its frequency from older people to adult children with the labour participation of older people.

1.3 Research questions

The increase in life expectancy in Malaysia implies that people are expected to live longer than before, thus older people will need additional resources to finance additional years of life or their life after retirement (Vaghefi *et al.*, 2016). Besides depending on income from previous work (in terms of a pension) and investment-related income, older people may depend on support from their adult children through co-residence and intergenerational support exchange in their old age (Tey and Hamid, 2014). However, urbanisation, migration and feminisation of ageing have impacted family and intergenerational relationships, and these changes may no longer guarantee the traditional role of family in the direct care of older people (Abdul Aziz and Yusooff, 2012) and may affect the supply of family care within the household (Vlachantoni *et al.*, 2011). With limited family support, older people may have to depend on income from their own labour participation to ensure economic well-being in their old age. Thus, this thesis offers a unique insight into the complex relationship between working in later life and the support within family networks.

In order to investigate how co-residence and intergenerational support exchange affect the work participation decisions of older people, in the light of increasing life expectancy and a growing ageing population, this research aims to answer the following questions:

i) What are the demographic, health, socio-economic and geographical characteristics that are associated with the labour participation of older people?

ii) To what extent is older people's co-residence with their adult children associated with older people's labour participation?

iii) To what extent is the intergenerational support received by older people from their adult children and its frequency associated with the labour participation of older people?

iv) To what extent is the intergenerational support provided by older people to their adult children and its frequency associated with the labour participation of older people?

1.4 Rationale of study

This study is motivated by the need for the Malaysian government to pay more attention to the design and implementation of labour market policy and programmes for older people, particularly to facilitate the continued participation of older people in economic activities (Tey and Hamid, 2014). This is in line with the objectives of the National Policy for the Elderly and the new National Policy of Older Persons 2011 which seek to develop the potential of elderly people so that they remain active and productive in the context of national development and to create opportunities for them to continue to live independently (Tey *et al.*, 2015).

The rationale of conducting this study also relates to the recent findings from the Malaysian Population and Family Survey 2014 (MPFS-5) data, which showed that only 23 percent of older people are currently participating in the labour market. Although not all older people are physically or mentally able to continue working in later life (Taskila *et al.*, 2015), the MPFS-5 findings showed that slightly more than three quarters (77 percent) of the valuable potential resource of older people are not being utilised in the labour market. Nevertheless, the analysis of the MPFS-5 also demonstrated that among those who are currently working in the labour market, a significant proportion (70 percent) reported working due to the need for daily expenses, compared to slightly more than a tenth (11 percent) that reported working in order to remain active. As the majority of the current cohort of older people who are working are concentrated in the agricultural sector with low educational attainment and no pension coverage (Masud *et al.*, 2015; Tey, 2017), these figures indicated that older people's labour participation in Malaysia was for economic needs rather than preferences motivated by a desire to remain economically active (United Nations, 2011). According to a recent study, 79.6 percent of older people remain dependent on cash assistance provided by their adult children (Tey, 2017). This situation is a concern as demographic and socio-economic changes may significantly reduce the effectiveness of traditional support mechanisms, as future responsibility in caring and support for older people

will be shared among fewer children (Abeykoon, 2017). This is supported by recent Malaysian data which showed that the average household size had dropped from 4.5 person in 2004 to 4.0 person in 2014 (National Population and Family Development Board, 2016). In terms of the living arrangements of older people, it is evident that the percentage of older people co-residing with their adult children has been declining, from 72.3 percent in 2004 to 62.5 percent in 2014 (Tey, 2017), posing greater challenges to future support patterns for older people.

Although current policies in Malaysia, such as a tax incentives towards adult children in order to encourage family support exist (Inland Revenue Board of Malaysia, 2016), nevertheless a greater understanding of the linkages between various forms of support will enable the government to make more informed choices on potential policy strategies (Cameron and Cobb-Clark, 2008). While social security remains inadequate, socio-economic changes have also eroded and weakened the traditional family support (Cameron and Cobb-Clark, 2008). Coupled with higher life expectancy, an escalating cost of living and depleting retirement savings, there is an increasing burden for wage-earning children to support their aged parents (Tey and Hamid, 2014). Thus, this study's exploration is motivated by the need to encourage continued employment for older workers who are fit and able to work, and who wish to continue working, in order to enable them to save for retirement and live a decent and active life in old age (Ambigga *et al.*, 2011). Economic participation among older people is also found to be one of the ways to guarantee income security in old age (Vaghefi *et al.*, 2016). As the future cohort of older people is expected to have better education compared to the current cohort (Hamid, 2015), it is an opportunity for Malaysia to utilise the potential resources, expertise and valuable experiences of older people in the labour market to aid national development.

Several studies have investigated labour participation patterns among older people, but few have focused on the linkages between intergenerational support, co-residence and labour participation. Understanding the key issues surrounding the needs of older people in terms of work participation, and taking into account intergenerational support from family members, is important for enabling the government to be in a position to review labour force policies and programmes, retirement age, health and financial needs and a social security system which best suits older people's capacity to work (Arokiasamy, 1997; Ambigga *et al.*, 2011)

1.5 Structure of the thesis

The overall structure of the thesis takes the form of seven chapters, including this introductory chapter.

Chapter Two presents older people's status and ageing-related policies in Malaysia. It provides an overview of the country's economic, demographic and socio-economic characteristics. It also discusses the characteristics of work participation of older people, drawing attention to issues relating to the older workforce's participation status and income resources. This chapter also provides an overview of intergenerational support and co-residence status among older people. Finally, the chapter reviews the ageing-related policies in Malaysia.

In an effort to contribute to a better understanding of the factors that shape the labour participation decision among older people, Chapter Three reviews previous literature on older people's work participation. Factors that are associated with work participation are discussed, for example, demographic factors which relate to the relationship between co-residence and work participation. It also reviews socio-economic factors, examining previous studies of the relationship between intergenerational transfers and work participation.

Chapter Four outlines the methodology and data sources used in this thesis. This chapter also presents the justification for the choice of methods used in this study and the selection of data. Ethical considerations are also discussed before providing the conceptual framework of the research.

Chapter Five presents the preliminary results of this study using the univariate and bivariate analysis. It provides the empirical data from analysis carried out in the Fifth Malaysian Population and Family Survey 2014 (MPFS-5). Initial findings from cross-tabulation provide insight into the association between the key, demographic, socio-economic, health, geographic and intergenerational support characteristics and the labour participation of older people. The results drawn from the analysis addressing the first research question of this study.

Chapter Six unravels the relationship between labour participation, co-residence and intergenerational support. This chapter develops the findings from the analysis in Chapter Five through the application of binary logistic regression analysis in order to identify the significant predictors of the likelihood of older people participating in the labour market after controlling for a range of variables.

The thesis concludes with Chapter Seven. In this chapter, a critical discussion of the key findings from the study in the context of previous studies and their potential policy implications is included. Subsequently, this chapter provides suggestions for future research in this area.

Chapter 2: Older people's status and ageing-related policies in Malaysia

2.1 Introduction

One of the most important demographic trends of the 21st century is population ageing (Wan Ahmad and Ismail, 2014b), and Malaysia has also been affected by this trend. Some of the critical factors which have led to population ageing are a reduction in both fertility and mortality (Leete, 1989; Mahari *et al.*, 2011) and the post-independence socio-economic transformation (Ong *et al.*, 2009). Together, these factors have resulted in the Malaysian population attaining better education (Cheong *et al.*, 2014), increased wealth (Chai and Hamid, 2015), and improved health (Yusoff and Buja, 2013). As greater modernisation and economic growth take place, the absolute number and proportion of older people in society also changes according to the stage of the demographic transition of a country (Wan Ahmad and Ismail, 2014b). Alongside with other developing countries, Malaysia is characterised as ageing at lower levels of economic development (Hamid, 2015). Although in the past the ageing phenomenon has been seen as a natural part of the biological process for individuals, there has been considerable attention focused in recent years on the implications of the increasing proportion of older people for society (Lim, 2012). However, the increasing population ageing has become a challenge for Malaysia (Wan Ahmad *et al.*, 2011) as this country has had a short time to prepare for the transition into an aged nation (United Nations, 2013). With the rise of awareness in population ageing issues worldwide, the Malaysian government has implemented initiatives to address these concerns domestically (Ong *et al.*, 2009).

This chapter begins with a brief background of Malaysia in terms of the demographic, economic and socio-economic characteristics in relation to the country's ageing population. This provides a clear picture of the current patterns and dynamics of ageing in Malaysia. Section 2.3 briefly describes the patterns of work participation among older Malaysians. A discussion of intergenerational support among older people is presented in Section 2.4. Then Section 2.5 provides a discussion on the co-residence status among older people. Finally, ageing-related policies are discussed in Section 2.6. At the end of this chapter, a summary combines the key points of interaction between literature on older people's work participation, intergenerational support and co-residence and the associated policy challenges which Malaysia is facing.

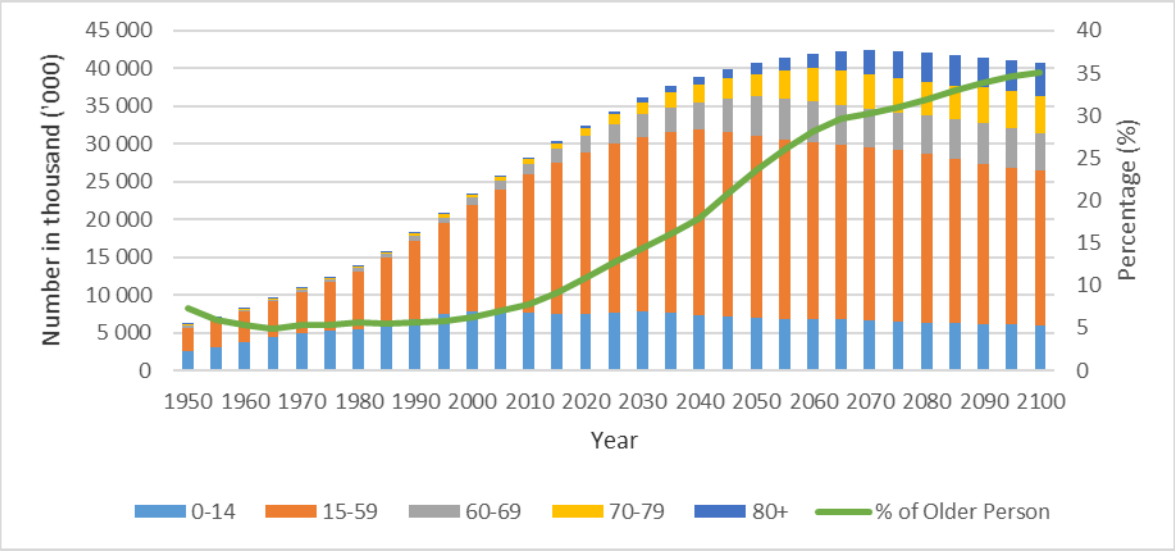
2.2 Ageing in Malaysia: Overview of the demographic, socio-economic and intergenerational support characteristics

2.2.1 Country background

Malaysia consists of 13 states and three federal territories, divided into two regions namely the Peninsular Malaysia and East Malaysia. Malaysia was under British rule from 1945 until gaining independence in 1957. Before 1970, agriculture was the main economic activity, where the mainstays were rubber and tin production (Mat Zin, 2014). Over time, the economy has diversified beyond agriculture and primary commodities particularly when industrial transformation took place during the late 80s and early 90s and led to a more export-led industrialisation and the infusion of foreign direct investment (Mahari *et al.*, 2011). In 1970, slightly more than half of the labour force was employed in the agriculture sector (Mahari *et al.*, 2011); however, this share had declined to 12.5 percent by 2015 (Department of Statistics Malaysia, 2016b). This has resulted in high economic and employment growth, with an increase also in urbanisation, as the urban population in 1970 was 33 percent and reached 74 percent in 2014 (United Nations, 2015d). Since independence, Malaysia has achieved remarkable economic progress with income per capita increasing approximately eight-fold (Hill *et al.*, 2012). Malaysia's development strategy has been guided by three long-term policies: The New Economic Policy (1970–1990), National Development Policy (1990–2000) and the National Vision Policy (2001–2010), which are aimed at restructuring the society, eradicating poverty and ensuring the redistribution of income (Lee and Lee, 2017).

During this time and in subsequent years, the growth of the older population in Malaysia is continuing. As indicated in Figure 2-1, the data from the United Nations (2015c) reveals that the proportion of older persons aged 60 years and above rose dramatically since 2010, although the increase was greater from 1960. The population aged 60 and over increased from 5.3 percent in 1960 to 7.8 percent in 2010 and is projected to reach 14.4 percent in 2030. Between 2015 and 2030, the change in the percentage of older persons is projected to be 5.1 points. Projections by the United Nations (2015c) show that by 2040, the population aged 60 and over will almost equal those aged below 15 (19 versus 17.8 percent respectively); thus it is not surprising that the proportion of people aged 60 and over will surpass the young population aged up to 15 by 2050 (16.9 versus 23.6 percent). Figure 2.1 also shows the three age cohorts, the young-old (60–69 years), old-old (70–79 years) and oldest-old (80 years and over). Apparently, the data indicates a steady growth of the oldest-old age group.

Figure 2-1: Growth of older people in Malaysia, 1950–2100



Source: Authors' calculations based on the World Population Prospects: The 2015 Revision (UN, 2015)
Note: Projection begins from year 2020

As Malaysia is a multi-ethnic and multi-cultural country with four main ethnic groups, broadly classified as Bumiputera (Malay and Indigenous), Chinese, Indian and Others (including non-Malaysian citizens), it is significant to examine the proportion of persons aged 60 and over in the total population within each ethnic group. This is important as the ethnic dimension of Malaysia's population contributes to different ageing experiences (Hamid, 2015). Based on Table 2-1, the proportion of older people in the Malay/Bumiputera ethnic group was 4.69 percent in 1980 and will rise to 14.23 percent by 2040. The proportion of older people in the Indian ethnic group stood at 5.05 percent in 1980 and is expected to increase to about 21 percent in 2040. The Chinese group on the other hand, experienced a higher proportion of older people at the start of the period compared to the rest of the ethnic groups with 7 percent and will rise faster to reach 26.13 percent by 2040. The table below reveals that ethnic differences in the rates of ageing population will persist. Since the Chinese ethnic group experienced a fertility decline earlier and shows a higher longevity than the rest of ethnic groups (Hamid, 2015), this group will continue to record the highest proportion of older people in Malaysia (Saw, 2015a).

Table 2-1: Number and percentage of older population (60+) in Malaysia by ethnicity, 1980–2040

	Number in Thousands ('000)					Percent (%)			
Year	Bumiputera	Chinese	Indian	Others		Bumiputera	Chinese	Indian	Others
1980	381.8	311.6	60.1	5.9		4.69	6.99	5.05	6.26
1990	568.4	359.3	77.0	10.8		4.92	7.20	5.47	7.33
2000	804.2	501.0	93.9	12.5		5.64	8.80	5.59	4.62
2010	1,242.90	777.6	150.3	12.0		7.09	12.16	7.88	6.32
2020	1,889.30	1,153.80	254.7	21.1		9.12	16.90	12.15	6.89
2030	2,709.10	1,540.30	373.5	33.9		11.42	21.87	16.82	8.70
2040	3,704.30	1,854.60	473.9	47.0		14.23	26.13	20.99	9.85

Source: (Hamid, 2015)
Note: Projection begins from year 2020

Thus, the evidence above shows that the Malaysian population is ageing, and this is a by-product of the process known as demographic transition (Wan Ahmad and Ismail, 2014b). Particularly, the demographic transition refers to the reductions in mortality which are followed by reductions in fertility (United Nations, 2013). These two processes of transition will profoundly affect the age structure of a country (Hamid, 2015), leading to smaller proportions of children and larger proportionate shares of older people in the population (United Nations, 2013).

A close examination of the demographic transition showed that Malaysia experienced a decline in the total fertility rate (TFR) from an average of 6 children born to women aged 15–49 years in 1960, to 2.9 in 2000 and 2 in 2015 as depicted in Figure 2-2. The decline in the TFR is reflected by the increase in the mean age of the mother at the first live birth (Mahari *et al.*, 2011). Based on the data from the Department of Statistics Malaysia (2016e), the mean age of the mother at the first live birth has increased from 26.6 years in 2001 to 27.6 years in 2015 (Mahari *et al.*, 2011). It is also observed that patterns of marriage have an effect on the overall fertility level, leading to changes in the size and age structure of the population. The mean age at first marriage among Malaysian women has increased from 25.1 in 2000 to 25.7 in 2010 (Department of Statistics Malaysia, 2010). An increasing educational level among women empowers them to participate in the labour market, and this trend further delays women in Malaysia from getting married and having children (Mahari *et al.*, 2011). Generally, the declining TFR means that couples will have

fewer children compared to the past, thus causing a continuous decline in the family size (Falkingham, 2015).

The TFR, however, reveals a wide variation among different ethnic groups. While the TFR has fallen for all three major ethnic groups, the Bumiputera group recorded the highest TFR compared to other ethnic groups, as can be seen in Table 2-2. This contributed to a significant impact on the overall TFR of Malaysia as a relatively high fertility rate among the Bumiputera group can slow down the ageing of the population to a greater extent compared to the Chinese and Indian groups. In 2015, the TFR was 2.6 for the Bumiputera group, 1.4 for the Chinese group, 1.4 for Indian women and 0.8 for women of other ethnic backgrounds. This implies that if the Bumiputera group were to experience a greater decline of the TFR than projected, then Malaysia could experience more rapid ageing (Asher, 2011). As stated earlier, a significant decline of the fertility rate among the Chinese group will continue to be seen in the coming decades (Hamid, 2015). Thus, it is not surprising that the proportion of older people in this ethnic group is expected to exceed 15 percent by 2020 as indicated in Table 2-2.

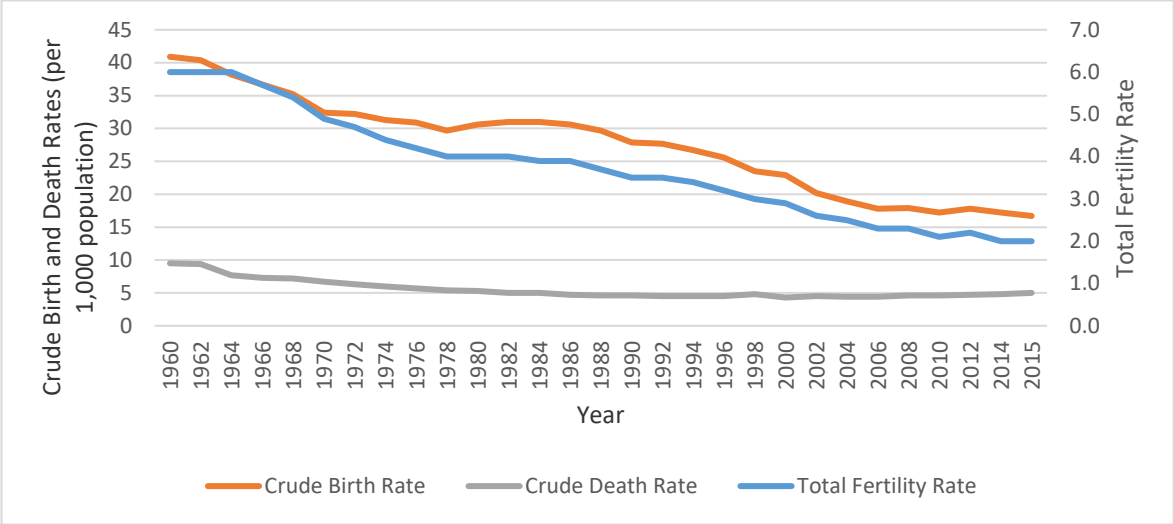
Table 2-2: Total fertility rate by ethnic groups, Malaysia, 2000–2015

Year	Bumiputera	Chinese	Indian	*Others
2000	3.5	2.6	2.4	1.3
2005	2.8	1.9	2.0	1.1
2010	2.6	1.5	1.7	1.1
2015	2.6	1.4	1.4	0.8

Note: * Includes non-Malaysian citizens
Sources: Department of Statistics Malaysia (2016e), Department of Statistics Malaysia (2015b)

Figure 2.2 also shows that the crude death rate recorded a decline from 9.5 per 1,000 population in 1960 to 5 in 2015. This is due to the advancement of the health status and healthcare facilities in Malaysia (Mahari *et al.*, 2011) which further contribute to an improvement in survival and subsequent rise in the life expectancy for both males and females (Kimm *et al.*, 2014).

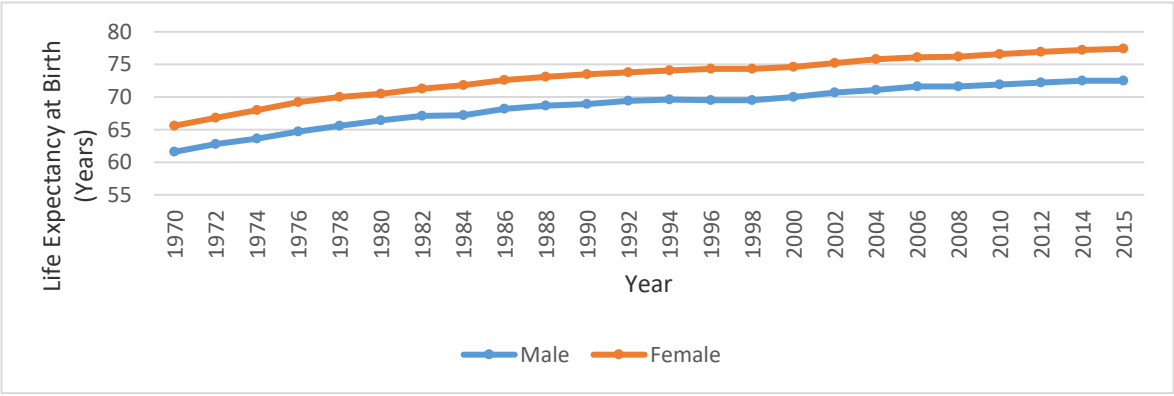
Figure 2-2: Crude birth rate, crude death rate and total fertility rate, Malaysia 1960–2015



Note: CBR &CDR, 1960–62 Peninsular Malaysia; TFR, 1960–69 Peninsular Malaysia
Source: Department of Statistics, Malaysia 2015

As seen in Figure 2-3, life expectancy at birth has increased: a male born in 2015 can expect to live on average for 72.5 years compared to 77.4 for females, and this compares to a life expectancy of 61.6 and 65.6 years for males and females respectively in 1970. This means that at age 60, male and female retirees can expect to live for another 12 and 17 years respectively. The increasing longevity, coupled with the improving standard of living may entail a shortage of savings due to a longer period of needs and expenditure which may result in inadequate financial support in later life (Vaghefi *et al.*, 2016). Hence, in line with a better health status and a longer life span, many older people are capable of continuing working after the retirement age (Ng and Sia, 2011) and their economic participation can guarantee income security in old age (Vaghefi *et al.*, 2016).

Figure 2-3: Life expectancy at birth by sex, Malaysia, 1970–2015



Note: 1970–1990 Peninsular Malaysia
Source: Department of Statistics Malaysia, 2015

Since 1970, life expectancy continued to show an increasing trend and it is also evident that the three main ethnic groups experience varying life expectancy as depicted in Table 2-3. The Chinese

community has the longest average life expectancy with 75.1 for males and 80.1 for females, followed by Bumiputera individuals with 71.2 for males and 76.1 for females in 2015. Indian persons recorded the shortest life expectancy compared to the rest of the ethnic groups.

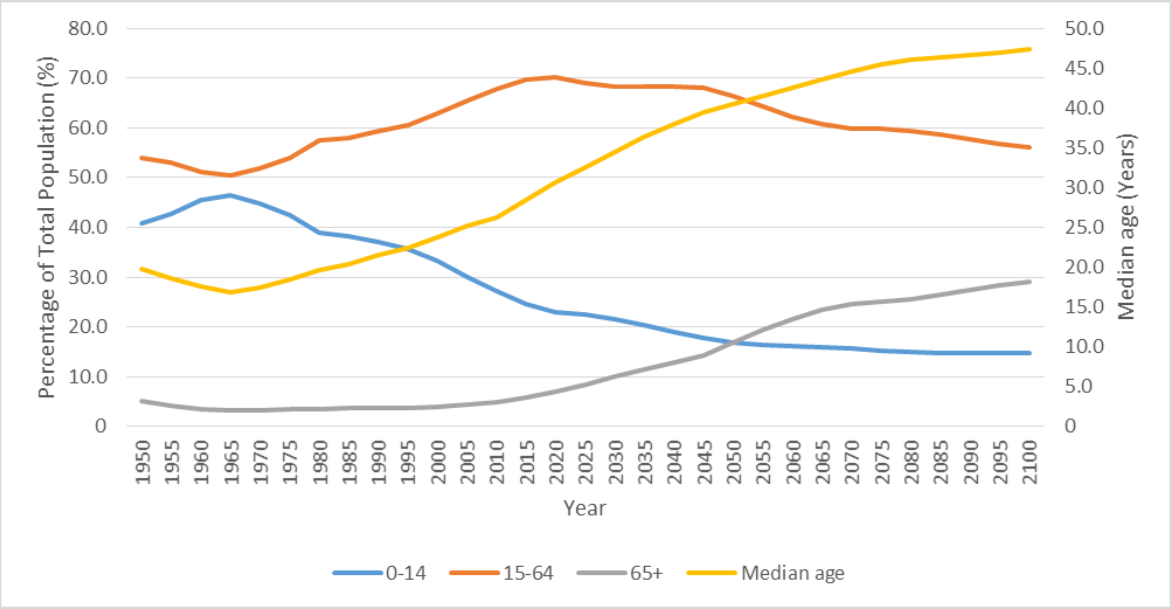
Table 2-3: Life expectancy at birth by ethnic groups and sex, Malaysia 1970–2015

Year	Bumiputera		Chinese		Indian		Others	
	Male	Female	Male	Female	Male	Female	Male	Female
1970	60.8	62.7	64.0	71.3	59.0	61.3	61.4	67.6
1980	66.5	68.9	68.0	74.0	62.1	67.0	66.6	71.5
1990	69.0	72.4	70.6	76.3	64.4	70.4	70.4	73.7
2000	69.0	73.3	72.4	77.6	65.7	73.5	73.6	75.7
2010	70.7	75.4	74.4	79.1	67.6	75.7	75.7	76.7
2015	71.2	76.1	75.1	80.1	67.7	75.8	76.8	78.0

Note: * Includes non-Malaysian citizens
1970–1990: Peninsular Malaysia
1991–2015: Malaysia
Source: Department of Statistics Malaysia (2016d)

The impact of the decline in fertility rates is significant in the young age population, the share of which in the total population shows a projected drop from 27.4 percent in 2010 to 18.6 percent in 2040 (Department of Statistics Malaysia, 2016c). Changes in the age structure due to the declining fertility rate are also reflected in the declining percentage of the working age group (15–64 years). As shown in Figure 2-4, the percentage of the working age group increased from 51.9 percent in 1970 to 70 percent in 2020. However, projections show a declining percentage of the working age group since then to 68.4 percent in 2030 and it is expected to decline further. It is evident that the changes in the age structure also result in the increase of the older age group (65 years and over) in the population.

Figure 2-4: Population age structure and median age, Malaysia, 1950–2100



Source: Author's calculation based on the World Population Prospects: The 2015 Revision (UN, 2015)
Note: Projection begins from year 2020

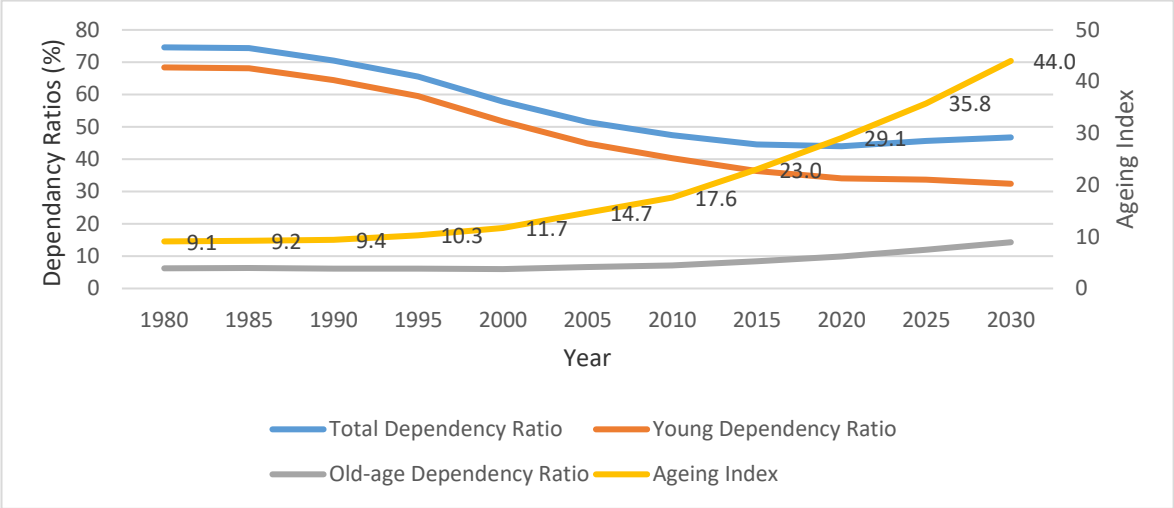
The emerging issues of population ageing can be analysed by using several indicators (Hamid, 2015). The population's median age is one such indicator. According to the United Nations' definition, the median age is the middle value in the age distribution such that half of the total population is older and half is younger than the said age (United Nations, 2015a). According to Hamid (2015), a young population is characterised by a population with a median age below 20 years, an intermediate population has a median age between 20-29 years whereas an ageing population is one with a median age of 30 years or more. Figure 2-4 shows that the median age in Malaysia is rising. For example, the median age was 19.6 years in 1980; this figure rose to 28.5 years in 2015 and is expected to reach 30.6 years in 2020. The median age is expected to increase further to 34.5 years in 2030. Based on this indicator, Malaysia will be an ageing population in 2020 as median age reaches 30 years or more. In other words, in 2020, 50 percent of the population in Malaysia would be aged 30.6 years or more, and another 50 percent aged less than 30.6 years. The rising median age is evident that the youthfulness of the population is decreasing and Malaysia's population structure is moving towards ageing (Wan Ahmad and Ismail, 2014b).

The total dependency ratio is also one of the common descriptive measures of population ageing which is used to measure potential support needs in the population (United Nations, 2015a). Based on the definition provided by the United Nations (2015a), the youth dependency ratio refers to the number of people aged below 15 per 100 persons aged 15–64, whereas the old-age dependency ratio indicates the number of persons aged 65 or over per 100 persons aged 15–64. Thus, the dependency ratio or total dependency ratio is the sum of the young dependency ratio and the old-age dependency ratios. The dependency ratio indicates the extent to which the

population in productive age population (population aged 15-64) to bear the burden of non-productive population (population below age 15 and above age 65) (Wan Ahmad and Ismail, 2014b; Hamid, 2015). Based on the United Nations (2015c) data, the proportion of Malaysians aged 60 and over will intersect those aged below 15 years by 2045 and will surge ahead after that. Projections also show that the productive age group (15–64 years old) will begin to decline after 2020, resulting in an increase of what some literature describes as the old age dependency burden (United Nations, 2015c). As can be seen in Figure 2.5, there are two indicators that present a crude measure of the so-called economic burden in society, namely the dependency ratio and the ageing index (Hamid, 2015). Based on the data from Euromonitor International (2016), the total dependency ratio has been in a decline from 1980 onwards and is expected to continue declining until 2020, after which it is projected to increase. The reason behind this increasing trend from 2020 is the increase in old age dependency, which indicates the increasing number of older people to the total dependency ratio. In other words, a high dependency ratio indicates the dependency burden that the working population or the economically active proportion of the population have to bear either directly through informal family support, or indirectly through taxation (Ingham *et al.*, 2009). Ingham *et al.* (2009) further suggested that the rising dependency ratio will lead to a negative impact on future growth, savings, consumption, taxation and pensions. On the other hand, the youth dependency ratio showed a sharp downward trend from 1980 to 2020 and will continue to decrease further from then on. These trends reflect the challenges facing older people with respect to their dependency in old age, where fewer kin and potential vulnerability to social isolation or support (United Nations, 2017) may induce the participation of older people in the labour market as a means to support themselves in their old age (Wan Ahmad *et al.*, 2011).

The ageing index is another young-to-old population indicator defined by Euromonitor International (2016) as the number of people aged 65 or over per hundred children aged below 15. According to Hamid (2015), a population is considered young if the ageing index is less than 15, while an index of 30 shows an ageing population. As shown in Figure 2-5, the ageing index of Malaysia shows an increasing trend from 1980 onwards. In 1980, there were around 9 older persons per 100 persons below the age of 15. It is projected that in 2020, Malaysia will be an ageing nation as the number of older persons will reach almost 30 per 100 persons below the age of 15.

Figure 2-5: Dependency ratios and ageing index, Malaysia, 1980–2030



Source: Author's calculation based on the Euromonitor International (2016)
Note: Projection begins from year 2020

Thus far, this section has shown that there are signs that Malaysia is facing rapid population ageing, which is in line with other countries in the world in terms of its general demographic trends. By examining the growth of older people, the median age, dependency ratio and ageing index, in tandem with the decline in the fertility and mortality rates, it becomes evident that Malaysian policymakers will face a great challenge in terms of the work and retirement, living arrangements, and support for future cohorts of older people (Mohd Hashim, 2014). Having affected the demographic profile of the country, an ageing population will also pose a significant impact on Malaysia's pattern of socio-economic characteristics (Karim, 1997).

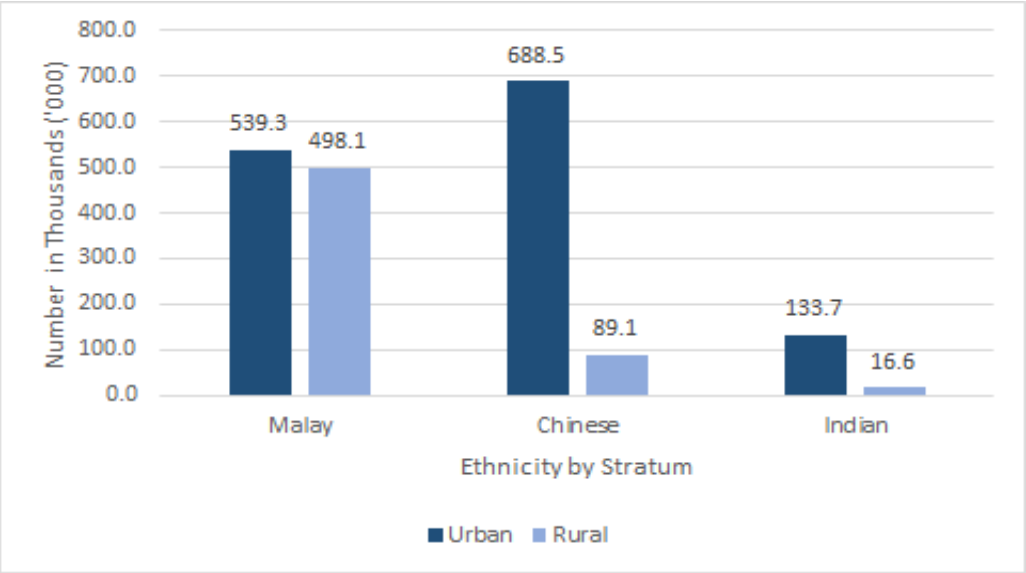
2.2.2 Socio-economic characteristics of older Malaysians

The structure of the population has evolved not only due to demographic determinants like fertility but also as a result of social and economic forces (Saw, 2015b). In this section a brief outlook of the rural–urban segregation and education level among the older population in Malaysia is presented. The variation in these socio-economic aspects becomes an indicator acting to differentiate Malaysian population. For example, socio-economic factors such as education level, will determine an individual's economic status in old age, which may influence labour participation decisions among people in later life (Hamid, 2015). Furthermore, the extent of participation and types of economic activities with the availability of social security schemes differs considerably among those residing in urban and rural areas (Mohd Nor and Said, 2014), thus influencing the likelihood of individuals participating in the labour market in their old age. Understanding socio-economic characteristics is important as the direct consequences of socio-economic changes has further influenced the population in different ways and in varying degrees

(Hamid, 2015), posing challenges and opportunities for the older population in terms of labour participation decisions in their later life.

The "rule-and-divide" policy which was adopted during the British occupancy was part of the basis for the economic divide of the ethnic composition of the Malaysian population, and it has directly influenced the income composition of the population as well as the economic position of each ethnic group (Mat Zin, 2014; Saari *et al.*, 2015). As such, economic segregation meant that the Malay/Bumiputera group resided in rural areas and worked in agriculture and, the Chinese group settled in towns for commercial and mining activities, whereas the Indian group was located in rural and suburban areas used for plantation, which were occupied by general workers (Saari *et al.*, 2015). Figure 2.6 shows the rural–urban divide among the three main ethnic groups in Malaysia's population ageing by stratum. Data from the 2010 census showed that out of the total 1,361,500 persons aged 60 and over who reside in urban areas, approximately 539,300 or 40 percent were Malays. The Chinese ethnic group recorded the highest number of older persons residing in urban areas which accounted for 51 percent of all urban residents, and the lowest proportion was made up of the Indian ethnic group with a total number of only 133,700 or approximately 10 percent of older urban dwellers. In contrast, only 15 percent of the Chinese ethnic group reside in rural areas. The Malay ethnic group, which accounted for 82 percent, were found to be the highest among the rest of the ethnic groups to be residing in rural areas. The data suggest that varying degrees of development between rural and urban areas could lead to rural–urban differences in the socio-economic characteristics of these regions. Thus, differences in the geographical distribution among ethnic groups imply that tackling population ageing issues cannot be a one-size-fits-all approach (Hamid, 2015).

Figure 2-6: Distribution of Malaysians aged 60 and over by ethnicity and place of residence, 2010



Source: Department of Statistics Malaysia (2010)

However, concomitant with the global trend of urbanisation, the level of urbanisation in Malaysia has increased from 34.2 percent of the total population in 1980 to 62 percent in 2000 and 71 percent in 2010 (Department of Statistics Malaysia, 2010). As a result, the Malaysian older population is becoming more concentrated in urban areas, and this trend has created intense competition in terms of housing and jobs for the urban population (Ho, 2008).

As low educational attainment is one indicator of socio-economic disadvantage that may begin in early life (Hamid *et al.*, 2010), a high educational attainment relates to a higher socio-economic status. This is reflected in older persons with better financial literacy (Hogarth and Hilgert, 2002) and better access to health care (Hamid *et al.*, 2010). However, the majority of older Malaysians today are children who grew up during the pre-independence era and had limited access to education, as education during those times was costly (Hamid, 2015). According to the 2010 census of the Department of Statistics Malaysia (2013), only about 3.7 percent of persons aged 60 years and above attained tertiary education, whereas the majority (56.5 percent) did not attend any formal education. As low education attainment is associated with non-formal sector employment (Hamid, 2015), these groups of older people, especially those residing in rural areas, may be threatened by low-income insecurity (Sulaiman and Masud, 2012). Such insecurity may be due to the lack of availability of a fixed income, limited life savings (Vaghefi *et al.*, 2016), a lack of compulsory contribution to social security or a lack of a retirement plan to support themselves (Azman *et al.*, 2010).

Understanding the socio-economic variations among older people suggests that the future policy requirements for meeting the needs of older people are becoming complex and challenging. The social characteristics have relevance in understanding the labour participation of older people as one's socio-economic background can determine their economic status in old age. Thus, the next section will address the situation of work participation among older people in Malaysia.

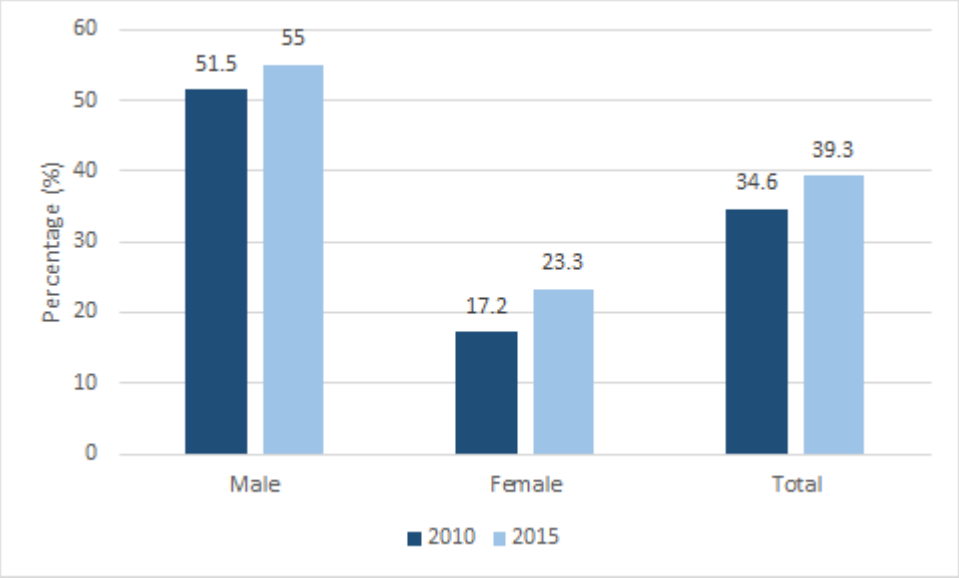
2.3 Work participation of older people in Malaysia

Along with population ageing and the increase in the percentage of older people, the extent to which older people are contributing to economic participation becomes crucial. Analysing the work participation of older people in Malaysia is important as labour participation may have a direct bearing on their economic well-being (Wan Ahmad *et al.*, 2011).

Figure 2-7 compares the labour participation rates for age group 60–64 by sex in 2010 and 2015. The data obtained from the Department of Statistics Malaysia (2016b) shows that there is an increase in the labour force participation rate (LFPR) among older people aged between 60–64. For example, in 2010, the LFPR for 60–64 age group was 34.6 percent, while 39.3 percent

recorded in 2015. Data also indicated that the male labour participation rate is higher than the female labour participation rate in both periods. This is consistent with other findings which showed that the work status differs between men and women aged 60 years and over, where older men were three times more likely than older women to still be working (Tey and Hamid, 2014). The lower LFPR for women compared to their male counterparts shows that elderly women in Malaysia can be expected to have less access to economic resources compared to men (Masud *et al.*, 2006).

Figure 2-7: Labour force participation rate for age group 60-64 by sex, Malaysia, 2010 and 2015



Source: (Department of Statistics Malaysia, 2016b)

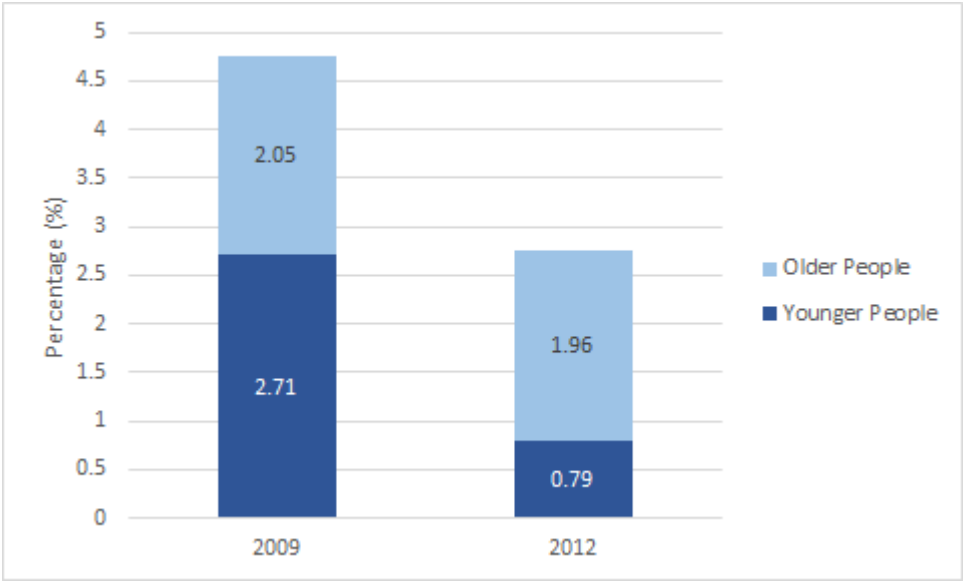
However, although the female LFPR is significantly lower than that of men (Mahari *et al.*, 2011), Malaysia has been witnessing a significant increase in women's labour participation since 1990. As indicated in Figure 2-7 above, the increase in the female labour participation rate from 2010 to 2015 was 6.1 percent, which was greater than the increase in the male labour participation rate (3.5 percent) during the same period. Findings suggest that the higher increase of female labour participation rates compared to those among males indicates the combined effects of greater education opportunities, improved maternal and health care and the rise of the average age of marriage which allows women to take advantage of increased employment opportunities (Abu Bakar and Abdullah, 2007).

In terms of the type of work which older people engage in, there are two possibilities: some continue their previous jobs while others may engage in a new job in later life. Research findings have indicated that older Malaysians participated in the agricultural sector or small businesses largely due to the fact that those types of work were not subject to legal regulations about a mandatory retirement age (Tey and Hamid, 2014). It is found that in relation to work participation

among older people, the extent of economic activity varies considerably between rural and urban areas. According to the Department of Statistics Malaysia (2016b), the LFPR among Malaysians within the age group of 60–64 was higher in the rural areas (49.9 percent) compared to the urban areas (35.4 percent). Similar findings from the National Population and Family Development Board Malaysia (2004) showed that 30 percent of people aged 55 and above in Malaysia were currently working, with a higher percentage among males and those residing in rural areas. Regional differences in the labour participation rate can be explained by the types of work that older persons were engaged in earlier on such that in less developed states in Malaysia, older people were likely to be working in the informal sector or to be self-employed especially in the agriculture sector (Mohd, 2013). On the other hand, older people living in a more developed part of the country may have been previously working in the urban sector where they were subjected to a mandatory retirement age (Tey and Hamid, 2014).

Vaghefi *et al.* (2016) who conducted a study on poverty among the Malaysians found that older people are associated with a declining standard of living. Coupled with a high tendency of deteriorating health and declining livelihood opportunities (Barrientos, 2007), such factors could be the cause of a high poverty incidence and vulnerability among older people (Vaghefi *et al.*, 2016). For instance in 2012, data from the Malaysia Household Income Survey (HIS) indicated a higher incidence of poverty among older people aged 60 and above in Malaysia compared to younger people (Mohd *et al.*, 2018). As shown in Figure 2.8, although poverty declined between 2009 and 2012, the incidence of poverty among older people was 1.96 percent compared to only 0.79 percent among the younger people in 2012 (Mohd *et al.*, 2018). A higher incidence of poverty among older people suggests a low likelihood for older people to escape from the poverty trap compared to the younger population (Hurd, 1990). This is due to the fact that older people may have a limited capacity to prolong their labour efforts and inadequate retirement savings used for healthcare expenditure, while younger people may have alternative ways of escaping poverty (Mohd *et al.*, 2018). In relation to work status, HIS data also showed that the incidence of poverty among older people worsens if they are reported as not currently working (Mohd *et al.*, 2018). Not surprisingly, findings from another nationwide survey, entitled Economic and Financial Aspects of the Older Malaysians in 2004, showed that 30 percent of older people reported wanting to continue working after retirement, with financial considerations being the most important reason for their choice (Tey and Hamid, 2014).

Figure 2-8: Poverty incidence among older people and younger people based on the Household Income Surveys (HIS), 2009 and 2012, Malaysia.



Source: Household Income Surveys, 2009 and 2012 (Mohd et al., 2018)

There are several studies that have examined the sources of income of older people in Malaysia (Caraher, 2000; Chan *et al.*, 2010b; Sulaiman and Masud, 2012; Masud and Haron, 2014). According to a study by Tey and Hamid (2014) conducted in Malaysia, three main classifications of sources of income among older Malaysians were identified: (i) job-related income, (ii) investment-related income and savings, and (iii) social income, which consists mainly of financial transfers from their adult children. Their study indicated that the highest sources of income received among older males were from job-related income, while for females it was remittances from their adult children (Tey and Hamid, 2014). Those retiring from formal employment such as those from the public sector would be receiving pension payments, while those from the private sector would receive a lump-sum of their savings in the form of the Employees Provident Fund (EPF) upon retirement (Sulaiman and Masud, 2012). Until recently, people from the informal sector of employment were unprotected by any formal social protection scheme (Mohd, 2013). According to Mohd (2015, p.54), "the informal sector can include a wide range of workers outside the formal sector who can belong to a number of categories: those employed in small enterprises run by family members, owners of own businesses (self-employed), workers affected by the informalisation of labour relations with their employers, self-employed and those engaged in the primary sector (agriculture and fishery)". Based on the Malaysia's informal sector workforce survey report in 2015, there were 1.4 million workers in the informal sector or 11.4 percent of the total number of those in employment in 2015 (Department of Statistics Malaysia, 2016a). Despite the government's introduction of the i-Saraan (previously known as 1Malaysia Retirement Savings Scheme) in 2010 to encourage those who do not earn a regular income to voluntarily contribute

to EPF, only 6 percent participated in this scheme in 2013, leaving 94 percent of workers in the informal sector unprotected by any social protection schemes (Mohd, 2015).

Nevertheless, as individuals advance into older age, those who have been employed may start drawing their pension at a relatively younger age (Masud *et al.*, 2006). This is one of the reasons why the current pension system may not be able to guarantee a secure income in old age, as it is common for individuals to withdraw their savings before retirement (OECD, 2008). It has been found in a nationwide survey conducted in 2013–2014 among EPF retirees that 62 percent have a lower retirement income compared to their pre-retirement income (Vaghefi *et al.*, 2016). Thus according to Masud *et al.* (2006), not only self-employed persons, but all those in formal employment may need to continue working or to depend on intergenerational financial transfers from their adult children in order to sustain an inflow of income in their later lives. However, due to the increasing life expectancy, retirees are expected to face a longer life in retirement (Sulaiman *et al.*, 2010). It was only in 2013 that the official retirement age for both the government sector and the private sector in Malaysia was increased to 60 years (Ministry of Human Resources Malaysia, 2013). The increase in the minimum retirement age makes it possible for older people to work longer and save more for retirement (Sulaiman *et al.*, 2010), thus maintaining the standard of living for the entire population. This increase reflects the urgency of the government to cope with the ageing population and to bring the retirement age in line with other countries in the region (Tey and Hamid, 2014), for example Singapore where the retirement age was increased to 65 years old (Vaghefi *et al.*, 2016).

2.4 Co-residence and intergenerational support among older people in Malaysia

Intergenerational support depends on the living arrangements of a family (Mohamad *et al.*, 2016). The rapid demographic shift which has caused changes in family arrangements (Hamid, 2015) has also drawn attention to the issue of family support and older people's care in Malaysia (Md Yusuf, 2012). Generally, countries in Asia have the highest proportion of older people co-residing with their adult children (United Nations, 2011, 2017), and co-residence is regarded by Asian governments as an important form of informal support (Chan, 2007). At the same time, caring for grandchildren is a common form of support provided by older people, in exchange for support provided by their adult children (Ho, 2015). However, co-residing with adult children can be one of the ways for older persons to ameliorate their economic hardship (Masud *et al.*, 2008) as co-residing does not only fulfil emotional needs (DaVanzo and Chan, 1994) but can also stimulate financial exchanges between older and younger individuals (Koh and MacDonald, 2006). As put

forward by Rendall and Speare (1995) in their study in the United States, living with family has a poverty-reducing effect.

In Malaysia, the majority of older persons co-reside with their adult children (Masud *et al.*, 2008). For example, data from the MPFS-4 conducted in 2004 showed that 63 percent of older people co-reside with their adult children (Kimm *et al.*, 2014). Earlier data also suggests a similar trend as the Second Malaysian Family Life Survey (MFLS-2) which was conducted in 1988–1989 revealed that most Malaysian older people co-reside with at least one of their adult children (DaVanzo and Chan, 1994). In a more recent study in 2010 by Ibrahim (2012), a similar pattern was observed with 78.9 percent of older people co-residing with their children. Apart from such an arrangements, many Malaysians were also found to be quasi-co-residing, where older people live separately with their adult children but in close proximity (Ngin and DaVanzo, 1999; Teh *et al.*, 2013).

Although many studies on co-residence in Malaysia featured similar findings, nevertheless the patterns of co-residence differ according to the gender composition of the children (Chan and Davanzo, 1996), whether there is a rural or urban residence (DaVanzo and Chan, 1994) and the ethnicity of individuals (DaVanzo and Chan, 1994; Chan and Davanzo, 1996; Momtaz *et al.*, 2010). For example, DaVanzo and Chan (1994) found that the Malays/Bumiputera groups were the least likely to co-reside with their adult children, whereas Indian older people were the most likely to do so. In terms of the gender composition of children and its relationship with co- residence, it was found that Chinese ethnic older people were more likely to co-reside with their sons compared to their daughters, while the Malay older people showed a preference for living with their daughters (Chan and Davanzo, 1996).

According to Ibrahim *et al.* (2012b), co-residence with adult children is the most influential determinant of the type of support provided to and provided by older people. The flow of intergenerational transfers in Malaysia is typically from the younger to the older generation (Teh *et al.*, 2013). Findings suggest that the types of support which older parents receive, and the frequency of assistance, differ between older people who co-reside with their adult children and those who do not, as older people who co-reside with their adult children are three times more likely to receive support than those who do not co-reside with their children (Ibrahim, 2012). However, previous research by Lillard and Willis (1997) conducted in Malaysia revealed that there is a high incidence of intergenerational transfers between non-co-residential adult children to their elderly parents.

In Malaysia, the common trend of co-residence with adult children may be partly due to the government's effort in trying to reinforce family support networks. Various incentives, which

started in 1979 were provided to adult children in order for them to support their parents. This is in line with the ageing-related policies initiated by the government to address the needs of older people in the country.

The following section will address various government policies relating to ageing and incentives provided and social protection schemes that are available to strengthen the safety net for older people as well as to cater for their welfare. A lack of income in the context of fewer kin for support and weak social protection among individuals are the main concerns in old age which may force older people to participate in the labour market as a means to earn income for daily survival (ECLAC / ILO, 2018). Understanding the current policies in place would be beneficial for guiding the future direction of the national policy on ageing in Malaysia. While ensuring policies focus on the key areas of concern, new means of potential assistance can be identified and current policies can be improved with regard to the complex relationship between labour participation and supporting one's family in later life.

2.5 Ageing-related policies in Malaysia

The growing awareness of population ageing has led to a number of national policies put in place for older people in Malaysia (Ambigga *et al.*, 2011). The first policy was the National Social Welfare Policy in 1990, which addressed the need for care for older people by families and communities. This was strengthened by the adoption of the National Policy for the Elderly (NPE) in 1996, in accordance with the 1st World Assembly on Ageing held in Vienna in 1982 (Hamid, 2015). One of the objectives of the plan was to develop the potential of older persons so that they remain active and productive in the context of national development. A few years later, the new National Policy of Older Persons (NPOP) was designed for 2010–2020, and was endorsed by the government in 2011. At the same time, the Ministry of Health developed a National Health Policy for Older Persons in 2008.

The new NPOP was adopted to address the needs of older persons so as to ensure their well-being, health, and active and productive ageing. This new policy incorporated the themes from the Second World Assembly on Ageing 2002 in its overall framework (Hamid, 2015). In relation to the focus of this study, there have been many initiatives developed by the government to address the issue of population ageing as well as to cater for the needs of older people in terms of income security and family care.

In terms of strengthening the family institution as previously mentioned in Section 2.4, Malaysia has long encouraged adult children to support their older parents through tax incentives. Since

1979, an amount of MYR 1,000 (GBP 189)[1] of tax rebate was provided to adult children who co-resided with their older parents (DaVanzo and Chan, 1994). A tax amendment was introduced later in 1991 and, as a result, adult children were also able to claim MYR 1,000 (GBP 189) tax deduction specifically for their older parents' medical expenses (DaVanzo and Chan, 1994). Effective from 1st January 2016, the government have announced a tax relief for parental care whereby taxpayers can opt for either a tax relief up to RM 5,000 (GBP 947) for medical treatment and care of parents who are ill or a tax relief amounting to RM1,500 (GBP 284) each for the mother and RM1,500 (GBP 284) for the father as relief for adult children who provide support to their parents. Apart from that, a tax relief amounting up to RM6,000 (GBP 1,135) is also provided for taxpayers for the purchase of basic supporting equipment for their disabled parents. Thus, such incentives clearly indicate that the government acknowledges the positive role of children in taking care of the welfare of their older parents and at the same time ensuring the strengthening of the family institution.

Malaysia's social protection schemes can be categorised into 5 main pillars (Holzmann, 2015). Accordingly, Pillar 0 refers to the general social assistance which is provided by the government (Mohd *et al.*, 2014). For example, the Malaysian government provides the *Bantuan Orang Tua (BOT)* or Elderly Financial Aid, a cash assistance of RM300 (GBP 57) per month to poor older people with income less than RM720 (GBP 136) per month (Department of Social Welfare Malaysia, 2014). The formal social protection also consists of Pillar 1, which includes the social security programme under the Social Security Organisation, providing retirement benefits as well as survivorship and disability benefits.

Pillars 2 and 3 cover the civil servants under the defined benefit pension schemes and also the private sector workers under the defined contribution Employees Provident Fund (EPF). The defined benefit pension scheme is a non-contributory scheme, also known as the old age pension scheme under the Government Pension Ordinance 1951. This old age pension scheme is applicable to the employees of the government, semi-government agencies, local authorities and statutory bodies. In contrast, the defined contribution EPF, which was formed under the Employees Provident Fund Act 1991 is a compulsory saving scheme, based on a prescribed rate of contributions by both employers and employees and accumulated as savings in a personal account (Asher, 2011). In relation to that, it was previously observed that the ministry had increased the retirement age for private sectors to the age of 60 under the Minimum Retirement Age Act 2012 which came into effect on 1 July 2013 (Ministry of Human Resources Malaysia, 2013). Such an initiative would allow workers to work for longer, which could improve their

[1] Currency rate of 1 MYR = 0.19 GBP as per 2.12.2018 throughout the thesis.

savings after retirement. On the other hand, there has been a gradual increase in the retirement age in the public sector from 55 to 56 in 2001, to 58 in 2008 and further to 60 in 2013 (Ministry of Human Resources Malaysia, 2013). As a result, the calculation method of the pension was amended with civil servants expecting to receive a higher pension upon retirement (Hamid, 2015).

Pillar 4 consists of personal savings, which provide the opportunity for older people to have retirement plans (Mohd *et al.*, 2014). The government also developed an alternative saving channel for older people called the Private Retirement Scheme (PRS), which is a voluntary long-term investment scheme aimed at helping individuals to accumulate savings for their retirement (Private Pension Administrator Malaysia, 2017). In addition, the i-Saraan (previously known as *1Malaysia* Retirement Scheme or SP1M), which was developed by the EPF on the 3rd January 2010, allows subscribers among the self-employed and individuals without a fixed monthly income, such as housewives, informal sector workers and younger people, to contribute voluntarily towards their retirement fund based on the amount that they can afford (Employees Provident Fund, 2012).

In a nutshell, the main formal social protection in Malaysia consists of the Employees Provident Fund (EPF) established in 1951, the Social Security Organization (SOCSO) set up in 1969, the Government Pension Scheme for Civil Servants, and the Old Age Benefit Scheme for the Armed Forces, and private sector provident and pension funds (Ong *et al.*, 2009). In the absence of a formal old age protection system, those in the informal sector will have to rely on other means of protection to finance their old age consumption (Mohd, 2013). This is indeed crucial as 60 percent of older Malaysians 2004 were self-employed according to a study by Tey and Hamid (2014). Nevertheless, securing an income in old age is crucial not only for those in the informal sector but also for workers in the formal sector as Malaysians today are facing escalating costs of living and a longer average life span (Mohd, 2013). These trends result in recipients of the EPF possibly facing a shortage of savings to last them through retirement (Ministry of Human Resources Malaysia, 2013).

2.6 Chapter summary

The discussion above has shown that Malaysia is experiencing a rapid growth in the percentage of older people due to the direct consequences of changing demographic factors in the last few decades (Hamid, 2015). The characteristics of older people in Malaysia are interrelated in terms of the sex, ethnicity, living arrangements and geographical dispersion which contribute to different ageing experiences (Hamid, 2015). The growth of the older population is indicated by the declining fertility rate and mortality rate which have resulted in the increase in life expectancy,

leading to the increasing percentage of older people in Malaysia (Mahari *et al.*, 2011). Gender differentials in life expectancy indicate a feminisation of old age in the near future (Md Yusuf, 2012). Besides that, other basic indicators of population ageing, including the median age, dependency ratio and ageing index which are commonly used to understand this worldwide phenomenon, suggest that Malaysia should prepare for an ageing population (Hamid, 2015).

The unique combination of diverse past experiences, fuelled by a number of factors (including socio-economic differences, the historical context and economic segregation), makes the situation of each cohort of older people different in terms of their needs and demands (Hamid, 2015). Although the rural–urban divide in population ageing still persists, Malaysia is exhibiting an increasing level of urbanisation (Siwar *et al.*, 2016). Nevertheless, the varying degree of rural–urban composition implies that integrated policies to cater for the well-being of both rural and urban older dwellers are needed (United Nations, 2015d). In terms of education, the majority of the current cohort of older people have limited education attainment, which is associated with a higher engagement in informal employment, thus resulting in limited earning power (Masud and Haron, 2014). An increasing LFPR among older people, especially among females (Mahari *et al.*, 2011), has also brought changes to the labour participation. The increasing female LFPR suggests an improvement of economic incentives in employment and policies favouring the employment of women (Abu Bakar and Abdullah, 2007). Nevertheless, it is notable that poverty is higher among older people and they are more likely to remain in a poverty trap than younger people in Malaysia (Mohd *et al.*, 2018). Findings suggest that the economic participation among older people can be one of the avenues of safeguarding from poverty and guaranteeing income security in old age (Vaghefi *et al.*, 2016).

The extent of the intergenerational support varies in terms of gender, ethnicity and the co-residence status. It is evident that the majority of older people co-reside with their adult children (Masud *et al.*, 2008; Kimm *et al.*, 2014). However, the type and direction of the flow of support cannot be assumed by examining older people's co-residence with their adult children alone, as the nature and intensity of support depends on individuals' need (United Nations, 2011). Population ageing has reduced the proportion of larger families into smaller family sizes which may affect co-residence and the living arrangements of older people in the future (Tey and Hamid, 2014).

The discussion in this chapter covered a number of aspects of ageing which include population ageing-related policies that were placed in the national agenda (Ong *et al.*, 2009). Additionally, this chapter also discussed the types of social security in old age adopted in Malaysia. Thus, there

is an urgent need to improve the retirement income system in order to ensure the financial well-being of older people.

This chapter has focused on several issues: (1) changes in the demographic pattern and socio-economic trends; (2) the work participation of older people; (3) co-residence status and intergenerational support; and (4) ageing-related policies in Malaysia. The next chapter will discuss the literature review, where it will focus specifically on older people in the labour market, sources of income in later life, co-residence status and intergenerational support.

Chapter 3: Literature review of labour participation, co-residence and Intergenerational support

3.1 Introduction

Unlike developed countries where financial protection schemes such as public pension and social security programmes are widely available (DaVanzo and Chan, 1994), older people in many developing countries tend to rely on two main modes of support in order to sustain their lives during old age: their own labour market income (Ng and Hamid, 2013) and family support (Cai *et al.*, 2011; Haron *et al.*, 2013; Ng and Hamid, 2013). This is in line with Cameron and Cobb-Clark (2008) who pointed out that individuals' own labour market income is important in combination with traditional family support including intergenerational transfers from children and co-residence with children, in addition to stocks and assets. Although earlier findings suggest that the labour supply decreases with increasing age and poor health (Do *et al.*, 2014), studies also found that older persons with a low economic status are more likely to engage in the labour market (Pal, 2007). While it has been found in previous studies that continuous employment in old age could help strengthen the income security of older people in later life (Sulaiman and Masud, 2012), it remains unclear why certain older people remain in the labour market and some do not (Adhikari *et al.*, 2011). Understanding the determinants of labour participation decisions among older people could contribute to understanding the factors affecting their financial well-being more broadly, and could further stimulate labour force engagement among older people in the population, where this is appropriate (Giang and Le, 2015).

The nature of family support is a critical influence on older people's financial security and hence their labour participation decision. In the manner of other Asian cultures, Malaysia has long relied on the traditional concept of filial piety (Gwee and Fernandez, 2010). However, the significant demographic changes in developing countries brought by the current pace of urbanisation, migration and economic transformation have put a strain on the traditional familial system of old age support (Holzmann *et al.*, 2000; Chan, 2005; Cameron and Cobb-Clark, 2008; Vodopivec and Arunatilake, 2011). For example, the increasing mobility of adult children which has resulted from better transport infrastructure has led to a lower rate of co-residence with their parents (Tey *et al.*, 2015). Although older persons might still receive financial assistance and various types of support from their co-residing or non-co-residing adult children, the magnitude of such support may not be sufficient to ensure a decent standard of living (Tey and Hamid, 2014). This explains why Cameron and Cobb-Clark (2008) discovered that in Indonesia, family support in terms of co-

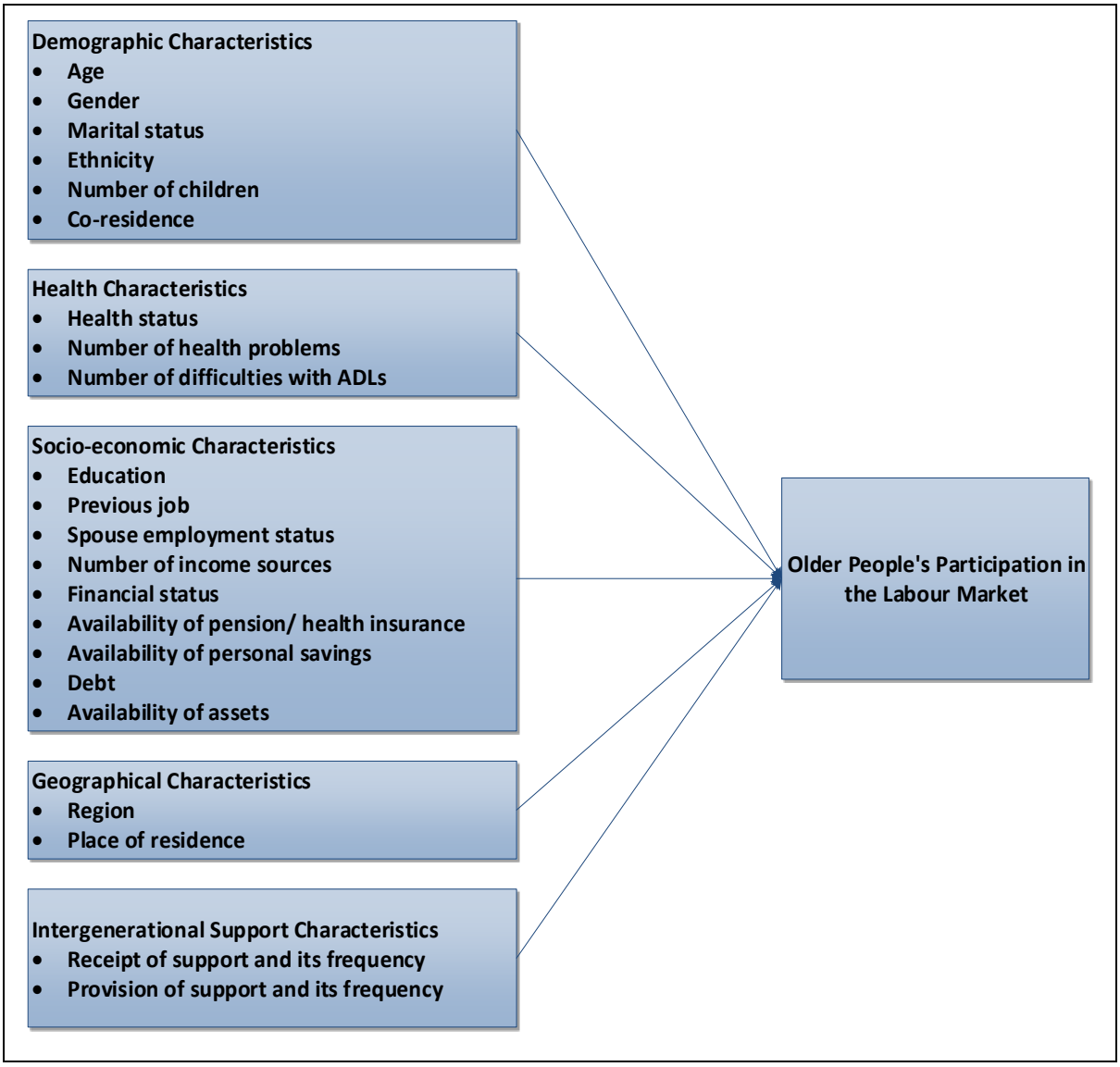
residence with children and intergenerational transfers from adult children does not reduce older parents' need to work. Apart from that, the reliance of elderly persons on their children may cause strain as the old-age dependency ratio increases, whereby fewer working-age persons correspond to an increasing number of older people (Chan, 2005; Cameron and Cobb-Clark, 2008). Such considerations in the context of Malaysia also need to take into account the fact that not all working-age persons are in work, and similarly, not all older people are out of work.

Given this background, this chapter aims to critically review previous literature on the labour market participation by older people, co-residence with adult children and intergenerational transfers, both in Malaysia specifically and in other countries with a similar culture. This chapter focuses on the key issues concerning older persons' participation in the labour market, and the gaps in the literature are identified. Throughout the literature review, particular theories which are relevant and their link to the topic of interest are discussed. Section 3.2 illustrates the conceptual framework that guides this study. Section 3.3 discusses the factors affecting older people's labour participation, while Section 3.4 explores patterns of intergenerational support between older people and their children. This section examines issues relating to intergenerational transfers from both the recipients and the providers of support, paying considerable attention to the types of support and the frequency of support exchange. Section 3.5 discusses patterns of older people's co-residence with their children. It explores literature that examines the types of support which older people receive and provide based on their co-residence status. Subsequently, Section 3.6 concludes the entire chapter by discussing the relationship between co-residence, intergenerational transfer and labour participation among older people. Taken together, these insights from the literature review are used to guide the construction of the conceptual framework in Section 3.2 underpinning this research. Understanding the linkages and interactions between different forms of support might assist in developing potential policy strategies to ensure that older people in Malaysia experience a decent standard of living. Additionally, establishing what is known and what remains to be addressed based on the literature review could also assist in forming a foundation for future studies on labour participation.

3.2 Conceptual framework

The development of the conceptual framework of the factors associated with older people's labour market participation has been informed from the review of the existing literature, both empirical and theoretical. Figure 3-1 illustrates the conceptual framework upon which this thesis is based.

Figure 3-1: Conceptual framework on the influences on older people's work participation



Source: Author's own design based on literature review

The development of the conceptual framework has been informed both by empirical and theoretical literature. These bodies of literature have pointed to groups of factors which have been shown to be associated with older persons' labour force participation (Adhikari *et al*., 2011; Giang and Le, 2015). There are five main types of characteristics that have been identified as determinants associated with older people's participation in the labour market namely,

demographic, health, socio-economic, geographical and intergenerational support characteristics (Ling and Chi, 2008; Reddy, 2016).

Theoretical literature has also informed the development of the framework. For example, the modernisation theory developed by Cowgill and Holmes in 1972 suggests that the modernisation results in the decline of older people's status in society, as well as changes to individuals' socio-economic status and to patterns of family support (Aboderin, 2004; Vauclair *et al.*, 2014). In this framework, understanding how the provision and receipt of support by older people interact with their labour market participation reflects the complexity of these relationships. Improvement in education is an expected outcome of modernisation and has led to higher entrance of women in the labour market (Abdullah *et al.*, 2008). Higher levels of women working full-time in the labour market may have implications for their availability to provide informal care provision to frail older people in their family (Chen *et al.*, 2017a). Modernisation along with urbanisation has increased the rate of migration among the younger population from the rural to urban areas in search of job opportunities, increasing the likelihood of older people receiving less care and support from younger family members (Speck, 2017). Consequently, the process of modernisation is likely to disrupt family in terms of the decline in the intergenerational co-residence, where extended families have gradually been replaced by nuclear families (Djundeva *et al.*, 2019). In addition, the status of older people according to modernisation theory will decline as they are likely to experience social loss in the form of losing spouse, relatives and friends (Vauclair *et al.*, 2014; Sun and Ryder, 2016). Due to their retirement, older people may likely face challenges in terms of the adequacy of their income which can directly affect their economic status as well as their role in the society (Vauclair *et al.*, 2014). The importance of these factors and the contribution of the modernisation theory is reflected in the inclusion of concepts in the conceptual framework such as the bi-directional provision of different types of support between older people and their adult children.

In addition to the relevance of the modernisation theory, the conceptual framework has offered another insight in the context of encouraging older people's continued participation in the labour market so that older persons can be economically independent through active ageing (World Health Organization, 2002; Koopman-Boyden *et al.*, 2014; Taskila *et al.*, 2015). Longer life expectancy is now being accompanied by continuing opportunities for improving health, greater participation and security all of which reflect the term "active ageing" (World Health Organization, 2002). Besides older people's continued participation in social, cultural, spiritual and civic affairs, older people can be mentally and physically active in their participation in the labour market. With the advancement of healthcare for example, older people with health problems or disabilities are able to work as long as they can be resilient and able to manage their health

conditions (Jason *et al.*, 2017). In addition, older people can carry on working if there is flexible working policies in place (Taskila *et al.*, 2015). Studies have found that participation in the labour market is a key driver in terms of the social gradients in physical and mental health, which can improve one's quality of life and well-being (Waddell and Burton, 2006; Kajitani, 2011). Apart from that, the concept of active ageing that underpins this framework also refers to the opportunity for older people to remain active contributors to their families and to society more broadly. Studies have shown that older people are not only 'net receivers' of support but some are the 'net- donors' to their adult children in the context of intergenerational support exchange (Kalmijn, 2018). The conceptual framework in this thesis takes into account of the active ageing premise by incorporating indicators relating to older persons' economic activity and support provision towards younger generations.

In addition, the rational choice and social exchange theories are relevant to understanding older persons' economic activity patterns and broader role in society (Lovett, 2006). In this context, rational choice underpins the conceptual framework in understanding how individuals as decision making units, make decisions about their labour participation and the nature and extent of support they provide. Under the rational choice approach, individuals make choices that best help them achieve their objectives under prevailing circumstances (Satz and Ferejohn, 1994). For example, an individual approaching retirement age might have two alternatives choices: to continue to work and receive a regular wage, or to retire with/ without an income from a pension. Studies have found that some older people choose to participate in the labour market due to job satisfaction related to intrinsic factors or internal rewards of work (Vallerand *et al.*, 1995; Valentine *et al.*, 1998). For others, income constraints may limit their ability to enjoy leisure and they may thus decide to continue to work due to financial reasons (Lord, 2002; Higgs *et al.*, 2003).

For some individuals, a poor health condition may limit their physical capacity in the workplace and they may opt to withdraw from the labour market. Previous studies, for example, Schofield *et al.* (2013) have shown that poor health status is linked to lower rates of labour market participation; but poor health also has a complex relationship with support exchange, as older people in poor health may require more support from their children, but they may also be more 'available' to provide support with grandchild care (Zhou *et al.*, 2017; Mao *et al.*, 2019). Older people may also make a rational choice as to whether to work on a part-time or full-time basis as time in the labour market may limit their availability within the household. Studies have found that factors such as care-giving have an effect on labour market supply especially for females due to the trade-off between their roles in paid work and family care (Vere, 2007; Moussa, 2018). Moussa (2018) systematically reviewed empirical research published between 2006 and 2016 in USA, Canada, Australia, UK and EU on the relationship between informal care-giving to older

people and labour force participation and the key conclusion was that mid-life women care-givers of elderly parents were likely to reduce their working hours relative to their non-care-giving counterparts. Thus, individuals make rational labour participation choices based on the alternatives and constraints they have, which involves trade-offs between alternative choices. The conceptual framework of this thesis is directly informed by the rational choice and social exchange theories in terms of exploring the complex relationship between receiving and/or providing support to one's children, and remaining active in the labour market.

The conceptual framework of this thesis was also influenced by empirical literature pointing to specific groups of factors associated with older persons' labour market participation. Firstly, based on the empirical literature, various studies link demographic factors to the decision of labour participation (Phillipson and Smith, 2005; Gwee and Fernandez, 2010; Adhikari *et al.*, 2011; Reddy, 2016). Individuals' age, gender, marital status, and ethnicity are all factors which are directly associated with older people's labour participation. For example in Thailand, people who are older and female were less likely to participate in the labour market compared to younger and male individuals (Adhikari *et al.*, 2011). In addition, the processes of industrialisation and urbanisation have led to changes in demographic patterns, affecting co-residence patterns among older people (Ruggles and Heggeness, 2008). For example in Hong Kong, the change in current employment structures with increasing female labour participation, limited space in most modern housing design, and changing attitudes towards family obligations among both parents and adult children for instance, were responsible for the nuclearisation of modern families overtaking the traditional extended multigenerational families (Ng *et al.*, 2002). This is in line with the modernisation theory which suggests that modernisation increases dependency in old age due to weakening family ties (Goldstein and Beall, 1981; Högman, 1999). Thus, the association between co-residence and labour participation is also examined in this study. All the demographic factors are described further in Section 3.3 with an emphasis on the factor of co-residence found in Section 3.5.

Secondly, health characteristics are also associated with labour participation (Bingley *et al.*, 2015; Staudinger *et al.*, 2016; Rehkopf *et al.*, 2017) as changes in health conditions may influence the preference of individuals for either work or leisure (Lixin and Changxin, 2009). Health status, number of health problems and number of difficulties with Activities of Daily Living (ADLs) were emphasised in various studies to indicate health characteristics. Poor health discourages older people from participating in the labour market, as do long-term illness and chronic disease (Lixin and Changxin, 2009; Giang and Le, 2018). Similarly, difficulties in performing ADLs, which are usually linked with the increase in age, are also barriers to labour participation as such impairments may reduce an individual's ability to fulfil work commitments (Stamm *et al.*, 2016).

Health characteristics and their association with labour participation are further discussed in Section 3.3.

Thirdly, variation in socio-economic characteristics is also associated with the likelihood of older people working in the labour market or not (Phillipson and Smith, 2005; Ling and Chi, 2008). Education attainment is one such variable and literature provides evidence of both a positive and negative relationship between education attainment and labour participation (Alam and Mamun, 2016). Empirical findings also show that previous job and spousal employment status are important variables associated with labour participation (Vodopivec and Arunatilake, 2011; Chiu and Chen, 2013). Income resources such as pensions, transfers from children or the receipt of welfare assistance may determine older people's likelihood of participating in the labour market as they indicate a person's level of financial security in old age (Gwee and Fernandez, 2010). Financial insecurity increases the likelihood of remaining in the labour market whereas financial security discourages individuals from participating in the labour market (Phillipson and Smith, 2005). Similarly, the availability of savings also shows individuals' level of financial security in old age, and thus may become a factor associated with older people's current work status (Chan *et al.*, 2010c). A further discussion of these socio-economic factors and how these characteristics influence older people's participation is set out in section 3.3, thus fulfilling the first research objective of this thesis that is to identify socio-economics characteristics associated with labour participation among older people.

Fourthly, empirical studies have shown that geographical characteristics are associated with labour participation (Pang *et al.*, 2004; Ling and Chi, 2008; Chou, 2010). One's place of residence is an important variable, as, for example, a factor such as rural–urban disparity can affect older people's likelihood of participating in the labour market (Vodopivec and Arunatilake, 2011). More comprehensive and coherent findings from empirical studies on the association between geographical characteristics and labour participation are presented in section 3.3.

Finally, due to the strong cultural emphasis on filial piety and familial support practised in Asia as documented in previous studies on Asian countries (Beh and Folk, 2013; Zhang *et al.*, 2014), this study focuses on the intergenerational support characteristics and their association with labour participation. The role of intergenerational support received and provided, and its frequency, is also linked to whether or not older people are currently in the labour market. The types of assistance and the frequency of support were found to have an association with individuals' work participation (Ibrahim *et al.*, 2012b).

The framework offered insight into the complex relationship between working in later life and supporting one's family. This framework has implications in terms of promoting active ageing

through older people's choices given the opportunities for labour market participation while acknowledging the importance of family support in preserving the role and status of older people in modern societies, and in the context of rapid socio-economic changes (World Health Organization, 2002; Yusoff and Buja, 2013; Hamid, 2015). Literature supporting the association between intergenerational support and labour participation is explored in greater detail in section 3.3 below.

3.3 Factors affecting older people's participation in the labour market

A longer life span experienced among by older people today means that more individuals survive to older ages (United Nations, 2013; Evandrou et al., 2016). Hence, older people can be expected to experience a longer consumption period which may place them under financial pressure to support their old age and lead them to outlive their available income (Chan et al., 2010a). As is evident in most developing countries, older people's labour income appears to be one of the key mechanisms of old-age support (Vodopivec and Arunatilake, 2011); therefore it is equally important to identify the factors which may trigger or sustain labour participation among older people (Giang and Le, 2015). This section examines the various factors associated with labour participation among older people.

Most studies which examine the determinants of older people's labour participation have attempted to investigate the association between demographic factors and work participation (Clark and Anker, 1990; Gwee and Fernandez, 2010; Adhikari *et al.*, 2011; Giang and Le, 2015; Reddy, 2016), health and its relationship to labour participation (Mete and Schultz, 2002a; van Gameren, 2008; Do *et al.*, 2014) and socio-economic factors which influence labour participation decisions (Hill, 2002; Raymo *et al.*, 2004; Giang and Le, 2015). Each of these groups of factors will be now be discussed in turn.

Age is one of the demographic factors that may influence the labour participation decision of older people (Hill, 2002; Gwee and Fernandez, 2010). Studies have found that in general, the likelihood of older persons participating in the labour market decreases for both men and women as age increases, and this finding is consistent across studies conducted in Thailand (Adhikari *et al.*, 2011), Malaysia (Gwee and Fernandez, 2010; Ng and Sia, 2011; Tey and Hamid, 2014) and Vietnam (Giang and Le, 2015). For example, a study drawn from the 2007 Survey of Older Persons in Thailand by Adhikari *et al.* (2011) found that older people aged 70-79 and 80 years or above were 63 percent and 89 percent, respectively, less likely to be in paid work compared to those aged 60-69 year. This is in accordance to the disengagement theory, despite criticism, that it is a natural process for older people to withdraw from society gradually as they age (Bengtson *et al.*,

1997). However, a great variation of labour participation among elderly people is observed when disaggregating the labour force into specific age groups. As Giang and Le (2015) demonstrated, a greater effect of age on labour force participation can be observed for Vietnamese males aged 70–79 compared to females in the same age group. For example, the probability of working for females aged 70-79 was 21.7 percent lower compared to females aged 60-69 years old, while the probability of working for females aged 80 and over was 40.6 percent lower compared to those aged 60-69. The probability of working among men aged 70-79 years was 26.7 percent lower compared to men aged 60-69, while those aged 80 and over had a probability of working which was 45.7 percent lower than among men aged 60-69. On the other hand, a study by Reddy (2016) revealed that although the increase in age resulted in a lower labour participation for older people in India, the level of participation in 2012 was quite high (approximately 49 percent) among the 60–64 age group compared to other age groups. The negative relationship between age and labour participation, as documented in many studies, was due to several factors such as deteriorating health associated with the increase in age (Do *et al.*, 2014), reaching retirement age (Arifin and Ananta, 2009) and age discrimination in the labour market (Hill, 2002; Taylor and Walker, 2003; Gringart *et al.*, 2005; Barusch *et al.*, 2009; Gwee and Fernandez, 2010). As shown in many settings, negative stereotypes about older people discourage employers from hiring older workers, as found in a study in Australia by Gringart *et al.* (2005).

Generally the average working life of men and women differs substantially, thus labour participation also varies greatly between genders (Adhikari *et al.*, 2011). A considerable amount of literature has been published linking gender and labour participation, and studies have found that labour participation among older people in Malaysia (Ng *et al.*, 2005; Gwee and Fernandez, 2010), Thailand (Adhikari *et al.*, 2011) and India (Mitra and Okada, 2017) is higher among men compared to women. For example, drawing on data from the 2007 Survey of Older Persons in Thailand, Adhikari *et al.* (2011) found that 74 percent of men aged 60 and over were working while only 51 percent of women aged 60 and over were participating in the labour market. It has also been shown that the variation in the participation between men and women is due to the gender division of labour in families (Adhikari *et al.*, 2011) where women are expected to devote more time undertaking household roles as found by Reddy (2016) who conducted a study in India. To some extent, this also includes bearing the responsibilities of taking care of grandchildren which limits older women's opportunities to participate in the labour market (Clark and Anker, 1990; Reddy, 2016). The multiple roles occupied by women result in a trade-off between work and family responsibilities (Evandrou *et al.*, 2002; Carmichael *et al.*, 2009; He and McHenry, 2016). Studies have also found that women caregivers of their older parents were likely to reduce their working hours in the labour market compared to non-caregiving women (Moussa, 2018).

Apparently, women face interruptions during their working life due to caring responsibilities, and may therefore be less prepared financially for later life (Berger and Denton, 2004) due to having spent fewer years in the labour market (Smeeding, 1999; Md Yusuf, 2012). This in turn impacts on women's pension income (Vlachantoni, 2010), personal savings (Berger and Denton, 2004; Chan, 2005) and lifetime earnings (Vlachantoni, 2010). These factors contribute to the reason why older women in Vietnam have a higher tendency to depend on their children's or spouse's income rather than on their own work income in their later lives (Giang and Le, 2015). This finding was supported by Tey and Hamid (2014) who examined the gender differentials in terms of work and income among older Malaysians using a nationally representative survey conducted in 2004 with a sample size of 2,321 respondents aged 55 to 75 years and a response rate of 78 percent. They found that older women were more likely than older men to receive financial support from their adult children. For example, 68 percent of older women received remittances from their sons, compared to 54 percent of older men. On the other hand, older Malaysian men were found to be more than twice as likely as older Malaysian women to receive income from their current job and/or pension from a previous job (Tey and Hamid, 2014). This indicates that gender differentials pose different implications on issues pertaining to labour participation decisions among older men and women.

Work participation also varies with marital status. Prior studies have documented the impact of marital status on older people's labour participation (Clark *et al.*, 1999; Haider and Loughran, 2001; Hill, 2002; Adhikari *et al.*, 2011; Giang and Le, 2015). For example, being a widow is associated with low economic well-being, thus labour participation is expected to be higher among widowed women (Clark *et al.*, 1999). In contrast, Adhikari *et al.* (2011) found that widowed, separated and divorced older people in Thailand exhibited a lower participation rate (20.5 percent) compared to married individuals (43.4 percent). Adhikari *et al.* (2011) pointed out that this may be the case as children in Thailand were traditionally responsible for taking care of their parents, thus exempting widowed, separated and divorced older people from participating in the labour market. Contrasting the results between the two genders, Giang and Le (2015) who conducted their study in Vietnam found that married males have a 28.2 percent higher probability to participate in the labour market compared to divorced, separated and single never-married males. Married males may have more dependants and thus higher financial obligations (Gwee and Fernandez, 2010) depending on the needs of other household members, especially if the number of household members increases (Hill, 2002). Research also found that marital dissolution reduces women's retirement income which may necessitate them to continue working in later life (Gwee and Fernandez, 2010).

A number of authors have considered the intergenerational economic and emotional support exchange effects of living arrangements on the labour participation of older people such as in China and Indonesia (Pang *et al.*, 2004; Cameron and Cobb-Clark, 2008). In line with modernisation theory, the process of urbanisation has led to the migration of younger people to cities in search of better opportunities, leaving older people behind in rural areas (Hermalin, 2000). This has impacted not only the intergenerational relationships among family members due to spatial distance, but also living arrangements and care for older people, as noted in a recent study by Chow (2007) in Hong Kong. Studies have shown that shared living arrangements with adult children reduce the likelihood of work participation among older people (Pang *et al.*, 2004; Connelly *et al.*, 2014). Correspondingly, a cross-sectional study in Thailand has emphasised that older people who were co-residing with their adult children were 31 percent less likely to be part of the labour market (Adhikari *et al.*, 2011). Cameron and Cobb-Clark (2008) conducted a study in Indonesia to investigate whether co-residence with and financial transfers from adult children reduce the need for older people to participate in the labour market. The results from the study showed that non-co-residing older women reduce their hours of work as more financial transfers were received by older women from their adult children (Cameron and Cobb-Clark, 2008). Likewise, Pang *et al.* (2004) examined the employment behaviour of older people in rural China and found that older people were more inclined to stop working when they lived with adult children (Pang *et al.*, 2004). This suggests that shared living arrangements with adult children can affect the intergenerational economic and emotional support exchanged between older people and their adult children (Knodel *et al.*, 1996).

The number of children has also been found to have a profound effect on the labour participation of older persons (Giang and Le, 2015). The larger the number of household members, the lower the probability that older people will participate in the labour market as found in studies in India (Pandey, 2009) and Vietnam (Giang and Le, 2015). For example, Giang and Le (2015) examined the determinants of older people's labour participation in Vietnam and observed that in larger-sized households, older people tend to rely on support from their adult children. A larger amount of support received from a greater number of children results in a higher level of economic wealth (Knodel *et al.*, 2000), thus discouraging older persons from participating in the labour market (Giang and Le, 2015). This finding is supported by Pandey (2009) who found a similarly negative association between the labour participation among older people and the household size in India. The number of children was found to be associated with the likelihood of older people to engage in the labour market in Thailand where older people who had 5 or more children were 43 percent less likely to participate in the labour market (Adhikari *et al.*, 2011). One study by Pang *et al.* (2004), which examined employment patterns in rural China, revealed that older couples who are

childless or without sons are more likely to be in the formal labour market than older people who have sons. However, larger household sizes do not necessarily mean that a greater amount of direct support is provided to older people, as such size may sometimes represent a greater burden rather than a benefit (Lloyd-Sherlock, 2001). For example, findings showed that the presence of small children in the household may prevent older people from engaging in the labour market due to the demand for care of their grandchildren (Clark and Anker, 1990).

An individual's health status is an equally important factor which may influence the work participation decision among older people (Do *et al.*, 2014). Earlier studies have suggested considerable evidence supporting the association between the health status of older people and their labour market decisions for example in Singapore (Do *et al.*, 2014), Taiwan (Mete and Schultz, 2002b) and Mexico (van Gameren, 2008), with poor health status being associated with a lower risk of working. For instance, according to the work by Do *et al.* (2014) in Singapore, poor health deters older workers' labour participation and lowers the likelihood of older workers of re-entering labour market. While the relationship between health and labour participation has been well established, the causal relationship between the two is complicated in the sense that it is bidirectional (Carter *et al.*, 2013). Research in Japan by Kajitani (2011) has suggested that employment of less than 35 hours per week can improve one's health status at higher ages. On the other hand, research has found that healthy individuals are more likely to work (Lixin and Changxin, 2009; Goodman, 2015; Giang and Nguyen, 2016). According to a study by Lixin and Changxin (2009), which analysed data from the Household, Income and Labour Dynamics Survey (HILDA), an improvement of health for older men from poor to fair health would increase the probability of participation in the labour market by about 10 percent, while an improvement from poor to very good health would increase the probability of older men participating in the labour market by 24 percentage points. A large body of literature supports the argument that employed individuals are healthier than those who are not employed (Ross and Mirowsky, 1995; McKee-Ryan *et al.*, 2005). Many studies have related continued employment in economic activities among older people to active ageing, which is beneficial for individuals' health and well-being (Mafauzy, 2000; Tey and Hamid, 2014). Mafauzy (2000) found that continued employment among older people could lead to higher morale, happiness, better adjustment, longevity, larger social networks and better perceived health. Subsequently, good health among older people could contribute towards a reduced utilisation of healthcare services (Tey and Hamid, 2014).

Nevertheless, empirical findings using cross-sectional studies suggest that older people with poor health have a lower likelihood of participating in the labour market (Pang *et al.*, 2004; van Gameren, 2008; Pandey, 2009; Adhikari *et al.*, 2011; Giang and Le, 2015). For example, van Gameren (2008) conducted a study among older people in Mexico using the Mexican Health and

Aging Study and reported that health problems can cause various physical and cognitive limitations with different implications for a person's capacity to enter the labour market. Do *et al.* (2014) in their study on older male retirees in Singapore, using data from the Social Isolation, Health and Lifestyle Survey 2009, found that poor health hinders intentions of engaging in the labour market, especially for occupations requiring physical labour and lowers the likelihood of re-entering the labour force after retirement. Additionally, a study drawn from the 2007 Survey of Older Persons in Thailand by Adhikari *et al.* (2011) noted that the number of chronic diseases is a strong predictor of the labour participation decision among elderly people in Thailand, and that multiple functional disabilities can deter older people from participating in the labour market. This is further supported by Giang and Le (2018), using the Vietnam Ageing Survey (VNAS), which found that older people reporting at least one chronic health condition were less likely to participate in the labour market than those without a chronic health condition. There have been a number of longitudinal studies which provided evidence of a strong link between health and labour market status. For example, Devlin and French (2017) analysed Wave 1 of the Northern Ireland Cohort for the Longitudinal Study of Ageing (NICOLA) which is based upon a nationally representative sample of 8,504 individuals aged over 50 years of age at the start of recruitment in 2013 living in Northern Ireland. Given the 2011 abolishment of enforced retirement at age 65 and the increase in the state pension age to 67 between 2016 and 2018 in the UK, the study found that better health among people aged 50–64 and 65–74 was associated with a higher likelihood of being active in the labour market. For example, the employment rate among older people aged 50-64 who reported their health status as excellent, very good or good was 71 percent compared to 45 percent among those who reported their health status as fair and 16 percent of those who reported poor health. Similar patterns in terms of the link between health and employment were observed for those beyond the state pension age (65–74).

However, due to the numerous health measures being used across studies, which include both objective and subjective measures of health (Böckerman and Ilmakunnas, 2009), the magnitude of the effect cannot be established (Carter *et al.*, 2013). Subjective measures of health, such as those which are self-reported, provide potentially biased information regarding people's health status and thus, are less reliable than that of objective measures of health (Böckerman and Ilmakunnas, 2009). Investigating the relationship between unemployment and self-assessed health using longitudinal data from the European Community Household Panel (ECHP) over the period of 1996–2001 for Finland, Böckerman and Ilmakunnas (2009) found that the health status of those who end up being unemployed is worse than among those who are continuously employed. The negative association between health and employment found in cross-sectional data is not found in many longitudinal studies (Böckerman and Ilmakunnas, 2009).

Apart from demographic and health factors, several socio-economic factors also affect older people's labour participation (Raymo *et al.*, 2004). A number of researchers have reported that one's level of education has a significant impact on the labour participation of elderly people (Hill, 2002; Pang *et al.*, 2004; Pisarev, 2006). However, contradictory findings exist on whether this factor has positive or negative effects on work participation decisions (Pang *et al.*, 2004). Based on a survey involving 710 older people in Russia, (Pisarev, 2006) found a positive relationship between education and labour participation where the level of employment in categories of qualified labour in the formal sector increased in line with the level of education. The survey found that more than half of the workers from the highest professional strata continue to work after reaching retirement age (Pisarev, 2006), although such a result may be partly due to how the welfare state operates in that country context. On the other hand, Adhikari *et al.* (2011) reported that lower educational attainment is associated with older Thais participating in the labour market where older Thais with primary education level or no schooling were about twice as likely than those with secondary or higher education to participate in the labour market. This is due to the fact that the nature of work in the informal sector, especially agricultural work, allows for increased work opportunities for older and less educated people to continue working (Clark *et al.*, 1999; Adhikari *et al.*, 2011). In other words, labour participation decisions related to educational attainment among elderly people may differ across workers in the formal and informal sectors (Reddy, 2016). A study by Hill (2002) using the data from the Mature Women's Cohort of the National Longitudinal Survey of Labour Market Experience in the US revealed that low education attainment, which is often associated with a low income level, may necessitate older people to work, while a higher education level may indicate participation in more desirable jobs and better working conditions. Nevertheless, older people with higher earnings due to a better education may have a stronger incentive to leave formal work earlier given their ability to depend on their pension plans or other accumulated savings in later life as shown by Pang *et al.* (2004) in rural China. It is also found that individuals with a higher level of education in Russia may continue working in the formal workforce for longer durations due to the higher potential forgone income (Pisarev, 2006).

Another socio-economic characteristic which can influence the labour participation decision among older people is one's previous employment status as found among studies conducted in Malaysia and Thailand (Gwee and Fernandez, 2010; Adhikari *et al.*, 2011). For example, Adhikari *et al.* (2011) found that in Thailand, those who had never worked for the government were more likely to participate in the labour market in later life. In addition, personal reasons such as job satisfaction, self-esteem, social interaction and the desire to stay mentally active may be possible reasons why older workers remain in the labour market (Gwee and Fernandez, 2010). For

example, highly educated older workers may possess certain experiences, skills and knowledge which facilitate them to remain in or re-enter the labour market beyond retirement (Bjursell *et al.*, 2017). According to empirical material from Sweden, Bjursell *et al.* (2017) found positive associations between high education level and participation in work.

A number of researchers have reported that financial security in later life may influence work participation decisions among older people. The limitations of receiving financial support after retirement would likely encourage older people to participate in the labour market (van Gameren, 2008). The research by van Gameren (2008) claimed that the number of employees who made pension contributions in Mexico was quite low compared to other countries, which might explain why older people in that country remain active in the labour market for longer. Malaysia is another country where social security programmes are not universal in nature, and where the Employees' Provident Funds (EPF) (see section 2.5) and government pensions are available only to employees in the formal and government sectors respectively (Ong, 2002). Against this background, it is not surprising that most older Malaysians with no social protection tend to rely on their own labour income in old age (Sulaiman and Masud, 2012; Haron *et al.*, 2013). Sulaiman and Masud (2012) found that current work is the strongest predictor of income security for Malaysians aged 55-75 in Peninsular Malaysia. On the other hand, in more developed countries, the access to occupational pensions is also associated with early retirement among workers (Phillipson and Smith, 2005). In the UK, financial disadvantage may play an important role in older people's decisions to remain in the labour market (Phillipson and Smith, 2005). Increased work participation was exhibited among individuals with financial difficulties, as Adhikari *et al.* (2011) found that older people in debt were twice as likely to be in the labour force as those who were not in debt. In other words, financial insecurity including having no or insufficient pension provision and being in debt may increase the likelihood of older people remaining in the labour market, while financial security can encourage workers to exit the labour market (Phillipson and Smith, 2005). Thus, the need for financial security in older age may explain why people in developing countries continue to work in older age (United Nations, 2013), reflecting the lack of resources needed to finance their consumption in later life (van Gameren, 2008).

Similarly, being financially secure may also relate to the availability of other sources of income. The availability of other sources of income can influence the labour participation among older people (Ng and Sia, 2011). This is evident from a study of Malaysian individuals in urban areas aged 55 and above, which showed that a lack of availability of other sources of income in old age increases the probability of older people participating in paid jobs (Ng and Sia, 2011). Besides, older people with a higher income in New Zealand tend to have better options on whether to continue working or exit in the labour market (Davey, 2008). According to Davey (2008), the

findings from the Health, Work and Retirement (HWR) and Equal Employment Opportunity (EEO) Trust's Work and Age Survey showed that among people who were still working, the response ''Don't need to work-have sufficient money'' ranked fourth among the 10 influences on the respondents' retirement decisions. Along the same lines, Do *et al.* (2014) observed that the perceived income adequacy in old age among older Singaporean persons influenced their retirement intentions and decisions to re-enter the labour market. Do *et al.* (2014) further added that the greater the difficulty retirees face in meeting expenses with their income, the higher their likelihood of re-entering labour market. This is consistent with the wealth effect in economic theory which suggests that a portion of higher wealth is used to reduce lifetime work and that poorer persons have a greater need to continue working (Clark and Anker, 1990).

Another financial aspect with regards to older people's financial security in old age is the individual's personal savings. Apart from the advantages of saving, which ensures that older people are protected when meeting financial emergencies and offsetting uncertainty related to future health and longevity as found in Netherlands (Alessie *et al.*, 1999), savings may also reduce the risk of inadequate income resources throughout retirement in Malaysia (Haron *et al.*, 2013). Personal savings are accumulated throughout the life span (Ng and Hamid, 2013) and are one of the key income sources for older people (Suwanrada, 2009). Personal savings include long-term savings from social security schemes as well as retirement savings with insurance companies and private financial institutions (Suwanrada, 2009). It was found that the availability of personal savings also strongly influences labour participation among older people (Ng and Hamid, 2013). A study in Japan found that a typical Japanese male worker may save more before retirement if they expect to stay in the labour market for a shorter time (Yamada *et al.*, 1992). According to Yamada *et al.* (1992) who used Japanese annual times series time series data from 1950-1982, a 1 percent increase in the personal savings will lead to a reduction in the range of 0.050 percent to 0.057 percent in individuals' labour force market participation in Japan.

There is an extensive body of literature relating to poverty among older people due to an inadequate income during old age (Lloyds-Sherlock, 2000; Engelhardt and Gruber, 2004; Vaghefi *et al.*, 2016). The decline in the status of older people becomes apparent with the loss of income and prestige arising from labour market participation. This is in line with the modernisation theory which grows from discussion concerning the socio-economic status of older people in connection with the stages of economic development experienced by the society (Aboderin, 2004). Evidence suggests that the prevalence of poverty is somewhat higher for older persons than for persons of younger ages (United Nations, 2015a). For example, data from the Malaysian Household Income Surveys showed that the incidence of poverty among older people (1.96 percent) is higher than the non-older people (0.79 percent) in 2012 (Mohd *et al.*, 2018). Poor health, which is associated

with old age, further deteriorates the well-being of older persons, partly due to the inaccessibility of medical care for ill persons (Azman *et al.*, 2010). A great deal of previous research into poverty among older people has focused on the role of labour participation (Suwanrada, 2009). Several studies have indicated that older people who do not work are more likely to be in poverty (Mohd *et al.*, 2018). In previous studies on poverty among older persons, it was found that the incidence of poverty remains high in rural and underdeveloped areas (Mohd, 2014). Older rural dwellers in the villages in Chiang Rai, Thailand were found to have a low level of economic participation due to the restricted range of employment opportunities unlike those residing in the city of Bangkok who reported higher activity rates and more diverse occupations (Lloyd-Sherlock, 2006). A growing body of literature has investigated the effects of living arrangements on the incidence of poverty among older person (Lloyd-Sherlock, 2001). Certain studies have shown that the highest incidence of poverty is among older people living alone (Azman *et al.*, 2010; Mohd, 2014). A study in Malaysia suggested that co-residing with at least one adult child reduces the probability of older people's poverty (Mohd, 2014). This is because as noted by Mohd (2014), adult children are responsible to ensure that the needs of the older people in the household are taken care of, thus reducing the probability of older people living in poverty. The adverse effect of retirement on income has been shown in studies beyond Malaysia. For example, older people may also experience an adverse impact on their financial well-being, as their income is disrupted during their transition into retirement, leading to the question of whether such a transition is associated with a higher probability of being in poverty (Bardasi *et al.*, 2002). Working with data from the 1968–2001 Current Population Survey in the United States, Engelhardt and Gruber (2004) suggest that a reduction in Social Security benefits would also increase the incidence of poverty among older people. Thus, in view of the evidence mentioned so far, studies have shown that labour participation and co-residence in old age can be potential measures to alleviate poverty among older people (Rendall and Speare, 1995; Mohd *et al.*, 2018).

Several studies thus far have linked geographical characteristics with labour participation. One's living location such as rural or urban can influence the types of economic activities in which older people participate (Clark and Anker, 1990; Adhikari *et al.*, 2011; Tey and Hamid, 2014). For example, Clark and Anker (1990) found that self-employment, agricultural and family-related activities are more common in rural areas. In the context of Malaysia, several studies conducted in rural areas found that older people remain economically active in traditional agricultural occupations and in the informal sector (Wan Ahmad *et al.*, 2011; Tey and Hamid, 2014). For example, Tey and Hamid (2014) found that labour participation among older people in the less economically developed states in Malaysia was significantly higher than among those residing in the more developed states. Such results may be due to the fact that self-employment and

working in the agricultural sector could provide flexibility for older workers in terms of switching job assignments and reducing their hours of work (Clark and Anker, 1990). On the other hand, working in urban sectors is subject to a mandatory retirement age which limits the participation of older workers, thus lowering the participation rates among older people in urban parts of Malaysia (Tey and Hamid, 2014).

Apart from literature on older people's labour participation, there is also a growing literature on extending working lives from Europe, United States and other Western world (Vickerstaff, 2010; Blackham, 2016; Loretto, 2016; Ní Léime and Street, 2017). The theme that emerged from these literature emanating from Western societies links to the fundamental principle behind the concept of extending working lives, which is based on the notion that individuals have a choice to work longer or not (Ng *et al.*, 2005; Chan *et al.*, 2010c). For instance, Loretto (2016) explores the older employees' perspectives on what they want in their late careers focussing on the diversity of expectations among UK older workers, and outlining the differences of choices portrayed between men and women. The study showed that heterogeneity in expectations and gender differentiation is important in terms of the extent to which men and women engage with flexible working as a way of extending their working lives (Loretto, 2016). However, the policy context in which such literature has developed is considerably different from that of Malaysia, limiting the extent to which lessons are directly transferable (Ng *et al.*, 2005). Furthermore, the notion of working into later life out of choice is highly questionable for societies like Malaysia, where the formal social protection system is less developed (Abd Samad and Mansor, 2013), and where individuals may work into older age out of necessity (Wan Ahmad *et al.*, 2011).

Nevertheless, certain key insights from the Western literature may be helpful in the context of this thesis (Vlasblom and Schippers, 2004; Cooke, 2006; Ní Léime, 2017; Orton *et al.*, 2018). For example, Ní Léime (2017) explored work-life decision making based on a case study of 57 Irish civil service women in Ireland adopting a feminist political economy of ageing approach. The study found that previous work-life history shaped by national legislation, employment regulations, and the socio-economic environment are important determinants that shape women's choices in terms of retirement, and at the same time, women's decisions are constraint by resources, job tenure, organisational regulations and work-life trajectories (Ní Léime, 2017). However, this study could not be generalised to all women workers as it is only based on a group of public sector workers. Other related works include the research by Vlasblom and Schippers (2004) which relates to the increasing labour participation among females in Europe. The authors viewed that the changes in the behaviour of the society have become standard in all European countries with respect to education levels and fertility patterns, with higher education and decreasing fertility rates being witnessed at the same time as an increase in female labour participation, and with

more women coping with both labour and family responsibilities becoming the norm (Vlasblom and Schippers, 2004). Vickerstaff (2010) argued that living longer means that there will be an 'avoidable obligation' to work for as long as possible, which is also directly related to the notion of having a choice about working into later life. Other literature from the West has emphasised the responsibility of the employer to ensure an appropriate work environment in supporting older workers which includes flexible working, training and the provision of effective support for people with long-term health conditions (Loretto, 2016; Phillipson *et al.*, 2017) in order to keep older people at work. Although many western countries such as Australia, Germany, the Netherlands, the United Kingdom and the United States have experienced labour market policy changes to encourage labour force participation for older workers, Cooke (2006) argued that policymakers should be aware that older people's life courses are not homogenous, and policies should consider differences with regards to older people's health and family context so as to avoid any disadvantage to older workers in the labour market. Such notions are important to note, however their relevance to the Malaysian cultural or regional context should be assessed with caution.

To recapitulate, the demographic, health, socio-economic, geographical and intergenerational support characteristics discussed above are all important factors in determining the labour participation among older people. It is worth noting that the co-residence status and intergenerational transfers are important determinants of older people's labour participation and the core focus of this study. Thus, these crucial determinants will be discussed in greater detail in the following sections. This will allow better insights in understanding how different types of support and the frequency of support provided and received may differ between older individuals co-residing and non-co-residing with their children, and how such associations affect labour market participation.

3.4 Older people and intergenerational support

As mentioned in the previous section, apart from individuals' reliance on the income received from economic activities as a form of old age support, the economic status of older persons also depends on family support generated through intergenerational transfers (National Research Council, 2001). Several branches of the extensive literature on intergenerational support are relevant to this study, including studies on the family as a source of support for older people around the world in the context of developed countries such as in the United States (Silverstein and Bengtson, 1997) as well as developing countries like Thailand (Knodel and Chayovan, 2009). Although the sources of support received by older people may vary across countries, the family remains the basic source of support (Silverstein and Bengtson, 1997; Bongaarts and Zimmer, 2001) and the central element in the social network composition of older people (Lowenstein,

1999). In most developing countries where there is less formal support from the state, the lack of welfare policies perpetuates the role of the family as the main source of support for older people (Omar, 2005).

The flow of exchange and reciprocity that persist in intergenerational exchange relationships has also received attention in previous literature (Yi and Lin, 2009; Ghazi-Tabatabaei and Karimi, 2011; Theerawanviwat, 2014). Studies also highlight the dynamic upward and downward flow of intergenerational support between parents and adult children over the life course (Bengtson, 2001; Schroeder-Butterfill, 2004; Kreager and Schröder-Butterfill, 2008). For example, studying the intergenerational flows of support using ethnographic and panel survey methods among two communities in Indonesia- Java and West Sumatra, Kreager and Schröder-Butterfill (2008) found diversity in the intergenerational support flows, where balanced, upward and downward support flows co-exist in both communities. Literature on the determinants of intergenerational support includes themes such as the nature of the interaction by Fingerman *et al.* (2011) conducted in the United States, the characteristics of the providers and their ability to provide support in urban China (Zhu, 2016), and the characteristics of recipients, with particular reference to the extent of the recipient's vulnerability and need for support as investigated by Grundy (2006) within the European context.

There are several studies that have linked intergenerational transfers and labour participation among older people. Ng and Sia (2011) analysed data from the Survey on Optimizing the Potential of Older Persons as Critical Resources for Development 2004 and found a negative relationship between financial transfers from children and work participation among elderly people, where higher financial transfers from children reduce the likelihood among Malaysian elderly parents of engaging in the labour market. For example, among older people receiving remittances from their adult children, 64 percent were not currently working, while only 22 percent were currently in the labour market. In addition, older people not currently working received a mean annual amount of RM10,400 (£1,976) from their adult children compared to only RM6, 691 (£1,271) received by older people currently working. This means that older people not currently working received higher levels of remittances from their adult children than older people currently working. The 2004 Survey on Optimising the Potential of Older Persons as Critical Resources for Development was based on a household survey sample of 1,142 individuals aged 45 years and above living in Peninsular Malaysia. Using cross-sectional data from the 1997/98 Vietnam Living Standards Survey, Nguyen *et al.* (2012) concluded that monetary transfers from children do offer some insurance to their older parents; however, the amount received is not large enough to fully substitute the older parents' labour activity. Do *et al.* (2014) in their study using cross-sectional data from the Singapore Social Isolation, Health and Lifestyle Survey in 2009 found that older men

who are working are likely to reduce their dependence on kin support as they perceive that their incomes are adequate. Apart from that, past studies found that increasing family wealth reduces work participation among older people (Raymo and Cornman, 1999). Much of the research up to now has been able to address the relationship between intergenerational support and labour participation; however, it has failed to consider the types of intergenerational support that influence labour participation.

Literature on intergenerational support has suggested several classifications of the types of support received and provided between older people and their adult children (National Research Council, 2001; Pal, 2007; Ibrahim *et al.*, 2012b). The National Research Council (2001) and Chan (2005) classify intergenerational support by material (e.g. money or goods), time (e.g. household chores) and space (e.g. co-residence). While some authors refer to the types of support by distinguishing financial transfers (e.g. payment for bills) and non-financial transfers (e.g. personal care during sickness) (Pal, 2007; Ibrahim *et al.*, 2012b), Geurts *et al.* (2012) classify the types of support into emotional support (e.g. giving advice and attention) and instrumental support (e.g. help with cooking). For example, using a nationwide study in Malaysia entitled "Review on the National Policy and Plan Action for the Elderly" conducted in 2010, Ibrahim *et al.* (2012b) classified eight types of support into two sub categories. Monetary assistance, payment for treatment cost, place to stay, in-home care services and assistive devices were categorised into financial assistance. Helping with household chores, and providing care during sickness were categorised into non-financial support. By performing multinomial logistic regression, the contribution of factors on the likelihood that older people would receive no support, receive either financial or non-financial support, or receiving both financial and non-financial support was assessed. The results of the study showed that older people who co-reside with their adult children were 3 times more likely to receive both types of support (financial and non-financial) than not receiving any support at all (Ibrahim *et al.*, 2012b). In a recent study, Evandrou *et al.* (2018) examined types of support by distinguishing support associated with performing activities of daily living (ADLs) and instrumental activities of daily living (IADLs) and further classify such support into three separate types: personal support (e.g. dressing), basic support (e.g. cooking) and instrumental support (e.g. gardening). Together, these studies indicate that there are various classifications used in previous research to identify the different types of support received and provided by older people. Since the classification of the types of support varies among researchers, it is important to specify the types of support analysed which are discussed in Chapter 4.

Besides identifying the types of support, the intensity or amount of support is also crucial (Gomes, 2007). To date, there is a relatively small body of literature that is concerned with the different

types of transfers and their frequency (Evandrou *et al.*, 2018). Studies by Ng *et al.* (2002) in China, Ibrahim *et al.* (2012b) in Malaysia and by Evandrou *et al.* (2018) in Great Britain suggest that the types of intergenerational transfers which older people provide and receive, and their intensity, both vary. For instance, Evandrou et al. (2018) found that mid-life women were more likely to provide support to their older parents/ parents-in-law with personal tasks like bathing, compared to mid-life men. The geographical proximity (Dewit and Frankel, 1988; Ng *et al.*, 2002), living arrangement or co-residence status (Ibrahim *et al.*, 2012b) and the gender of the adult children (Gomes, 2007; Evandrou *et al.*, 2018) were found to be the main factors that affect the type and also the level of support which older people received and provided. An example in relation to co-residence and support exchange, comes from the work of Ibrahim *et al.* (2012b) who investigated the types of support received by older Malaysians showing that older people who co-resided with their adult children were three times more likely to receive both types of support (financial and non-financial) than those who did not co-reside with their children. With respect to the type of transfers received according to gender differences, a study by Tey and Hamid (2014) found that older persons were more likely to receive financial assistance from their sons (61 percent) rather than their daughters (43 percent). Correspondingly, evidence from cross-sectional analysis conducted in 1988 by Ward *et al.* (1992) in New York found that co-residing adult children provided greater assistance to their parents in terms of financial and domestic help compared to non-co-residing adult children.

3.5 Older people and co-residence patterns

The literature relating to the impact of co-residence with adult children on older people's well-being has been increasing (Martin, 1989; DaVanzo and Chan, 1994; Ngin and DaVanzo, 1999; Knodel and Ofstedal, 2002; Yasuda *et al.*, 2011).This body of literature includes the determinants of co-residence between older people and their adult children (DaVanzo and Chan, 1994; Meng and Luo, 2004; Giang and Pfau, 2007; Mohd *et al.*, 2017), co-residence in relation to other intergenerational transfers (Silverstein *et al.*, 2006; Pal, 2007; Gierveld *et al.*, 2012) and the relationship between co-residence and the labour participation of older persons. In this study, the literature on the type of support which older people provide and receive by their co-residence status will be examined before further investigating how such relationships could influence the labour participation of older people. There are very few studies which have examined the relationship of co-residence, intergenerational transfers and labour participation simultaneously. One such study is that of Cameron and Cobb-Clark (2008) in Indonesia, however such analysis does not take account of the types of support by co-residence status in affecting the labour participation of older people.

One of the key parts of this study is identifying the impact of co-residence status with respect to the type of support and the frequency of support being provided and received by older people. However, few studies have examined the types and intensity of support in relation to individuals' co-residence status (Gomes, 2007; Yi and Lin, 2009; Ibrahim *et al.*, 2012b). Ibrahim *et al.* (2012b) investigated the contribution of co-residence status towards the likelihood of older persons receiving financial and/or non-financial support from their adult children in Malaysia and found that co-residence with adult children was the most influential determinant of the support type. According to the study, if older people co-resided with their adult children, they were 3 times more likely to receive financial and non-financial support than not getting any support at all from their adult children (Ibrahim *et al.*, 2012b). For example, Ward *et al.* (1992) found that older people received greater assistance from their co-residing children with both financial and domestic tasks compared to assistance from their non-co-residing children. This is in line with the study by Ng *et al.* (2002) who reported that the highest support was received by older people who co-reside with their adult children. According to data from a nationwide study in Malaysia conducted in 2010, Ibrahim *et al.* (2012b) found that older people who co-reside with their adult children were three times more likely to receive both monetary and non-monetary assistance from their adult children than those who did not co-reside with their children. Research also found that co-resident children express a higher endorsement of filial values than non-co-resident children (Yi and Lin, 2009).

However, a recent study in Malaysia suggests that changes in traditional norms and living arrangements do not prevent non-co-residing adult children from observing their family obligations (Ibrahim *et al.*, 2012b). Non-co-resident adult children with resources, especially the sons, still fulfil their obligations by offering monetary assistance as a compensation for not residing with their parents (Lee *et al.*, 1994; Yi and Lin, 2009). Furthermore, non-co-resident children in Taiwan tend to provide financial and household assistance to their older parents without receiving any financial or physical assistance from their parents in return (Yi and Lin, 2009).

The factors found to predict the likelihood of co-residence have been explored in numerous studies. Several researchers have pointed out that addressing the support needs of both generations is associated with parent-child co-residence (Ward *et al.*, 1992; Hank, 2007; Smits *et al.*, 2010), which may in turn depend upon the parents' position in the life course (Aquilino, 1990). According to Aquilino (1990), parents in the younger age group (54 or under) whose youngest adult child was in the age range of 19-21 were more likely to have a co-resident child than parents with older children aged 22-25 and 26-29. Indeed, younger children were more likely to co-reside with middle-aged parents due to the nature of the continued dependence of children on their

parents. However, co-residence of parents in the older age group and their older adult children is often due to the parents' dependence on their children. Based on the same study, Aquilino (1990) found that having at least one adult child under age 30 increased the probability of co-residence with their child for parents in the older age group (55 years and older). Smits *et al.* (2010) carried out a study in the Netherlands using the Social Statistical database and showed that the extent of the need of adult children far exceeds the need of the parents, thereby perpetuating co-residence between the two generations. This finding is supported by a study which have observed that it is not the parental needs that necessitate co-residence but rather the parental resources that draw children into co-residence (Zhang, 2004).

A number of authors have considered the effect of the characteristics of elderly parents on the parent-child living arrangement. Chan and Davanzo (1996) identified parental income as affecting co-residence in Malaysia, where older people with higher incomes were less likely to co-reside with their adult children. The health status of older persons also influences the co-residence status as it may reflect the degree of possible need for support (Isengard and Szydlik, 2012) and resources (Yasuda *et al.*, 2011), thereby requiring the presence of a caregiver in the household (Smits *et al.*, 2010). Furthermore, age may likely be a factor that plays a part in the support needs of adult children and their parents and which directly affects older individuals' health and thus influences co-residence patterns. Parental need in terms of health-related support becomes more prominent as parents age throughout their life course (Grundy, 2000). A study of parent-adult child co-residence in urban China by Zhang (2004) found that the measures of parental needs are significant and have strong effects on determining co-residence. Assuming parents become frailer with the increase in age, the study found that the odds of co-residence increase by 7 percent with each additional year in the parent's age. Thus, as the need for old age care increases with the rise in age, children are more likely to co-reside with their older parents (Zhang, 2004).

A considerable amount of literature has been published on the effect of children's characteristics in determining co-residence outcomes. Using a nested logit framework, Cameron (2000) found that a child's marital status is one of the children's key demographic characteristics that influence co-residence in Indonesia. Married children are less likely to co-reside with their parents than non-married children, while younger children are more likely to co-reside with their parents than older children. Education is also found be a predictor of co-residence. For example, Zhang *et al.* (2014) found a positive association between education and co-residence. The age of children may also influence co-residence (DaVanzo and Chan, 1994; Cameron, 2000). DaVanzo and Chan (1994) who conducted their study in Malaysia found that the younger the age of the youngest child, the higher the likelihood of co-residence with their parents. The number of sons aged 20-29 and 30-

39 was positively associated with co-residence, and the effect of co-residence was stronger for the 20-29 age group compared to the 30-39 age group (DaVanzo and Chan, 1994). Additionally, Cameron (2000) asserts that younger children are more likely to co-reside due to social norms, as parental preference often is for co-residing with younger children. Moreover, the parents' home ownership status and the size of their home are also important determinants of co-residence, as they signify the parents' ability to offer their children accommodation (Isengard and Szydlik, 2012). In addition, de Valk and Billari (2007), who studied living arrangements among Dutch young adults, further argued that parents' home ownership leads to prolonged co-residence. Several studies have examined economic variables influencing the choice of co-residence. For example, (DaVanzo and Chan, 1994) identified that housing cost is among the factors affecting co-residence. They noted that married children opt to co-reside with their parents when housing costs are high.

3.6 Chapter summary

The above literature review and conceptual framework reveal the myriad of factors that contribute to older people's labour participation decisions and highlights the particular importance of intergenerational support. Therefore, this study seeks to derive a fuller understanding of the relationship between intergenerational support and labour participation decisions. The discussion above has indicated an abundance of empirical evidence from Malaysia and beyond that demographic, health, socio-economic, geographic and intergenerational support characteristics are associated with the labour participation among older people. Co-residence with adult children affects intergenerational transfer patterns in terms of the types and frequencies of support which older persons receive and provide (Ibrahim *et al.*, 2012b). The availability of family support is an important source of income for older persons and can be a driving factor for having an active labour market status. Indeed, Do *et al.* (2014) observed that older men with perceived income adequacy as a result of labour participation are likely to reduce their dependence on kin support.

Realising the importance of co-residence and intergenerational support, there remains a paucity of evidence on whether co-residence, types of support and frequency of support received and provided could affect older people's labour participation. Hence, the discussion in this chapter sets up the framework for addressing the aims of this study through the examination of older people's labour participation and in conjunction with both the co-residency status and the type and frequency of support exchange between older people and adult children and thus filling that gap that exists in other literature.

In addition, the review of the literature presented provides a useful summary in which findings across studies on labour participation, co-residence and intergenerational support are documented and available for policymakers in their policy analysis. The next chapter discusses the research methodology and presents and justifies the selection of the different methods that have been chosen for this study.

Chapter 4: Data sources and methodology

4.1 Introduction

In the previous chapter (Chapter 3), both the theoretical and empirical literature surrounding the topic of labour participation have been critically reviewed and past evidence for identifying the characteristics associated with labour participation among older people has been assessed. This present chapter focuses on the data sources and methodology used in this study.

Section 4.2 in this chapter first focuses on justifying the choice of methods employed in achieving the aims and objectives of this thesis. It also outlines the research approach and research design employed in this study. Section 4.3 further discusses the selection of data, providing the description of datasets for the analysis carried out and the justification for the usage of the dataset. This section also provides an explanation on the dependent and explanatory variables used. The analysis plan, which serves as a planning guide for the data analysis, is presented in Section 4.4. Section 4.5 presents the ethical considerations of this research. Finally, Section 4.6 concludes the chapter.

4.2 Justification of research methods

4.2.1 Research approach: Quantitative research

This study adopts a quantitative analysis approach to investigate the factors associated with labour participation among older people in Malaysia. To recapitulate, the research questions of this study are:

1. What are the demographic, health, socio-economic and geographical characteristics that are associated with the labour participation of older people?
2. To what extent is older people's co-residence with their adult children associated with older people's labour participation?
3. To what extent is the intergenerational support *received* by older people from their adult children and its frequency associated with the labour participation of older people?
4. To what extent is the intergenerational support *provided* by older people to their adult children and its frequency associated with the labour participation of older people?

It is apparent from numerous studies addressing the issue of labour participation among older people that quantitative methods are appropriate for exploring this topic area (Cameron and

Cobb-Clark, 2008; Gwee and Fernandez, 2010; Adhikari *et al.*, 2011; Chiu and Chen, 2013; Connelly *et al.*, 2014) although there are fewer studies which used a mixed method approach (Mooney *et al.*, 2002). Although mixed methods can sometimes provide a more effective evaluation of the integrity of the data than a single-methodology approach (Teddlie and Tashakkori, 2010), nevertheless the choice of the methodology is closely linked to the research questions of the study. To this end, conducting quantitative analysis of nationally-representative data can yield findings which are relevant to policymakers at the national level, and is therefore the most suitable approach in realising the aims and objectives of this research.

4.2.2 Research design: Cross-sectional research

Cross-sectional analysis is a study design that is most commonly used in the social sciences to examine patterns of phenomena at one point in time (Kumar, 2014). Relatively simple and cost-effective (Neuman, 2006), a cross-sectional design enables the researcher to examine the relationship between variables at one point in time, although such designs can be less informative in terms of the direction of causal influence between the variables (Bryman, 2015). Nevertheless, the design is best suited to this study as it allows the investigation of the prevalence of labour participation among older people by taking a cross section of the population at one time and detecting patterns of association between intergenerational transfers and co-residence on the one hand, and labour market participation on the other. Although the results of this study could help in providing evidence of statistical associations, nevertheless they were limited in terms of showing the causal relationship between a range of factors and older people's labour force participation. For instance, findings from various studies using cross-sectional data from China, India, Mexico, Thailand and Vietnam showed that people with poor health have a lower likelihood of participating the labour market, however such studies were unable to find evidence of a cause and effect of such relationship between the two variables (Pang *et al.*, 2004; van Gameren, 2008; Pandey, 2009; Adhikari *et al.*, 2011; Giang and Le, 2015). As a result, the use of a cross-sectional design does not allow further investigation to see whether labour participation would result in older people reporting a greater number of health problems or vice versa.

Notwithstanding its limitations, a cross-sectional design is common in the area of intergenerational transfers and support, and it can help us understand which factors are closely associated with such transfers and support. For example, Nguyen *et al.* (2012) studied the association between monetary transfers from Vietnamese adult children and older people's work participation using a comprehensive cross-sectional dataset from the Vietnam Living Standard Survey conducted in 1997/1998. The results showed an association between intergenerational monetary transfers and the labour supply of older parents (Nguyen *et al.*, 2012). Another study

that employed a cross-sectional design is that of Ling and Chi (2008) using data obtained from the National Survey of the Aged Population in China collected in 2000 to explore the determinants of work among older adults in urban China. On the other hand, Mooney *et al.* (2002) used UK national employment statistics, a large-scale survey of employees and in-depth interviews to investigate the impact of caring responsibilities on the labour participation of people aged 50 and above in the UK and examined factors which may affect this relationship. Such studies highlight the value of cross-sectional data in understanding key associations between factors related to intergenerational support at one point in time. Having explained the research design, the next section introduces the data selection as well as the variables used in this study.

4.3 Selection of data

4.3.1 Dataset: Malaysian Population and Family Survey (MPFS)

This research is non-reactive in nature as the participants being studied are unaware of it, unlike a reactive method in which the researchers are actively engaging the people they study by directly asking them questions (Neuman, 2006). Neuman (2011, p.49) defines existing statistics research as "research in which one re-examines and statistically analyses quantitative data that have been gathered by government agencies or other organizations". One example of a study that used existing statistics is the work by Reddy (2016) in examining the patterns and determinants of labour force participation of elderly people in India using data from the Employment and Unemployment Surveys of the National Sample Survey Office from 1983 to 2012.

The data used in this research comes from the Malaysian Population and Family Survey (MPFS). The MPFS is a serial study conducted every ten years since 1974 by the National Population and Family Development Board (NPFDB) under the Ministry of Women, Family and Community Development in Malaysia. The latest wave was the 5th MPFS, the data for which were collected in 2014. This data is used to analyse the demographic, health, socio-economic, geographic and intergenerational support characteristics associated with work participation among 4,059 individuals aged 60 years and above living in Malaysia (National Population and Family Development Board, 2016). The analysis of the MPFS-5 facilitates the investigation of the association between work participation, and intergenerational transfers and co-residence among older people.

The survey method is detailed in the document entitled 'Report on the key findings of the Fifth Malaysian Population and Family Survey 2014' by the National Population and Family Development Board (2016). The sampling frame used for the survey was based on the 2010

National Household Sampling Frame (NHSF). The MPFS-5 adopted a two-stage stratified sampling design. In terms of the strata classification process, the first strata involved all 13 states in Malaysia, while the second strata involved the urban and rural areas for all the states in Malaysia. In terms of sample selection, the sample selection process was conducted in two stages with a selection of Enumeration Block (EB)[2] as a first-stage sampling unit using the probability proportional to size method. The second stage involves the selection of living quarters (LQ)[3] sample from the selected EB using a systematic method through the generation of a random number and determination of a sampling interval such that EB had the same probability of being selected. 2,889 EBs and 23,112 LQs were selected for this survey. From the total number of 23,112 LQs visited, 19,791 (85.6 percent) were eligible for interview. Of the 19,791 LQs identified as eligible for interview, 13,856 were successfully interviewed, yielding a response rate of 70 percent. Of the 13,856 LQs interviewed, data from a total of 14,156 households was successfully collected which shows that there was more than one household in some selected LQs. Of the households, 57,246 members of the household were covered. Although there is no simple answer to what is an appropriate response rate (Morton *et al.*, 2012), a 70 percent response rate is considered very good, desirable and achievable in social surveys (Nulty, 2008; Babbie, 2013). A good response rate reduces the risk of bias in the findings (Bryman, 2015). According to Baruch (1999), there is wide variation in response rate when researchers conduct surveys. There are a number of steps which can be taken to improve response rates (Bryman, 2015). In this particular survey, the survey team conducted revisits (call-back visit) for each selected LQ on problematic LQ to increase response rate (National Population and Family Development Board, 2016).

The number of respondents interviewed who were aged 60 years and above (MPFS 54) was 4,059. Addressing the geographic coverage of the MPFS-5, the survey covered both urban and rural areas. It covered those individuals living in dwelling units only, while excluding people living in institutional living quarters, such as welfare homes and hospitals (National Population and Family Development Board, 2016). However, such exclusion criterion is not a limitation for my research as the focus of the thesis is labour participation among individuals living at home, not in institutional environments.

[2] Enumeration block (EB) is defined as a geographical area which is artificially created for fieldwork and has specific boundaries. Each EB consists of 80 to 120 living quarter (LQ). All EB is formed within gazetted boundaries namely within administrative districts, *mukim* or local authorities (National Population and Family Development Board, 2016).

[3] Living quarters (LQ) is defined as a separate and independent structure used as habitation. Two categories of living quarters are dwelling unit and institutional living quarters (eg. Hospitals, old folk's homes, welfare homes and etc.) (National Population and Family Development Board, 2016).

The survey conducted was targeted to 5 specific groups, namely, ever married women aged 15-59 years (MPFS 51), ever-married men aged 15-59 years (MPFS 52); never married adolescents aged 13-24 years (MPFS 53), older people aged 60 years and above (MPFS 54); and finally single persons aged 25-49 years (MPFS 55). Since this research focuses on the older population, only the dataset pertaining to older people aged 60 years and above (MPFS 54) was used in this study. The dataset on people aged 60 years and above provides information on the demographic profiles of older people, including information on their age, gender, ethnicity, marital status, and co-residence. Uniquely in MPFS-5, as compared to previous surveys in the series, the survey was designed to reflect support provided in both directions; assistance from adult children to older parents and vice versa. In relation to the study of older people's labour market participation and socio-economic status, the survey documents older people's current jobs, previous employment histories, forms of savings and other sources of income (National Population and Family Development Board, 2016).

It is worth noting that the MPFS-5 questionnaires included a wider range of questions and topics than previous questionnaires, for example the data on the receipt of support by older people from their adult children and vice versa, which is particularly relevant to the focus of my thesis and the research questions outlined (refer Section 1.3). The modification and the improvement of the MPFS-5 was the outcome of thorough evaluation and feedback received from various agencies such as the government, non-governmental organisations and institutions of higher learning through meetings and discussions in order to ensure the information gathered was in line with the latest issues, debates and was of policy relevance within Malaysia's current and future context (National Population and Family Development Board, 2016).

Furthermore, the revisions and improvement of the questionnaires were also informed by the results of the pilot test conducted in November 2013 prior to conducting the survey in 2014 (National Population and Family Development Board, 2016). The preliminary analysis from the pilot test was undertaken to ensure that the data collected was robust and would enable the investigative questions to be addressed (Saunders, 2016). Pilot testing is important in ensuring the research instrument as a whole functions well and there are no anomalies which cannot be explained or issues of data cleaning required (Bryman, 2015). Pilot testing can help researchers refining the questionnaire to monitor the recording of data, obtain an assessment of the question's validity and the likely reliability of the data that is collected (Saunders, 2016). Such pilot testing of the MPFS-5 provides the researcher with additional re-assurance of the quality and the robustness of the data collected (Kumar, 2014; Bryman, 2015).

In terms of the MPFS-5 data collection process, data collection was conducted through face-to-face interviews using a structured questionnaire which can be found in **Appendix A.** This type of research instrument is a common method of data collection in quantitative research (Kumar, 2014) and conducted to standardised the asking and often the recording of answers in order to keep interviewer-related error to a minimum (Bryman, 2015). As the survey was administered in person, there is a possibility that the interviewers' characteristics can influence the respondents' replies (Bryman, 2015) which is one of the common problems faced in conducting structured interviews. Other common problems include mistakes or information missed out during interviews (Saunders, 2016). However, the interviewers were given intensive training and guidance particularly on the objectives of MPFS-5, questionnaire and work ethics in the field. Apart from the involvement of 250 personnel including statisticians, data quality and field checks conducted by the NPFDB have also contributed to enhancing the quality of the data and thus minimising data collection errors and avoiding any inconsistencies.

Another important aspect of this dataset is the issue of weighting (Bryman, 2015). The main purpose of weighting is to maintain a single level analysis, adjusted in order to overcome unequal sample selection probabilities, coverage errors and non-responses to avoid the risk of having biased estimates (Bollen *et al.*, 2016). It can be manipulated through the use of a sample weight by standard software packages in adjusting selection weights so that the sample is as representative as possible of the population (Thomas *et al.*, 2005). The MPFS-5 dataset is reported to be a nationally representative sample where the analysis results in findings which have relevance for the total population in Malaysia. However, the survey team have not constructed any weights to accompany the data for this study, which directly affects the extent to which the findings of this thesis are representative of the national population in Malaysia. However, it is worth noting that other researchers using the MPFS-5 dataset (for example, Kim and Tey, 2018) have not highlighted weighting issues as a challenge in their study.

Apart from the MPFS-5 datasets, Malaysia's nationally representative datasets include the First Malaysian Family Life Survey (MFLS-1) and the Second Malaysian Family Life Survey (MFLS-2) designed by the RAND corporation, and the Household Expenditure Survey 2009-2010 (HES) conducted by the Department of Statistics Malaysia, all of which were considered for this research. After deliberation, the MPFS-5 was chosen as the most suitable for this research on account of three main reasons. Firstly, the MPFS-5 includes a wide range of demographic, socio-economic, health, geographic and intergenerational support indicators such as highest educational attainment and number of health problems, all of which have been identified by previous research for their association with the determinants of older people's labour

participation (Adhikari *et al.*, 2011; Giang and Le, 2015). By contrast, other datasets do not include all of these indicators, especially the provision of support in both directions.

The second reason for opting for the MPFS-5 relates to the use of the latest data available, as this study was conducted in 2014. The release of the MPFS-5 dataset in 2016 offered the opportunity to utilise the latest available data to yield findings which are relevant to the policymakers at the national level and the most suitable data in addressing the aims and objectives of this research. As a comparison, the MFLS-1 was carried out in 1976-1977 while the MFLS-2 in 1988-1989. The MFLS-1 and MFLS-2 have been the source for more than 200 journal articles (Chan and Davanzo, 1996), papers and book chapters, and 50 theses and dissertations (Chan, 1991). In addition, these datasets are easily accessible and rich in information, with information about demographic characteristics, income and wealth information being available at both the individual and household levels. However, the decision not to use this dataset as a source for this research was mainly due to the fact that the dataset is outdated and information gathered may not represent the latest circumstances of older individuals in the ever-changing economic, demographic and socio-economic context of Malaysia. To date, no continuation of the wave of the survey exists after the MFLS-2, although the RAND and the NPFDB had planned to field the Third Malaysian Family Life Survey in 2000 and re-interview all MFLS-1 and MLFS-2 respondents, a sample of their adult children, and a new representative sample (Beckett *et al.*, 1999). To the best of the researcher's knowledge, no research has studied the determinants of older people's labour participation using the latest nationally representative dataset and this study addresses this important research gap. The final strength in using the MPFS-5 relates to it being a secondary dataset. The secondary data analysis of the MPFS offers an advantage to the researcher compared to collecting their own data, overcoming the constraints associated with time, energy and money (Ghauri and Gronhaug, 2010).

Although the MPFS-5 was selected based on its advantages, this data source still presents certain disadvantages which are important to consider and take into account when interpreting the results. Firstly, although this dataset is report to be nationally representative, nevertheless there may be challenges associated with the data collection in Malaysia which may question the extent to which the dataset is nationally representative. For example, published research in Malaysia has sometimes relied on the inclusion of internationally recognised tools in order to strengthen the validity of statistical analysis based on data which is reported as nationally representative (Ahmad *et al.*, 2017). It is important to note that such issues relating to survey data collection can be found in countries beyond Malaysia (Gray *et al.*, 2013). A second challenge arising from the use of this dataset in this study is that key concepts under study such as co-residence and the exchange of support between younger and older generations, are more dynamic than the cross-sectional

patterns captured by the measurements in the survey. This is a challenge which may result in the over- or under-representation of the concepts being studied in this research, and which has been acknowledged by other research in this area (Ngin and DaVanzo, 1999). A third challenge with the use of this dataset relates to the fact that the survey's measurement tools may not capture the complexity of key concepts in this research, for instance the exchange of support between generations is embedded in a rich cultural landscape involving filial traditions (Evans *et al.*, 2017). Such complex concepts are not represented in this survey, and would ideally be represented through a greater mixture of quantitative and qualitative research design, which is beyond the scope of this research. The weaknesses of the selection of this dataset are also discussed following the presentation and discussion of the findings, in Section 7.5.

Among the limitations of using secondary data is the issue of familiarity with data due to the fact that it has been collected by others (Neuman, 2011; Bryman, 2015). However, with an ample period of time, the researcher was able to be familiar with the dataset in terms of understanding the range of variables used and how it was collected and coded (Bryman, 2015). The ability to comprehend the overall organisation of the dataset enabled the researcher to identify the relevant variables and categorise those variables in a manner suitable for answering the research questions posed by this study. The process of selecting variables, coding and the use of various methodological techniques was also guided by the literature review and discussed in more detail in the analytical plan presented in the following section.

4.4 Analytical plan

In preparing the dataset for analysis, the key measurement concepts and variables were first identified. This includes how the dependent and explanatory variables were conceptualised, operationalised and recoded. A combination of statistical methods was employed and the results were summarised using appropriate techniques which include descriptive, bivariate and multivariate analysis. Throughout this study, the Statistical Software Package for Social Science (SPSS) version 22.0 was used.

4.4.1 Dependent variables

The dependant variable or outcome variable according to Wetcher-Hendricks (2014) refers to the behaviours, attitudes and characteristics predicted by the independent variable. Based on the research questions in this study, people's participation in the labour market is the variable of interest to the researcher. The current problems and debates surrounding the need to ensure

active aging among old people, as well as the gap in the existing literature concerning research on older people in Malaysia, motivates this study on labour participation.

In this study, a narrow definition of labour participation is used. The concept of labour participation simply refers to older people who are currently working. The definition of older people used in this study is people aged 60 years and above, in line with the United Nation's recommendation (Tan *et al.*, 2016). The variable was constructed based on the question in the original questionnaire: "Are you currently working?" (See Question No. D1).It is measured by a nominal scale including the responses 'Yes' or 'No' indicating whether the individual is currently participating in the labour market or not (0 if the individual is not currently working, retired or has zero earnings and 1 if the individual is currently working with positive earnings). The list of variables is indicated in Table 4-1.

Table 4-1: List of variables

Variables	Detailed information
Dependent variable Labour force participation : Dummy	= 0 if not currently working, =1 if currently working
Explanatory variable : **Demographic Characteristics:**	
Age	= 1 if 60–64, = 2 if 65–69, = 3 if 70–74, = 4 if 75 and above
Gender	= 1 if male, = 2 if female
Marital status	= 1 if single never married, = 2 if married, = 3 if widowed, = 4 if divorced/ separated
Ethnicity	= 1 if Malays, = 2 if Chinese, = 3 if Indian, = 4 if others
Co-residence with adult children	=1 if No, =2 if Yes
Health Characteristics:	
Number of health problems	=1 if none, =2 if 1 health problem, =3 if 2 health problems, =4 if 3 or more health problems
Number of difficulties with ADLs	=1 if none, =2 if difficulty in 1 ADL, =3 if difficulty in 2 ADLs, =4 if difficulty in 3 or more ADLs
Socio-economic characteristics:	
Highest education attainment	=1 if no formal education, =2 if pre-school/primary school, =3 if secondary school, =4 if post-secondary/higher education
Number of income sources	= 1 if none, =2 if 1 income source, =3 if 2 or more income sources
Geographical characteristics:	
Region	=1 if Southern region, =2 if Central region, =3 if Northern region, =4 if East Coast region, =5 if Sabah, Sarawak and Labuan.
Place of residence	= 1 if urban, = 2 if rural
Intergenerational support characteristics: Receipt of support by older people from adult children and its frequency	
Cash Assistance Paying bills Preparing meals and basic needs Household chores Personal care Listening to parent's problem	=1 if never, =2 if at least once in a few months, =3 if at least once a month

Accompanying parents to places	
Intergenerational support characteristics: Provision of support by older people from adult children and its frequency	
Cash Assistance Paying bills Preparing meals and basic needs Household chores Personal care Listening to children's problem Accompanying children to places	=1 if never, =2 if at least once in a few months, =3 if at least once a month

Source: Author's own interpretation

4.4.2 Explanatory variables

The independent or explanatory variables refer to predictors of behaviours, attitudes and characteristics (Wetcher-Hendricks, 2014). The conceptual framework set out as shown in Chapter 3 provides the basis for this research. Guided by the existing literature surrounding the topic of labour participation, as well as the research questions of this study, the explanatory variables are selected.

It is of importance to address the setup of the reference category for the variables in this study. Although there are no clear-cut rules to select the reference category, there are certain explanatory variables where the reference category is almost automatically chosen, while some have ordered level and some have no clear reference level (Sperandei, 2014). Guided by the literature, the reference category as the one most likely to be associated with the outcome variable. In some instances, the reference category was chosen based on the natural order of the category whether the ordinal category was the highest or the lowest. In the event of no clear reference category (Sperandei, 2014), the decision was taken by evaluating which category can contribute to the most effective presentation of the results.

It is worth noting that ethnicity and urban/rural residency are inevitably confounding variables in the sense that the boundaries between the different categories may be blurred and may dynamically shift over time. For example, the definition of an urban setting may change over time as the population expands to reside beyond its geographical boundaries (Yaakob *et al.*, 2010). Similarly, the children of individuals who come from different ethnic groups may have self-reported within particular ethnic categories, thereby blurring the boundaries between different ethnic groups (Hirschman, 1987). In addition, due to the multi-ethnic dimension in Malaysia, difficulty arises due to measuring ethnicity, whether the meaning and measurement of ethnicity is the same in the different surveys and documents and over time (Nagaraj *et al.*, 2015). For example, the categorisation of ethnic groups may also change over time in order to accommodate

changes in the demographic composition of society. Notwithstanding their importance in this study, such confounding issues can limit what conclusions can be drawn with regard to these key variables.

The next section discusses the variables in each characteristic in terms of how the variables are conceptualised, operationalised, coded, categorised and selected.

4.4.2.1 Demographic characteristics

Previous literature on labour participation used demographic characteristics as independent variables (Phillipson and Smith, 2005). The demographic characteristics used in this study are age, gender, marital status, ethnicity and co-residence. These variables were selected based on their common use in existing literature (Chou, 2010) which gives actionable and meaningful interpretation in the study. Furthermore, the variables which were chosen reflect the available information in the MPFS-5 survey and are in line with the study's research questions. Although there are other demographic variables that are associated with labour participation, for example one's number of children, the researcher did not include this variable due to the problem of multicollinearity. As the variable of co-residence with adult children was included, the number of children would be highly correlated; thus the variable was omitted to avoid any potential issues for the analysis (Midi *et al.*, 2010). The following section describes how demographic variables are measured and what the hypothesised relationship is between labour participation and these determinants, based on evidence from previous literature.

Age is considered the most important variable in demographic characteristics and has been effectively used in previous studies to show the differences among different birth groups relating to labour participation of older people (Friedman *et al.*, 2001; Pang *et al.*, 2004; Giang and Nguyen, 2016). Age is expected to be negatively related with labour force participation (Connelly *et al.*, 2014; Reddy, 2016). Labour participation tends to decline with age, as individuals are less likely to work due to deteriorating health, declining physical strength and age discrimination as their age increases (Raymo *et al.*, 2004; Eeuwijk, 2006; Gwee and Fernandez, 2010; Vodopivec and Arunatilake, 2011). The original age variable, as used in the MPFS-5 survey, was continuous. In this logit model, the researcher has categorised age into 4 categories: 60–64, 65–69, 70–74 and 75 years old and above. Consistent with the study by Giang and Le (2015), the first age category is chosen as the reference group as it is expected that the other three groups will show a negative coefficient since the older the individuals, the lower the likelihood that they participate in the labour market.

Gender is also likely to be related to labour participation and studies have suggested gender differentials in this respect (Pandey, 2009). As females are selected to be the reference category based on previous research (Reddy, 2016), a positive coefficient is expected to show older men as being more likely to participate in the labour market. Generally, older women are less likely to participate in the labour market due to the gender roles of women, such as in taking care of family members and carrying out household chores, which limit their time engaging in the labour market (Evandrou *et al.*, 2002; Reddy, 2016). However, there is a possibility of cohort differences in the pattern of labour participation as indicators of employment show women are currently getting better paid in the labour market compared to the previous cohort (Hamid *et al.*, 2004). Besides, women in Malaysia had more higher education compared to men since the 1980 birth cohorts (Nagaraj *et al.*, 2014). This has shown that the gender gap has narrowed with younger cohorts of women who are increasingly likely to be educated and to work (Loichinger and Cheng, 2018). Women also differ from men in terms of financial resources which can lead to a greater risk among older women facing incidence of poverty in later life (Vlachantoni, 2012). Furthermore, women are likely to depend on their children's and spouses' income in their old age (Giang and Le, 2015), and older men in Malaysia were found to be more likely to receive employment-related income compared to older women (Masud *et al.*, 2006). Thus, this literature supports the importance of including gender in the analysis as a factor associated with labour participation. In this study, a dummy variable is used, where 1 indicates male and 2 indicates female respondents. In line with the existing literature, the latter is chosen as the reference category (Fadayomi and Olurinola, 2014; Giang and Nguyen, 2016).

Labour participation literature has suggested that marital status is a demographic variable which is likely to be associated with the labour participation of older people (Ling and Chi, 2008; Giang and Le, 2015). For example, Adhikari *et al.* (2011) found that there is a positive relationship between being widowed and unmarried and labour participation. This variable is employed to identify the potential difference in labour participation among the four categories of marital status: single never married, married, widowed and divorced/separated older people. For this variable, marital status is a categorical variable with a value of 1 if the individual is single never married; 2 if married; 3 if widowed and 4 if divorced/separated. In line with the study by Reddy (2016) and Adhikari *et al.* (2011), married individuals are selected as the reference group. The coefficient for the marital status is difficult to predict as research has found contrasting views (Reddy, 2016). The coefficient might be negative in that divorced, separated and single individuals may be financially supported by other members in the family (Giang and Le, 2015). On the other hand, the coefficient might also be positive if older people lack access to other sources of old age support, thus compelling them to work in order to sustain their consumption in later life (Reddy,

2016). Reddy (2016) found that individuals who are widowed or unmarried are more likely to participate in the labour market than other groups, and this is consistent with the study by Austen and Birch (2005) which found that married women in Australia have a lower likelihood of participating in the labour market compared to non-married women.

Ethnicity is included in the model because Malaysia is a multi-ethnic country (Gwee and Fernandez, 2010; Tey *et al.*, 2015). Previous studies suggest that economic activity and income distribution differ across various ethnic groups in Malaysia (Saari *et al.*, 2015). Past literature also have suggested evidence of ethnic diversity in parental support (Teh *et al.*, 2013), co-residence with adult children (Chan and Davanzo, 1996) and health status (Evandrou *et al.*, 2015; Badrasawi *et al.*, 2017) which may cause differences in the propensity to participate in the labour market among older people across ethnic lines (Gwee and Fernandez, 2010). The original ethnicity variable in the MPFS-5 survey consists of 13 different ethnicities and was recoded into 4 categories to reflect the 3 majority ethnic groups in Malaysia while the minority groups were coded as 'others'. 'Other Bumiputera' group were included within the category of 'others', and this has resulted in a larger subsample of 'others', making the category more amenable to meaningful analysis. The population in Malaysia is predominantly composed of Malays, who take the value 1, a value of 2 is attached to Chinese individuals, 3 for Indians and finally a value 4 for others. The Malay ethnic group is taken as the reference. There is no study in Malaysia to show the influence of ethnicity on the labour force participation among older people, although Gwee and Fernandez (2010) found a positive relationship between ethnicity and labour participation in Penang, Malaysia; however, this result was not statistically significant.

Likewise, the literature review demonstrated that co-residence and the labour participation of older people are very much interrelated. Co-residing with adult children was found to have a negative relationship with labour participation among older people (Adhikari *et al.*, 2011) and among older people residing in rural areas in China (Connelly *et al.*, 2014). Adhikari *et al.* (2011) provide evidence that older people in Thailand who lived with their children were less likely to work, and this result suggests that the children look after their parents in old age. Therefore, in this study, it is expected that co-residing with adult children has a negative relationship with labour force participation. Based on the study by Adhikari *et al.* (2011), older people who co-reside with their adult children are taken as the reference category.

4.4.2.2 Health characteristics

Previous literature suggested that health characteristics play an important role in determining the labour participation of individuals as they affect the ability and capacity to work among older people (Nunez, 2010; Banks *et al.*, 2015; Bingley *et al.*, 2015). The concept of health is broad and

complex, and thus is difficult to study comprehensively (Banks *et al.*, 2015). As there is no consistent measure of health, previous research uses a variety of concepts and variables to represent health (Banks *et al.*, 2015). Much of the published research on older people used subjective health measures such as perceived or self-reported health status (Giang *et al.*, 2018), chronic health condition/illness (Giang and Le, 2018; Hjärtström *et al.*, 2018), health satisfaction (Carter *et al.*, 2013) and health problems (Thakur *et al.*, 2013) from the viewpoint of both mental and physical health (Zimmer *et al.*, 2002; Pharr *et al.*, 2011). Furthermore, literature focusing on the capacity to work in relation to health among older people also includes functional disabilities (Hairi *et al.*, 2010; Gupta *et al.*, 2014), impairment (Cutler *et al.*, 2013; Stamm *et al.*, 2016) and limitations/difficulties in performing activities (Hairi *et al.*, 2010; Hoi *et al.*, 2011; Cutler *et al.*, 2013). Other researchers have used objective health indicators (Kalwij and Vermeulen, 2008); for instance, Carter *et al.* (2013) used cancer registration and hospitalisation to examine the impact of health shocks on individuals' labour participation. Guided by the literature and the available information of the MPFS-5 survey, the variables most appropriate in measuring health characteristics to represent different aspects of health among older people were identified. In this study, there are two explanatory variables to operationalise the concept of health which are the number of health problems and the number of difficulties with ADLs.

Previous empirical studies in Australia have found that health influences labour participation: having multiple health conditions was associated with lower labour participation and lower income (Schofield *et al.*, 2008; Schofield *et al.*, 2013; Temple and Williams, 2018). The number of health problems was constructed following the questions in the original questionnaire (See Question H2): "Do you have any of the following health problems that have been diagnosed by certified doctors?" The original variables relating to a respondent's health problems were in 9-category variable corresponding to nine types of health problems (high blood pressure, diabetes mellitus, coronary heart disease, arthritis, asthma, kidney pain, stroke, gout and cancer), where the responses for each health problems were coded as "No and Yes". Using this variable, a new variable was derived. The number of health problems were totalled and recoded into a 4-category variable: (1=none, 2 =1 health problem, 3=2 health problems and 4=3 or more health problems), with "none" as the reference group.

The second measure used to examine individual's health status is the self-perceived dependence in Activities of Daily Living (ADLs). While ADLs are functional skills needed to manage basic physical needs such as grooming and dressing, Instrumental Activities of Daily Living (IADLs) concerns the complex activities related to independent living in the community such as managing one's finances (Mlinac and Feng, 2016). Although literature argues that functionality with both ADLs and IADLs is also an important indicator for older people health status (Hu *et al.*, 2012), the

questions pertaining to the ability to conduct IADLs among respondents does not exist in the MPFS-5 questionnaire. Apart from that, ADLs are more critical functions than IADLs, as disability in performing basic ADL function represents a more severe stage of physical dysfunction which prevents the undertaking of a self-care task of everyday life (Liang *et al.*, 2017). As functional disabilities in ADLs are risk factors of hospitalisation, increased healthcare expenditures and poor quality of life among older people, difficulties with ADLs provide a clearer reflection of health-related needs (Hu *et al.*, 2012) compared to IADLs. This justifies why difficulty with ADLs was chosen as the indicator of health in this study. In the dataset, the original variable relating to the difficulties performing ADLs were of 10 categories corresponding to the 10 types of ADLs with the responses for each type of being "No problem", "Problem but still performing it" and "Problem, need help". The researcher merged the responses of each type of ADLs into 2 category responses. The new derived responses were coded as "No and Yes". The number of difficulties with performing ADLs was totalled and recoded into a 4-category variable (1=none, 2=Difficulty in 1 ADL, 3=Difficulty in 2 ADLs, and 4=Difficulty in 3 or more ADLs) with "none" as the reference group.

4.4.2.3 Socio-economic characteristics

Socio-economic characteristics play an important role in social research (Wolf and Hoffmeyer-Zlotnik, 2003). Socio-economic status has been operationalised in many ways and the most commonly used indicators of socio-economic characteristics are income, education and employment (Grundy and Holt, 2001). In this section, the information regarding older people's income and education as a measure of socio-economic characteristics is explored, and how the relevant variables are operationalised is discussed.

Literature has demonstrated that education plays an important role in the labour market (Alam and Mamun, 2016). Moreover, a higher educational attainment suggests that people have made a greater investment in human capital with longer years of schooling (Burgess, 2016). This may translate into individuals being in a more advantaged socio-economics group. As education affects one's employability and earnings, the relationship between a person's education and their socio-economic characteristics is central to their degree of social mobility (Burgess, 2016). This literature shows that educational attainment serves as an important socio-economic indicator which is associated to labour participation. In order to operationalise the concept of education in the form of a variable, highest educational attainment was used in this study. Relying on the Malaysia Education Blueprint by the Ministry of Education Malaysia (2013) helped to inform the researcher of the most appropriate way to code the variables. Initially, the responses were in 18 categories, reflecting each phase of the education structure. In this study, this variable was

subdivided into 4 categories. Highest education attainment has a value of 1 if respondents have no formal education; 2 if they attain preschool/primary education; 3 if they attain secondary education; and finally, 4 if their highest educational attainment is post-secondary or higher education. Following Giang and Le (2015), the reference group is individuals who have no formal education. While in many advanced countries attaining higher education relates to more skills and greater work participation (Bjursell *et al.*, 2017), in many developing countries like Thailand and Vietnam education attainment is negatively related to older people's labour force participation, as found in studies by Giang and Le (2015) and Adhikari *et al.* (2011). Those with a high level of education may have a relatively high salary from their previous jobs, thus deterring them from participating in the labour market. Furthermore, older people with a higher education are more likely to be employed in the formal sector and to have access to some form of old age social security and retirement benefits. As a result, thus they may choose to retire in their old age (Adhikari *et al.*, 2011).

Another important socio-economic characteristic is income (Grundy and Holt, 2001). Income is used in various research projects as an explanatory variable and is a multidimensional concept (Warner and Hoffmeyer-Zlotnik, 2003). As income in social studies serves as a measure of social inequality, the use of income is also considered a major resource in the process of decision making (Warner and Hoffmeyer-Zlotnik, 2003). This is in accordance with the study by Ng and Sia (2012) which found that the decision to work or not depended on the individual's financial status. In order to consider the financial resources of individuals and how they relate to labour participation, the number of income sources was used. The availability of income sources, such as a salary, and other non-labour income, like EPF, pension and income from children, is a form of financial security for older people (Gwee and Fernandez, 2010). Therefore, the availability of income sources is expected to be inversely related to labour force participation. In order to operationalise the concept of income in this study, the number of income sources was categorised into 3 categories with a value of 1 if the individual has no sources of income, a value of 2 if an individual has only 1 source of income and a value of 3 if respondents have 2 or more sources of income. The reference group is 'no sources of income' and the coefficient is expected to be positive.

4.4.2.4 Geographical characteristics

Previous studies have indicated that geographical characteristics are associated with labour participation. Literature suggests that labour participation varies according to the place of residence and region due to their distinct characteristics in terms of the level of development, access to job opportunities and education and the types of employment sector (Chou, 2010; Wan

Ahmad *et al.*, 2011; Giang and Le, 2015; Singh and Das, 2015). These aspects matter as they may differentiate whether a person is of retirement age or receiving a pension.

According to the literature, the size of the group, their percentage as part of the total population and the density of older people vary across regions in Malaysia (Hamid, 2015), which may affect the patterns of labour participation among older people. The concept of region used in this study refers to the geographical location where the respondents live. In operationalising the concept of region, the initial category was a list of 14 locations reflecting 13 states and a federal territory. In order to make the analysis more meaningful, the researcher categorised the initial location into five regions with a value of 1 if the respondents live in Southern region, a value of 2 for the Central region, a value of 3 for the Northern region, a value of 4 for the East Coast region and 5 for Sabah, Sarawak and Labuan.

Another geographical characteristic is the place or residence, where respondents may either reside in an urban or a rural area. The geographical place of residence is often related to a rural–urban disparity which may have an impact on the respondents' labour force participation (Hamid, 2015). Older people in rural areas were generally those with less income, lower educational attainment and lower healthcare utilisation, the latter of which resulted in more health problems compared to urban residents (Selvaratnam and Poo, 2007; Mohd Nor and Said, 2014; Barbosa *et al.*, 2015). A study by Siwar *et al.* (2016) showed that the rate of poverty is much higher in rural areas in Malaysia. Individuals living in rural areas have a high propensity to participate in the labour market as they are compelled to work longer than their urban counterparts (Wan Ahmad *et al.*, 2011; Fadayomi and Olurinola, 2014; UNFPA, 2017). Thus, it is important for researchers to explore whether geographic locale influences the decision of older people as to whether to participate in the labour market. In this study, the place of residence has a value of 1 if the respondent lives in an urban area, and a value of 2 if they are residing in a rural area. Following the study by Giang and Le (2015) the rural area is the reference place of residence. It is expected that the coefficient will be positive as those residing in rural areas are compelled to work to sustain their lives in old age. This is in accordance to a study by Giang and Le (2015) which showed that older Vietnamese living in rural areas were likely to exhibit higher participation rates compared to urban residents.

4.4.2.5 Intergenerational support characteristics

The final characteristics explored in this study are intergenerational support characteristics. Intergenerational support, as documented in various literature described in Chapter 3, has significant implications for the labour market participation of older people (See Section 3.4). This

section discusses how intergenerational support variables are being understood and operationalised in this study.

The concept of intergenerational support in the context of this research refers to two dimensions: (1) the support older people received from their adult children and its frequency in the last 12 months and (2) the support older people provided to their adult children and its frequency in the last 12 months. Receiving or providing support has implications for whether older people decide to participate in the labour market or not. This is evident in a study by Nguyen *et al.* (2012) in Vietnam which found monetary transfers from adult children to their mothers have reduced their mothers' hours of work in the labour market. In addition to the receipt and provision of support, with a response of "Never" and "Yes" as indicated in Question F1 and F3 respectively in Appendix A, the respondents were also asked about the frequency of receiving and providing seven different types of support in the last 12 months: (1) Cash assistance, (2) Paying bills, (3) Preparing meals and other basic needs, (4) Household chores, (5) Personal care, (6) Listening to parent's problems and (6) Accompanying parents to places. As indicated in Question F2 and F4 in Appendix A, the responses in terms of the frequency of support being received and provided were initially categorised into 7 groups: Once in a few months, once a month, few times a month, once a week, few times a week, every day and a Not Applicable 'N.A' category (refer to Question F2 and F4 in Appendix A). The N.A category includes childless and people who never received or provided any support. In the initial stage of analysis, two separate variables were analysed, for example Question F1 and F2 (as well as Question F3 and F4), but the results were not significant due to the problem of multicollinearity. The N.A category of Question F2 and F4 is particularly helpful as it eliminates the need to consider redundancy issues in Question F1 and F3. Therefore, a new categorical variable for the frequency of receiving and providing support was created with four categories that are given the values of 1 if the respondent never received/ provided support, 2 if they did so at least once in a few months, 3 if they did so at least once a month; and finally the value of 4 was attached to respondents with no children so that the sample size is retained. In addition, a single variable allows the researcher to obtain a more holistic picture for all respondents, including those who never received or provided any support.

4.4.3 Statistical techniques

Univariate techniques

Firstly, univariate analysis or descriptive analysis refers to analysis which only uses one variable at a time when analysing data (Bryman, 2015). In univariate analysis, the process involves describing, summarising and finding patterns in the data in an effective and meaningful way (Frankfort-

Nachmias and Nachmias, 2008). This is achieved by describing the frequency and the percentages and through illustration in pie charts, bar charts and frequency distribution tables (Bryman, 2015). In this study, univariate analysis was initially used to analyse less complex associations between labour participation outcomes and the respondents' demographic, health, socio-economic, geographical and intergenerational support characteristics.

Bivariate techniques.

Secondly, bivariate analysis was carried out and bivariate tables constructed to find out whether two variables analysed at the same time were related (Frankfort-Nachmias and Nachmias, 2008; Bryman, 2015). A variety of techniques are available for examining the relationship, but in this study cross tabulations and a chi-square test was applied. A cross tabulation was also conducted to identify the relationship of the factors associated with the labour force participation of older people by summarising data in terms or rows and columns based on cell values (Singh, 2007). A chi-square test applied to a contingency table was performed between the variables in order to examine their association with labour participation as well as to establish how confident we can be that there is a relationship between the two variables (Matthews and Ross, 2010). The two types of bivariate techniques employed in this study are now further discussed.

Cross-tabulations were used in this study for the purpose of analysing the relationship between two variables that have been organised in a table. Cross tabulations enable researchers to identify interesting similarities and differences within the table and are appropriate for comparing categorical variables (Kumar, 2014).

The second bivariate statistical technique used, the Chi-square test statistics denoted by χ^2, was applied in this study alongside all cross tabulations. It compares the actual observed frequencies in each cell of tables with the expected frequencies (Greasley, 2007). A Chi-square test could indicate how confident a researcher can be that there is a relationship between the two variables in the population (Bryman, 2015) but not the strength of the association. In terms of the interpretation of output from chi-square for independence, the assumptions of the chi-square test were firstly checked. According to Pallant (2016), the following assumptions should be observed:

a) The lowest expected frequency in any cell should be 5 or more. Some authors suggest less stringent criteria: at least 80 percent of cells should have expected frequencies of 5 or more.

b) In the case of a 2 by 2 table, the expected frequency of at least 10 is recommended. Violation of this assumption requires the reporting using the Fisher's Exact Probability Test instead.

Based on the results generated by the SPSS, the assumptions were not violated (Bryman, 2015). This was verified based on the information provided in the footnote of the chi-square tests output. In all of the output, '0 cells (.0%) have expected count less than 5. The minimum expected count is…' were stated. Thus, this indicated that the chi-square assumptions were not violated, as all the expected cell sizes were greater than 5. All bivariate analysis presented in Chapter 5 show both the row and column percentages as well as the observed cell counts.

Multivariate technique

For the final statistical techniques used, the variables were examined through multivariate analysis, an analysis that simultaneously analyses the relationship of three or more variables with the outcome variable (Bryman, 2015). In this study, binary logistic regression models can be fitted. Such method allows for the use of outcome variables which are categorical (e.g. labour force participation) and will be performed to identify the significant predictors of the likelihood of older people's work participation after controlling for other variables.

Logistic regression is well suited to assessing the association between a categorical dependant variable and one or more categorical or continuous independent variables (Peng *et al.*, 2002). The dependant variable (labour participation) in this study is categorical with binary responses (No/Yes). Thus, when dichotomous outcome categories are assessed, the procedure is called binary logistic regression (Hosmer *et al.*, 2013; Meyers *et al.*, 2013). This study employs the binary regression analysis, as this method is the most suitable method for answering the research questions. Multiple linear regression is not suitable when dealing with categorical dependant variables (Pallant, 2016) and thus was not employed in this study. To recapitulate, the dependant variable in this study is dichotomous. The binary logistic outcome variable was entered into the analysis with "0= not currently working" and "1= currently working". All other predictors were categorical predictors with dummy coding (see Table 4.1).

The multiple logistic regression model is employed, as the model in this study uses more than one independent variable. By conducting multiple logistic regression, the chance of an outcome based on individual characteristics can be modelled (Sperandei, 2014). When extending the logic of the simple logistic regression to multiple predictors, the model of multiple logistic regression is as follows:

$$\text{Log}\left(\frac{\pi}{1-\pi}\right) = \text{logit}\,(\pi) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots + \beta_k X_k$$

In the model above, π is the probability of the event (probability of participating in the labour market). While Xs are a set of predictors, $\beta_1, \beta_2, \beta_k$ (the slopes) are regression coefficients attached to the predictors. The reference group is noted by β_0 (the intercept) which consist of older people representing the reference level of each variable of Xs. The percentage of variance in β_0 can be determined, which allows the researcher to identify the impact of the independent variables upon the resulting outcome.

There are two central consideration when applying multiple logistic models: estimating the coefficient and testing its significance (Hosmer *et al.*, 2013). In fitting the model, the method of estimating the variances and covariances of the estimated coefficients used is the maximum likelihood (ML) method. ML method is a computer intensive technique which maximises the likelihood of reproducing the data given the parameter estimates (Peng *et al.*, 2002; McDonald, 2014).

Once the logistic regression has been fitted, the model is then interpreted by using odds ratios Exp(B) as a measure of association. If the odds ratio appears to be greater than 1.0, it indicates an increased likelihood of the event occurring, and, in contrast, an odd ratio less than 1.0 indicates a decreased likelihood of the event occurring (Morgan and Teachman, 1988). The confidence intervals (95.0% CI for EXP(B)) of odds ratio displaying a lower value and an upper value imply the precision of the odds ratio value (Pallant, 2016), while the level of confidence can imply the significance of a result.

The test of statistical significance allows the researcher to estimate how confident he or she of the probability that the data from the separate groups of respondents come from one population (Bryman, 2015). To test the degree of confidence, the level of statistical significance is indicated by the P value, that is, the probability of rejecting the null hypothesis (H_0) when the null hypothesis (H_0) of the study is true. In this study, the pre-chosen probability of rejecting H_0 or the significance levels of $*p \leq .05$; $**p \leq .01$; $*** p \leq .001$ have been used based on the conventional practice (Bryman, 2015).

The selection of independent variables to be included in the regression model is one of the important tasks in statistical analysis (Sarkar *et al.*, 2010). There are a variety of methods which can be used to specify how the independent variables are selected into the regression model (Zellner *et al.*, 2004). In this study, the "ENTER" method in the SPSS was used to control how the independent variables are included in the logistic regression model in order to get the best subset of variables explaining the dependant variable. The "ENTER" method, also called "forced entry", is one of the procedures for selecting the variables where all explanatory variables in the specific block are entered into the model in a single step (Meyers *et al.*, 2013).

The selection process behind which explanatory variables were considered important was based on the findings of the literature review and the conceptual framework of this study. These findings led to the decision to specify entry method into specific blocks for the regression analysis. The method allows the flexibility to decide and control which variables to enter and the order of the variables in line with the researcher's appropriate knowledge of the theory, logic or practicalities of the situation. By going through the multiple regression selection process, the large set of predictors will become a smaller set due to the elimination of unnecessary variables of little significance and which do not contribute to the prediction (Sperandei, 2014). Thus, the researcher will obtain a more accurate prediction relying on both the meaningful selection of the predictor variables and their statistical significance (Stevens, 2009).

It is important to have the tools to test for lack of fit when fitting the logistic regression model (Goeman and Cessie, 2006). The goodness of fit gives the indication of how well the model performs (Meyers *et al.*, 2013; Pallant, 2016). It is important to first evaluate the overall performance of the model. The Omnibus Test of Model Coefficient contains the model chi-square and serves the purpose of informing how well the model performs overall (Gaur and Gaur, 2009). Significance value of less than .05 indicates that the model performs well (Pallant, 2016). There are other indexes provided by SPSS to evaluate how well the logistic regression model fits the data in this study. The Cox & Snell R Square and Nagelkerke R-Square give an approximation of the amount of variation in the dependant variable explained by the model with value ranges from a minimum value of 0 to a maximum value of 1 (Peng *et al.*, 2002). Apart from that, the Hosmer and Lemeshow Test indicates whether the predicted probabilities match the observed probabilities (Meyers *et al.*, 2013). A non-significant p value is desired as it suggests that the model fit the data well and fulfilled the goal of the research to derive predictors that will accurately predict the actual probabilities (Peng *et al.*, 2002; Meyers *et al.*, 2013).

Table 4-2 and 4-3 show the modelling strategies in which the selections of models are entered into the regression model. This model was built to examine the explanatory power of the exploratory variables which are associated to labour participation (see Section 3.3). The selection of variables to be entered and the order in which they were entered were guided by findings from the literature on older people's labour participation, where the most commonly identified factors associated with labour participation were identified and grouped accordingly into relevant groups (Giang and Le, 2015). The blocks were set according to the classification of each of the characteristics of the explanatory variables, namely Model 1= demographic, Model 2= health, Model 3= socio-economic, Model 4= geographic and Model 5= intergenerational support. The grouping of variables within specific categories was directly informed by the literature, for

example existing literature has categorised age and gender into demographic factors (Ling and Chi, 2008; Gwee and Fernandez, 2010).

The literature review also helped to inform the sequence of the variable entry in specific blocks into the regression model (Cronk, 2016; Pallant, 2016), based on their importance in relation to the topic of older people's labour market participation (Adhikari *et al.*, 2011). In general, demographic factors are identified in the literature as the most important factors associated with labour market participation, followed by other types of characteristics such as individuals' health status and socio-economic resources (Giang and Pfau, 2007; Adhikari *et al.*, 2011). The sequential modelling used in this study allowed the researcher to test the sensitivity of models in explaining the likelihood of a person participating in the labour market, through adding the set of variables in blocks (Hosmer *et al.*, 2013). This approach permitted the comparison of the findings of the preceding models (Models 1-4) and (Models 1-5) which enabled the researcher to better understand how the variables behaved as each set of variables was introduced into the regression.

For example, the introduction of health characteristics in Model 2 allowed the researcher to check whether the association between the variables in Model 1 and the outcome variable changes as a result of introducing health characteristics in Model 2. Previous studies have shown that factors associated to older people's labour participation were commonly examined independently rather than together, thus examining the characteristics in sequence using a multivariate analysis technique helps to identify gaps in the literature (Schofield *et al.*, 2008; Adhikari *et al.*, 2011; Dewilde, 2012). For example, Adhikari *et al.* (2011) introduced the variable ''sex of the respondent'' in Model 1 before more demographic and socio-economic variables were introduced in Model 2 in order to understand the factors associated with labour participation. Adhikari *et al.* (2011) also added health variables in Model 3 where the effects of demographic, socio-economic and health behaviour variables on labour participation were observed. This technique enhances the researcher's insights into which characteristics show an independent association with labour participation and how they are affected by other characteristics introduced in the analysis (Chowdhury, 2013).

Specifically, the variable selection in Table 4-2 aims at answering research questions 1 and 2 of this study:

1) What are the demographic, health, socio-economic and geographical characteristics that are associated with the labour participation of older people?
2) To what extent is older people's co-residence with their adult children associated with older people's labour participation?

The predictors were grouped into four blocks indicated by Model 1 (Demographic characteristics), Model 2 (Health characteristics), Model 3 (Socio-economic characteristics) and Model 4 (Geographical characteristics). Each block was entered separately. Any variables that were not significant were removed from the model. For example, co-residence indicated in red, was a variable not significant in the analysis.

Table 4-2: Modelling strategy (1)

Model 1	Model 2	Model 3	Model 4
Constant **Demographic Characteristics** Age Gender Marital Status Ethnicity Co-residence	Constant **Demographic Characteristics** Age Gender Marital Status Ethnicity Co-residence	Constant **Demographic Characteristics** Age Gender Marital Status Ethnicity Co-residence	Constant **Demographic Characteristics** Age Gender Marital Status Ethnicity Co-residence
	Health characteristics No. of health problems No. of difficulties with ADLs	**Health characteristics** No. of health problems No. of difficulties with ADLs	**Health characteristics** No. of health problems No. of difficulties with ADLs
		Socio-economic characteristics Education No. of income sources	**Socio-economic characteristics** Education No. of income sources
			Geographical characteristics Region Place of residence
Omnibus Test			
Cox & Snell R2			
Nagelkerke R2			

Source: Author's own interpretation

On the other hand, modelling strategy (2), shown in Table 4-3, demonstrates how the variables were selected for entrance into the model which aims to answer research questions 3 and 4 of this study:

1) To what extent is the intergenerational support ***received*** by older people from their adult children and its frequency associated with the labour participation of older people?
2) To what extent is the intergenerational support ***provided*** by older people to their adult children and its frequency associated with the labour participation of older people?

The selection process here is similar to that conducted in modelling strategy (1); however, an additional block was entered in modelling strategy (2). Five blocks were introduced, indicated by Model 1, Model 2, Model 3, and Model 4 as before and the addition of Model 5 (Intergenerational support characteristics). It is worth noting that intergenerational support consists of seven types, namely cash, bill payment, meals and other basic needs, household chores, personal care, listening to problems and accompanying to places required. All receipt and provision of support and its frequency were separately analysed according to their types of support. Each type of support and its frequency was entered in the blue box indicated in Block 5 of Table 4.3 for separate analysis. Receipt and frequency (Cash) in the blue cell is shown as an example when analysing the receipt of cash assistance by older people from their adult children and its frequency associated with the labour participation.

Table 4-3: Modelling strategy (2)

Model 1	Model 2	Model 3	Model 4	Model 5
Constant	Constant	Constant	Constant	Constant
Demographic Characteristics Age Gender Marital Status Ethnicity Co-residence	**Demographic Characteristics** Age Gender Marital Status Ethnicity Co-residence	**Demographic Characteristics** Age Gender Marital Status Ethnicity Co-residence	**Demographic Characteristics** Age Gender Marital Status Ethnicity Co-residence	**Demographic Characteristics** Age Gender Marital Status Ethnicity Co-residence
	Health characteristics No. of health problems No. of difficulties with ADLs	**Health characteristics** No. of health problems No. of difficulties with ADLs	**Health characteristics** No. of health problems No. of difficulties with ADLs	**Health characteristics** No. of health problems No. of difficulties with ADLs
		Socio-economic characteristics Education No. of income sources	**Socio-economic characteristics** Education No. of income sources	**Socio-economic characteristics** Education No. of income sources
			Geographical characteristics Region Place of residence	**Geographical characteristics** Region Place of residence
				Intergenerational Support * Receipt and frequency (Cash)
Omnibus Test				
Cox & Snell R^2				
Nagelkerke R^2				

Source: Author's own interpretation

Overall, the use of univariate, bivariate and multivariate analyses in this study helped to create a robust contribution of evidence, allowing a better understanding of the characteristics associated with the labour participation of older people. The usages of the various statistical techniques and methods in this study are summarised in Table 4-4.

Table 4-4: Statistical techniques and methods.

	Research questions	**Variables**	**Statistical techniques /methods**
1.	What are the demographic, health, socio-economics and geographical characteristics that are associated with the labour participation of older people?	*Dependent variable:* Older people's labour participation *Explanatory variables:* Demographic variables: Age, gender, marital status, ethnicity. Health variables: Number of health problems, number of difficulties with ADLs. Socio-economic variables: Highest education attainment, number of income sources. Geographic variables: Place of residence, region.	*Univariate analysis*: Descriptive analysis through frequency and percentages *Bivariate analysis*: Chi-square test to test the association between variables *Multivariate analysis:* Logistic regression
2	To what extent is older people's co-residence with their adult children associated with older people's labour participation?	*Dependent variable:* Older people's labour participation *Explanatory variables:* Co-residence status	*Univariate analysis*: Descriptive analysis through frequency and percentages *Bivariate analysis*: Chi-square test to test the association between variables *Multivariate analysis:* Logistic regression
3	To what extent is the intergenerational support ***received*** by older people from their adult children and its frequency associated with the labour participation of older people?	*Dependent variable:* Older people's labour participation *Explanatory variables:* Receipt of support by older people from their adult children and its frequency	*Bivariate analysis*: Chi-square test to test the association between variables *Multivariate analysis:* Logistic regression
4	To what extent is the intergenerational support ***provided*** by older people to their adult children and its frequency associated with the labour participation of older people?	*Dependent variable:* Older people's labour participation *Explanatory variable:* Provision of support from older people to their adult children and its frequency	*Bivariate analysis*: Chi-square test to test the association between variables *Multivariate analysis:* Logistic regression

Source: Author's own interpretation

4.5 Ethical considerations

Researchers should consider any ethical concerns as they design a study, as they have a moral and professional obligation to be ethical in dealing with the concerns, dilemmas and conflicts that

arise in conducting research (Neuman, 2006). Hence, in line with the research ethics and professional integrity of the University of Southampton, the Ethics form and the Risk Assessment form were submitted prior to commencing the research through the Ethics and Research Governance Online (ERGO). University of Southampton and institutional approval was obtained on 9th December 2015 as indicated in the ERGO confirmation email attached in Appendix B.

As this study uses secondary survey data obtained from the 5th Malaysian Population and Family Survey 2014 the participants are the respondents of this nationally representative survey. The secondary data to be used is anonymised by the survey team and care has been taken by the data providers to ensure that the individuals are not identifiable (National Population and Family Development Board, 2016).

In maintaining the privacy and confidentiality of the respondents' information, the data and the confidential information obtained from the datasets are only used for appropriate study purposes. After the completion of this study, the researcher will ensure that the data will be deleted from their own file storage in order to prevent unauthorised use of this data. The ERGO forms can be found in **Appendix B.**

4.6 Chapter summary

This chapter has discussed the research approach applied in this study. This study adopts a quantitative research approach and the nature of the quantitative analysis has been outlined. In terms of the research design, this study uses a cross-sectional research design. This enables investigation into the prevalence of labour participation among older people at one point in time and the detection of patterns of association between intergenerational transfers and co-residence on the one hand and labour market participation on the other (Bryman, 2015). Secondary data analysis was used in this study, employing data from the Malaysian Population and Family Survey 2014 (MPFS-5). Besides information on the demographic and socio-economic profiles of older people in Malaysia, this dataset provides information on the types and frequency of support in both directions: assistance from adult children to older parents and vice-versa. The dependent and explanatory variables selected are based on the conceptual framework presented in Chapter 3 and were discussed in this chapter. The statistical techniques are also explained. Ethical considerations are also an important aspect of the research which was discussed to ensure the conduct of this research is in line with the research ethics and professional integrity of the university (Kumar, 2014). In the next chapter, the analysis derived from the dataset is presented.

Chapter 5: Univariate and bivariate results

5.1 Introduction

This chapter provides an overview of Malaysian older people's demographic and socio-economic characteristics and the association between a range of individual factors and older people's participation in the labour market. As mentioned previously in Chapter 4, univariate and bivariate analysis are employed to identify such associations, using chi-square test which is demonstrated in this chapter.

To begin with, Section 5.2 discusses the profile of older people' demographic, health, socio-economic, geographical and intergenerational support characteristics based on the MPFS-5 dataset. In Section 5.3, older people's current work status is explored. Section 5.4 discusses the bivariate analysis where the association between demographic, health, socio-economic, geographical and intergenerational support characteristics were analysed by labour participation. The discussion offers an important view of the factors that are associated with labour force participation among older people. Section 5.5 summarizes the chapter.

5.2 Profile of respondents: Demographic, health, socio-economic, geographic and intergenerational support characteristics

5.2.1 Demographic profile

A total number of 4,059 respondents were involved in the MPFS-5. The table below shows the demographic profile of this study. Referring to the issue of weighting (see section 4.3.1) the percentages that appear in the descriptive results were based on an unweighted analysis.

Table 5-1: Frequency distribution of demographic profile

Demographic Variables	Frequency	Percentage (%)	Total (n)
Age			
60-64	1,581	39	
65-69	131	27.9	4,059
70-74	705	17.4	
75 and above	642	15.8	
Gender			
Male	1,833	45.2	4,059
Female	2,226	54.8	
Marital status			
Never married	101	2.5	
Married	2,725	67.1	4,059
Widowed	1,153	28.4	
Divorced/separated	80	2.0	
Ethnicity			
Malay	2,614	64.4	
Chinese	732	18.0	4,059
Indian	282	6.9	
Others	431	10.6	
Co-residence			
No co-residence with an adult child	1,579	38.9	
Co-reside with at least one child	2,245	55.3	4,059
Childless	235	5.80	

Source: Author's analysis of MPFS-5, 2014

In terms of the gender of the sampled respondents, the data shows that gender is fairly well distributed, with a slightly higher proportion of females (55 percent) compared to males (45 percent). This is partly due to the fact that the average life expectancy for females is higher than their counterparts (Department of Statistics Malaysia, 2015a). As indicated previously in Chapter 2, the average life expectancy of males was 72.5 and females 77.4 in 2015. Among the sample, the youngest respondent was 60 years old whereas the oldest was 108 years old.

As Malaysians live in an ethnically plural society, ethnicity plays an important role in the formulation of many social policies as each ethnicity has its own distinct demographic features and culture (Govindasamy and Davanzo, 1992; Chan *et al.*, 2010a; Lim, 2012). Differences in the culture and the unique characteristics in the origin of different communities have a significant influence on the experience of ageing in Malaysia (Chan *et al.*, 2010a; Lim, 2012). Table 5-1 also shows the four dominant ethnic groups in Malaysia. Almost two-thirds of the respondents (64 percent) belong to the Malay ethnic group, which is the largest ethnic group in the sample population. This is followed by the Chinese (18 percent) and the other (17 percent) groups. The Indian group is the smallest ethnic group with a proportion of around 7 percent.

Table 5-2: Percentage distribution of older Malaysians by age and gender

Age Group	Gender		Total
	Male	Female	
60-64	43.5% 37.5%	56.6% 40.1%	100% (1,581) 39.0%
65-69	47.8% 29.5%	52.2% 26.5%	100% (1,131) 27.9%
70-74	47.1% 18.1%	52.9% 16.8%	100% (705) 17.4%
75 and above	42.4% 14.8%	57.6% 16.6%	100% (642) 15.8%
Total	45.2% 100% (1,833)	54.8% 100% (2,226)	100% 100% (4,059)

$P < 0.05$, $\chi^2=8.073$, n = 4,059
Source: Author's analysis of MPFS-5, 2014

Table 5-2 shows the distribution of the 4 age groups by gender. The Pearson Chi-Square test showed a significant p-value <0.05, indicating a significant association between age and gender. Among individuals aged 65–69, 52 percent were female, compared to the 70–74 age group, of which also 52 percent were female. Results found that women were over-presented in the age group of 60–64, and under-presented in the age group of 75 and over. Among females, 40 percent were aged between 60–64 while only 17 percent were aged 75 and above.

Marital status is an important factor affecting the well-being of older people in the population (Lim, 2012). Table 5-3 shows that more than two-thirds of older Malaysians were married (67 percent), while 28 percent were widowed.

Table 5-3: Percentage distribution of individuals by gender and marital status.

	Gender		Total
	Male	Female	
Single never married	36.6% 2.0%	63.4% 2.9%	100% (101) 2.5%
Married	59.5% 88.5%	40.5% 49.6%	100% (2,725) 67.1%
Widowed	14.1% 8.8%	85.9% 44.5%	100% (1,153) 28.4%
Divorced/ Separated	15% 0.7%	85% 3.1%	100% (80) 2.0%
Total	45.2% 100% (1,833)	54.8% 100% (2,226)	100% 100% (4,059)

$P < 0.001$, $\chi^2=709.916$, n= 4,059
Source: Author's analysis of MPFS-5, 2014

Some gender variations were observed in the patterns of marital status, and the association between gender and marital status was highly significant ($p < 0.001$). It is evident that among

widowed persons, about 86 percent were female and less than one-fifth (14 percent) were male. Similar to the pattern observed across many societies, and in line with evidence published by the Department of Statistics Malaysia (2015a), females have a higher life expectancy compared to males, which explains why females tend to marry older males (Shahar *et al.*, 2001; Lim, 2012). Higher life expectancy among females also suggest that many will outlive their spouses (Hamid, 2015). Among older Malaysians who were divorced/ separated, a large majority were female (85 percent) and less than one-fifth were male (15 percent). Among older males, 88 percent were married and only 0.7 percent were divorced/ separated. This indicates that widowed older women are less likely than older men to remarry, similar to previous study by Shahar *et al.* (2001) conducted among rural Malays in Malaysia.

5.2.2 Health profile of respondents

The health characteristics among respondents through the number of health problems and their ability to perform daily tasks are important indicators to consider in this study. The table below shows the frequency distribution of health characteristics among the respondents.

Table 5-4: Frequency distribution of health characteristics of the respondents.

Variables	Frequency	Percentage (%)	Total (n)
Health characteristics			
Number of health problems			
No health problems	977	24.6	
1 health problem	1,185	29.8	3,973
2 health problems	891	22.4	
3 or more health problems	920	23.2	
Number of difficulties performing ADLs			
No difficulties in ADLs	2,789	69.1	
Difficulties in 1 ADL	522	12.9	4,035
Difficulties in 2 ADLs	260	6.4	
Difficulties in 3 or more ADLs	464	11.5	

Source: Author's analysis of MPFS-5, 2014

In this study, the number of health problems are divided into four categories; no health problem, 1 health problem, 2 health problems and 3 or more health problems. As illustrated in the preliminary analysis in Table 5-4, the largest percentage of the respondents (30 percent) reported 1 health problem. About 24 percent of the respondents reported having no health problem, followed by 23 percent who reported 3 or more health problems.

In terms of the number of difficulties performing ADLs, more than two-thirds (69 percent) of the respondents were able to perform ADLs, while only 11 percent reported having difficulties performing ADLs as shown in Table 5-4.

Table 5-5: Percentage distribution of individuals by number of health problems and age groups

	Health Status				Total
	No Health Problems	1 health problem	2 health problems	3 or more health problems	
60–64 years old	27.5%	30.6%	21.4%	20.5%	100% (1,554)
	43.7%	40.1%	37.4%	34.7%	39.1%
65–69 years old	23.7%	28.6%	23.2%	24.5%	100% (1,105)
	26.8%	26.7%	28.7%	29.5%	27.8%
70–74 years old	22.5%	28.8%	24.9%	23.8%	100% (692)
	16.0%	16.8%	19.3%	17.9%	17.4%
75 years old and above	21.2%	31.4%	20.9%	26.5%	100% (622)
	13.5%	16.5%	14.6%	17.9%	15.7%
Total	24.6%	29.8%	22.4%	23.2%	100%
	100% (977)	100% (1,185)	100% (891)	100% (920)	100% (3,973)

$P < 0.05$, $\chi^2=23.411$, n=3,973

Source: Author's analysis of MPFS-5, 2014

The association between the number of health problems and age was found to be statistically significant at the $p < 0.05$ level as indicated in Table 5-5. Among older people aged 60-64, more than a quarter (28 percent) reported no health problem while a fifth reported 3 or more health problems (21 percent). Among people aged 75 years and above, 21 percent reported no health problem and 27 percent were reported with 3 or more health problems. Among those who reported no health problem, 44 percent were aged between 60-64 years, while 13.5 percent were 75 years old and above. These findings show that older people tend to report more health problems as age increases.

5.2.3 Socio-economic profile of respondents

The socio-economic profile of the respondents was also explored in this study. Two main socio-economic characteristics are shown below.

Table 5-6: Frequency distribution for socio-economic characteristics of the respondents.

Variables	Frequency	Percentage (%)	Total (n)
Socio-economic characteristics			
Highest education attainment			
No formal education	806	19.9	
Pre-school and Primary education	2,033	50.1	4,059
Secondary education	1,001	24.7	
Post-secondary and higher education	219	5.4	
Number of income sources			
No income source	200	4.9	
1 income source	2631	64.8	4,059
2 or more income sources	1228	30.3	

Source: Author's analysis of MPFS-5, 2014

In terms of education, Table 5-6 shows that about half of respondents had only preschool and primary level education (50 percent). One-quarter of the respondents (25 percent) had attained secondary education and one-fifth (20 percent) had no formal education. A small minority of the respondents (5 percent) had received post-secondary and higher education. This finding indicates that generally older people in Malaysia have a low level of education.

Another socio-economic characteristic is the number of income sources among respondents. As indicated in Table 5-6, two-thirds of the respondents reported having 1 income source (65 percent), while 30 percent of respondents have 2 or more income sources. These findings indicated that the majority of the respondents have only 1 income source.

Table 5-7: Percentage distribution of individuals by gender and highest education attainment.

	Gender		**Total**
	Male	Female	
No formal education	19.4%	80.6%	100% (806)
	8.5%	29.2%	19.9%
Pre-school/Primary education	46.6%	53.4%	100% (2,033)
	51.7%	48.8%	50.1%
Secondary Education	57.3%	42.7%	100% (1,001)
	31.3%	19.2%	24.7%
Post-Secondary/ Higher education	71.2%	28.8%	100% (219)
	8.5%	2.8%	5.4%
Total	45.2%	54.8%	100%
	100% (1,833)	100% (2,226)	100% (4,059)

$P < 0.001$, $\chi^2=338.481$, n=4,059
Source: Author's analysis of MPFS-5, 2014

Comparing the two genders, males were more likely to have schooling compared to their female counterparts ($p < 0.001$). As indicated in Table 5-7, among individuals with no formal education, about 81 percent were female and only 20 percent were male. On the other hand, among

individuals who had attained post-secondary/ higher education, a significant proportion (71 percent) were male and less than a third were female (29 percent). Among females, 29 percent have no formal education while only 3 percent had attained post-secondary or higher education.

Turning to the highest education attainment among older Malaysians by age, the result was significant at the $p < 0.001$ level as indicated in Table 5-8.

Table 5-8: Percentage distribution of individuals by age and highest education attainment

	Highest Education Attainment				
	No formal education	Pre-school/ Primary education	Secondary education	Post-secondary/ Higher education	**Total**
60–64 years old	11.8% 23.2%	46.9% 36.5%	34.0% 53.6%	7.3% 52.5%	100% (1,581) 39.0%
65–69 years old	15.3% 21.5%	53.1% 29.5%	26.3% 29.7%	5.4% 27.9%	100% (1,131) 27.9%
70–74 years old	25.8% 22.6%	55.0% 19.1%	15.7% 11.1%	3.4% 11.0%	100% (705) 17.4%
75 years old and over	41.1% 32.8%	47.2% 14.9%	8.7% 5.6%	3.0% 8.7%	100% (642) 15.8%
Total	19.9% 100% (806)	50.1% 100% (2,033)	24.7% 100% (1,001)	5.4% 100% (219)	100% 100% (4,059)

$P<0.001$, $\chi^2=399.732$, n=4059

Source: Author's analysis of MPFS-5, 2014

Apparently, among persons aged 75 years and over, the majority had attained Pre-school/ primary education (47 percent) and about two-fifths had no formal education (41 percent). Only a small percentage had attained secondary education (8.7 percent). Among people aged 60-64, 47 percent had attained Pre-school/ primary education and 34 percent had reached secondary education with only 12 percent having no formal education. Among older people who had attained post-secondary/ higher education, 53 percent were aged between 60-64, while only 8.7 percent were aged 75 years and above. Such findings reflect the fact that younger cohorts of individuals are more likely to be educated (Ministry of Women and Family Development, 2003).

5.2.4 Geographic profile of respondents

Two indicators were used to indicate geographical characteristics; region and place of residence. Table 5-9 below shows the geographical profile of the respondents.

Table 5-9: Frequency distribution of geographical characteristics of the respondents.

Variables	Frequency	Percentage (%)	Total (n)
Geographical characteristics			
Region			
Southern region	1,052	25.9	
Central region	559	13.8	
Northern region	1,027	25.3	4,059
East Coast region	710	17.5	
Sabah, Sarawak and Labuan	711	17.5	
Place of residence			
Urban	2,219	54.7	4,059
Rural	1,840	45.3	

Source: Author's analysis of MPFS-5, 2014

Looking at the geographical location of the respondents, this study categorises the states into 5 regions: Northern region (Kedah, Penang, Perak and Perlis), Central region (Kuala Lumpur, Selangor, Negeri Sembilan and Putrajaya), Southern region (Melaka and Johor), East Coast region (Pahang, Terengganu and Kelantan) located in West Malaysia, and finally Sabah, Sarawak and Labuan which are located in East Malaysia. As shown in Table 5-9, the geographical distribution of the respondents was quite even, with a slightly higher percentage of sampled respondents (25 percent) residing in the Northern region and Southern region (26 percent).

The distribution of the place of residence of the respondents was also fairly even with a slightly higher percentage of individuals residing in urban areas. As depicted in Table 5-9, more than half of the respondents (55 percent) resided in urban areas while 45 percent of the respondents resided in rural areas.

Table 5-10: Percentage distribution of individuals by ethnic group and place of residence

	Place of residence		Total
	Urban	Rural	
Malays	47.9%	52.1%	100% (2,614)
	56.5%	74.0%	64.4%
Chinese	80.1%	19.9%	100% (732)
	26.4%	7.9%	18.0%
Indian	87.6%	12.4%	100% (282)
	11.1%	1.9%	6.9%
Others	30.9%	69.1%	100% (431)
	6.0%	16.2%	10.6%
Total	54.7%	45.3%	100%
	100% (2,219)	100% (1,840)	100% (4,059)

$P < 0.001$, $\chi^2=460.109$, N = 4,059

Source: Author's analysis of MPFS-5, 2014

Examining whether there are significant associations between individuals' place of residence and their ethnic group, the Chi-Square test showed a p-value < 0.001. As indicated in Table 5-10, among older Malays, around 52 percent resided in rural areas and 48 percent in urban areas.

Comparatively, among older Chinese individuals, about four-fifths resided in urban areas (80 percent) with only one-fifth residing in rural areas (20 percent). Similarly, a very large majority of older Indians resided in urban areas (88 percent) compared to less than one-fifth who resided in rural areas. Among other ethnic background, more than two-thirds reside in rural areas. Among older people residing in rural areas, 74 percent were from a Malay background, followed by 16 percent from other ethnic backgrounds. Thus, in general, the majority of Malays and individuals with other ethnicity background resides in rural areas.

5.2.5 Intergenerational support characteristics

In terms of intergenerational support, two types of characteristics are explored. Firstly, is the receipt of support by older people from adult children and its frequency, and second is the provision of support from older people to adult children and its frequency. The types of support are cash, bill payment, meals and basic needs, household chores, personal care, listening to problems and accompanying one's parent to places.

Receipt of support by older people from adult children and its frequency

Table 5-11: Frequency distribution of receipt of support by respondents from adult children and its frequency

Variables	Frequency	Percentage (%)	Total (n)
Intergenerational support characteristics: ***Receipt*** *of support by older people adult children and its frequency*			
Cash			
Never	778	19.2	
At least once in a few months	1,025	25.3	4,048
At least once a month	2,010	49.7	
No children	235	5.8	
Bill Payment			
Never	2,025	50.0	
At least once in a few months	227	5.6	4,046
At least once a month	1,559	38.5	
No children	235	5.8	
Meals and other basic needs			
Never	1,218	30.2	
At least once in a few months	619	15.4	4,027
At least once a month	1,955	48.5	
No children	235	5.8	
Household chores			
Never	1,341	33.3	
At least once in a few months	577	14.3	4,025
At least once a month	1,872	46.5	
No children	235	5.8	
Personal care			
Never	1,449	36.0	
At least once in a few months	823	20.5	4,024
At least once a month	1,517	37.7	
No children	235	5.8	
Listening to parents personal problems			
Never	1,673	41.4	
At least once in a few months	933	23.1	4,038
At least once a month	1,197	29.6	
No children	235	5.8	
Accompany parents to required places			
Never	1,110	27.5	
At least once in a few months	1,199	29.7	4,041
At least once a month	1,497	37.0	
No children	235	5.8	

Source: Author's analysis of MPFS-5, 2014

The table above shows the patterns of receipt of support by older people from adult children and its frequency. As depicted in Table 5.11, the majority of older people received support from adult children at least once a month in terms of cash, meals and other basic needs, household chores, personal care, and accompanying their parents to places. The majority of older people never

receive any assistance from adult children in terms of bill payment and listening to their problem. Generally, these findings indicate that older people rely on their adult children for most types of support.

Provision of support from older people to adult children and its frequency.

Table 5-12: Frequency distribution of provision of support by respondents to adult children and their frequency

Variables	Frequency	Percentage (%)	Total (n)
Intergenerational support characteristics: ***Provision*** *of support by respondents from adult children and its frequency*			
Cash			
Never	2,681	66.3	
At least once in a few months	692	17.1	4,041
At least once a month	433	10.7	
No children	235	5.8	
Bill Payment			
Never	3,469	85.6	
At least once in a few months	101	2.5	4,046
At least once a month	248	6.1	
No children	235	5.8	
Meals and other basic needs			
Never	2,441	60.6	
At least once in a few months	405	10.0	4,030
At least once a month	949	23.5	
No children	235	5.8	
Household chores			
Never	2,654	65.8	
At least once in a few months	281	7.0	4,034
At least once a month	864	21.4	
No children	235	5.8	
Personal care			
Never	2,465	61.2	
At least once in a few months	404	10.0	4,024
At least once a month	924	22.9	
No children	235	5.8	
Listening to children's personal problems			
Never	2,158	53.6	
At least once in a few months	855	22.0	4,027
At least once a month	749	18.6	
No children	235	5.8	
Accompany adult children to required places			
Never	2,904	71.9	
At least once in a few months	495	12.3	4,037
At least once a month	403	10.0	
No children	235	5.8	

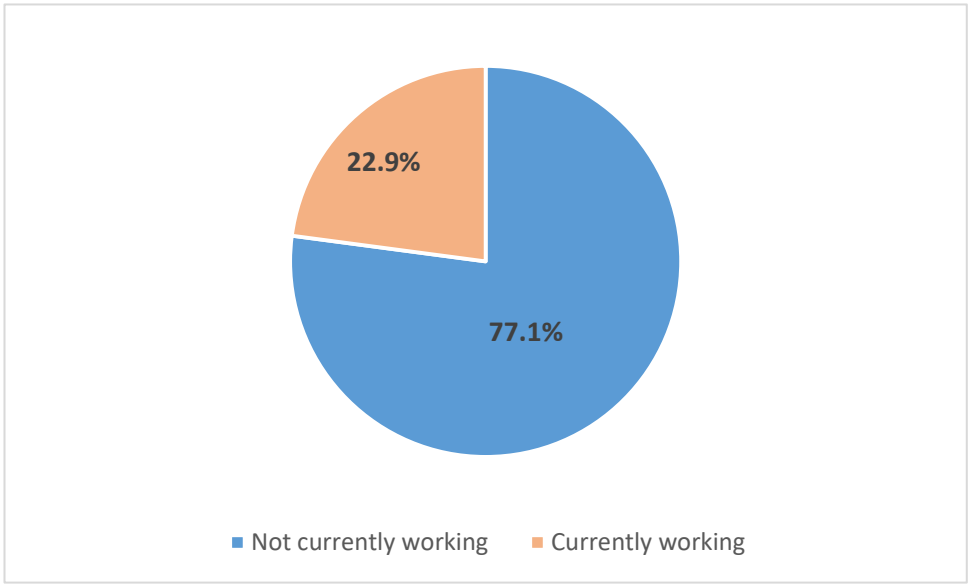
Source: Author's analysis of MPFS-5, 2014

Table 5.12 shows the patterns of provision of support by respondents to adult children and their frequency. As depicted from the table, the majority of older people never provides support to their adult children in terms of cash, bill payment, meals and other basic needs, household chores, personal care, listening to adult children's problem and accompanying their adult children to places. These findings indicate that in general, adult children do not rely on their older parents for support. The percentage of adult children relying on their parents at least once a month in terms of meals and other basic needs, household chores and being listened to is higher relative to other types of support. These findings can offer a valuable insight of the role of intergenerational support with labour participation as the next section progresses into describing the labour market characteristics of older people.

5.3 Labour market characteristics of older people

Before examining the association between demographic, socio-economic, health, geographical and intergenerational support characteristics with older people's labour force participation, this section utilises the collected information to analyse the current characteristics of labour participation of older people. It provides a general idea in explaining older people who are (1) currently working in the labour market, (2) not currently working in the labour market but had worked before, (3) not currently working in the labour market and had never worked before. Such information portrays the diverse situation of older people with respect to their participation in the labour market and provide some understanding of why do some older people are on the labour market and some do not. As mentioned earlier, the total respondents in the survey are 4,095.

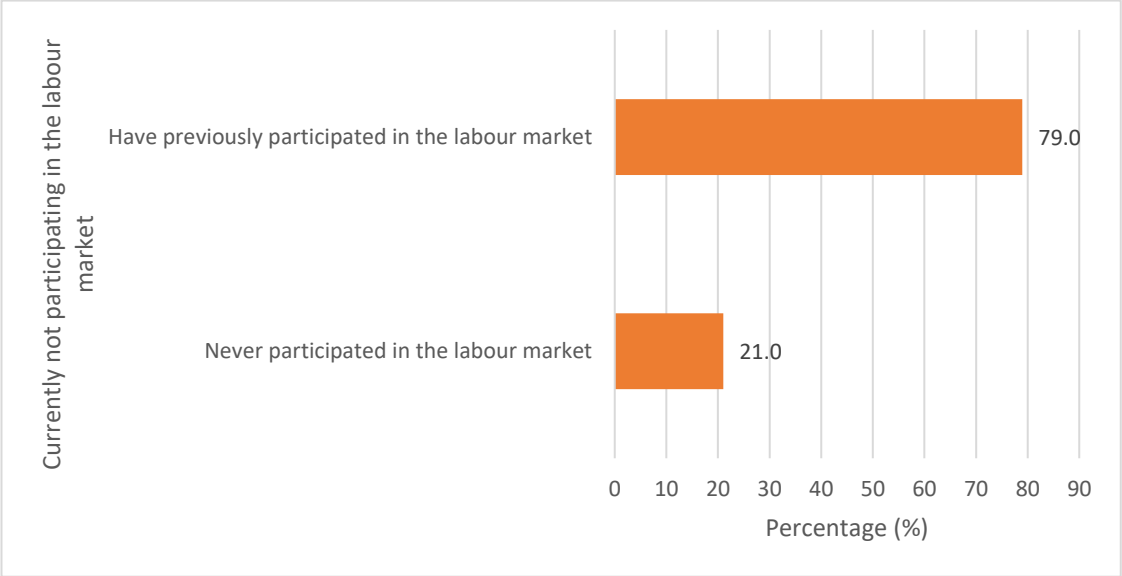
Figure 5-1: Percentage distribution of individuals by working status



Source: Author's analysis of MPFS-5, 2014

The figure above shows the percentage distribution of working status among older people. As depicted in Figure 5-1, 77 percent (n= 3,129) of the respondents were not currently working and less than a quarter were currently working (23 percent or n= 930).

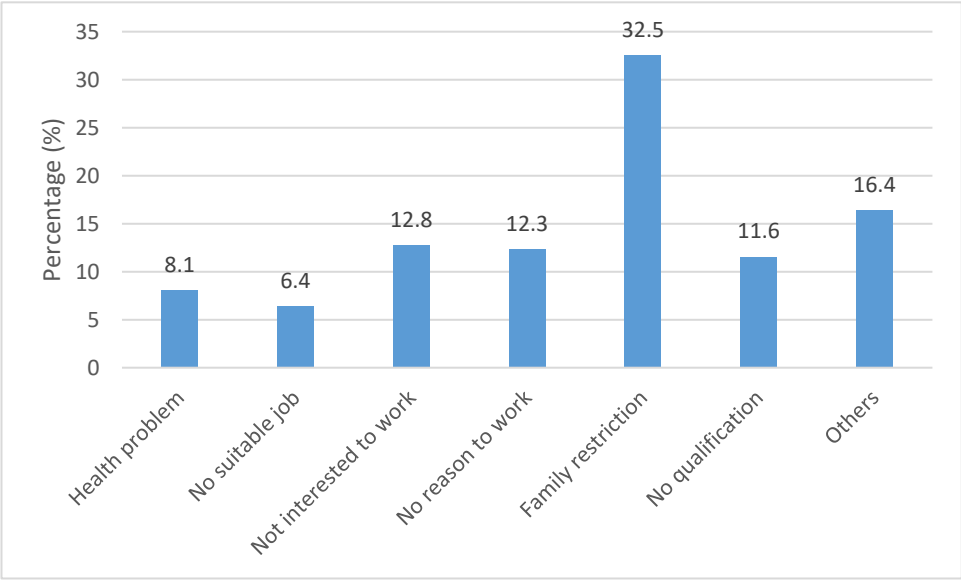
Figure 5-2: Percentage distribution of previous work status among individuals who are currently not working.



Source: Author's analysis of MPFS-5, 2014

Figure 5-2 shows the percentage distribution of previous work status among older people who are currently not working. Among those who are currently not working, 2,471 respondents (79 percent) had participated in the labour market before, while 658 respondents (21 percent) had not.

Figure 5-3: Percentage distribution of the reasons why individuals never participated in the labour market before

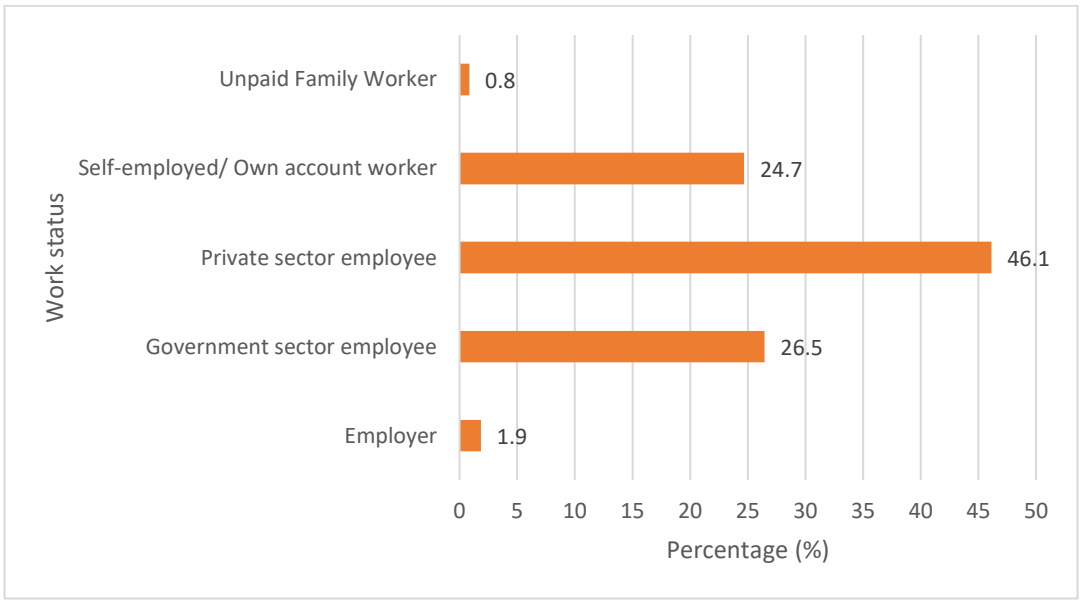


Source: Author's analysis of MPFS-5, 2014

From the 658 respondents who are currently not working and had never participated in the labour market, most respondents reported that the reasons for not working were due to family restrictions. As depicted in Figure 5-3, among older people who never participated in the labour market before, 32.5 percent reported family restrictions as the reasons for not working, followed by 16.4 percent who had other reasons, and those who were not interested to work who totalled 12.8 percent. The remaining reasons are no reasons to work, no qualification, health problem and not finding a suitable job.

The types of previous work among respondents who were currently not in the labour market but had been working before were also analysed.

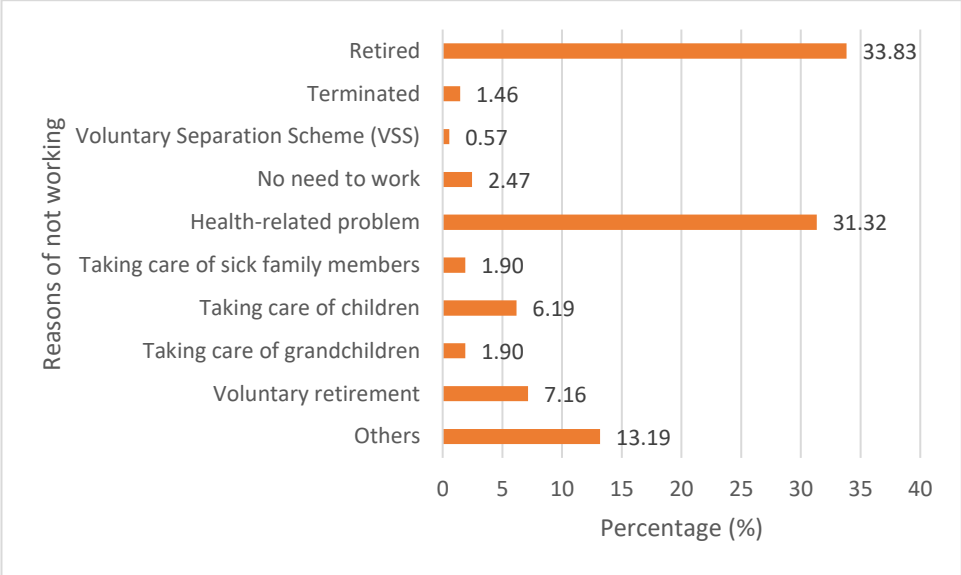
Figure 5-4: Percentage distribution of previous work among respondent who are currently not working but have worked before.



Source: Author's analysis of MPFS-5, 2014

The figure above provides information about the previous job among older people who are currently not working in the labour market but had been working before. As shown in Figure 5-4, the majority of the older people had been working as an employee in the private sector which accounted for 46 percent (n=1,140), followed by employees in the government sector which accounted for 27 percent (n=654) before exiting the labour market. Working in those types of sectors is subjected to the retirement age may explain why reaching the retirement age was the reason among older people exiting the labour market as indicated in Figure 5-5.

Figure 5-5: Percentage distribution of the reasons to stop working among respondent who are currently not working but have worked before

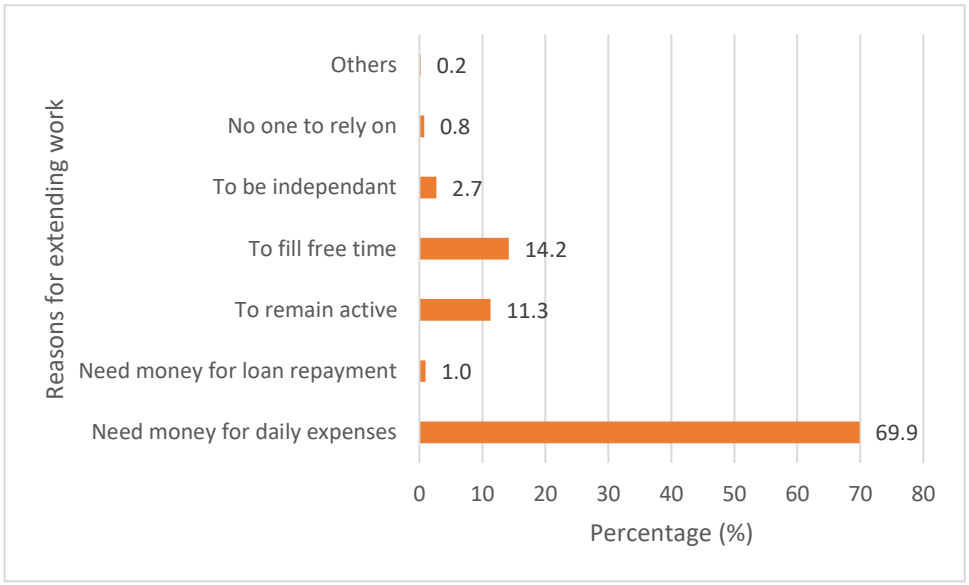


Source: Author's analysis of MPFS-5, 2014

Figure 5-5 shows the percentage distribution of the reason exiting labour market among older people who are currently not in the labour market but had been working before in the labour market. From the 2,471 respondents, reaching retirement age was the highest reasons for exiting the labour market which accounted for 34 percent. It is clear from the figure that health related problems which accounted for 31 percent was the second highest reason for exiting labour market among older people.

Now turning to respondents that are currently working, questions were asked pertaining to the main factor that motivated them to continue working.

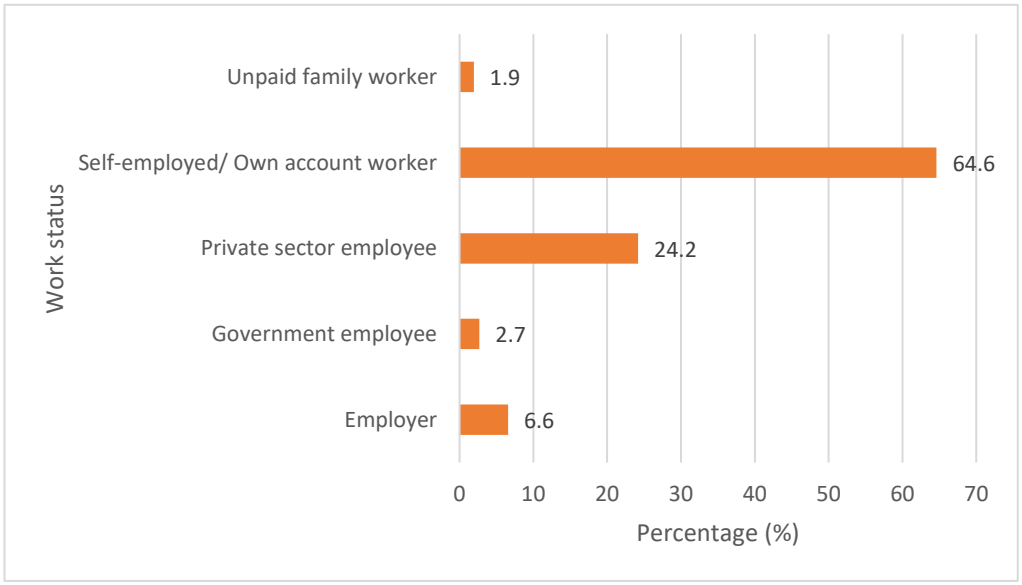
Figure 5-6: Percentage distribution of the reasons for continuing to work among respondents currently working.



Source: Author's analysis of MPFS-5, 2014

Figure 5-6 illustrates the reasons which motivates continued participation among older people in the labour market among those who are currently working. It is clear that 70 percent among older people continue to participate in the labour market due to their financial needs to cover their daily expenses.

Figure 5-7: Percentage distribution of current work among respondents currently working



Source: Author's analysis of MPFS-5, 2014

Figure 5-7 shows the types of work among older people currently working. Self-employment which accounted for 65 percent was the most common type of job reported among older people. This was followed by being a private sector employee with 24 percent.

5.4 Bivariate results

Older people's labour participation varied according to different demographic, health, socio-economic, and geographical characteristics. Bivariate analysis is carried out to examine how such characteristics are associated with labour force participation.

5.4.1 Demographic characteristics of older people according to labour participation

The first demographic variable of interest was age. As shown in Table 5-13, labour force participation diminished significantly with age ($p<0.001$). Among those aged 60-64 years old, 30 percent were still working while only one in ten (10 percent) among persons aged 75 and above were in the workforce. In terms of gender, a wide variation between males and females was observed pertaining to labour market participation, which was significant at the $p < 0.001$ level. As anticipated, a higher proportion of males were currently working compared to females. Among those who were currently working, 67 percent were males, while only 33 percent were females. The association between marital status and labour force participation was found to be statistically significant at $p < 0.001$ level. About 87 percent of widowed older persons were not in the labour market while 34 percent single never married individuals reported currently working. Among those who were currently in the labour market, the majority were married (78 percent).

Turning to the association between ethnicity and the labour market participation, the result was statistically significant at $p < 0.001$ level. Noticeably, a higher proportion of respondents from other ethnic groups were engaged in the labour market than their counterparts. However, comparing between the three major ethnic groups, Chinese persons were found to be more likely to be currently in the labour market compared to Malay and Indian persons. Among older people who were currently working, 61 percent were Malays, followed by other ethnic backgrounds (16 percent), and by having a Chinese (20 percent) and Indian (4 percent) background.

Co-residence was another demographic characteristic of interest and its association with labour force participation was significant at $p < 0.01$ level. Older people who do not co-reside were not likely to be in the labour market. Similarly, among older people who co-reside with at least one adult child, 77 percent were not currently in the labour market while only 23 percent were reported currently working. Among those who were currently working, the majority had at least one child co-residing with them (55 percent).

Table 5-13: Demographic characteristics of older Malaysians by labour participation

Characteristics	Currently working in the labour market		
	No (%)	Yes (%)	Total (%)
Age* **			
60-64 years old	69.9	30.1	100 (1,581)
	35.3	51.2	39
65-69 years old	76.3	23.7	100 (1,131)
	27.6	28.8	27.9
70-74 years old	82.7	17.3	100 (705)
	18.6	13.1	17.4
75 and above	90.0	10.0	100 (642)
	18.5	6.9	15.8
Total	77.1	22.9	100
	100 (3,129)	100 (930)	100 (4,059)
Gender* **			
Male	66.0	34.0	100 (1,833)
	38.6	67.1	45.2
Female	86.3	13.7	100 (2,226)
	61.4	32.9	54.8
Total	77.1	22.9	100
	100 (3,129)	100 (930)	100 (4,059)
Marital Status* **			
Single never married	66.3	33.7	100 (101)
	2.1	3.7	2.5
Married	73.5	26.5	100 (2,725)
	64.0	77.7	67.1
Widowed	87.1	12.9	100 (1,153)
	32.1	16.0	28.4
Divorced/ Separated	70.0	30.0	100 (80)
	1.8	2.6	2.0
Total	77.1	22.9	100
	100 (3,129)	100 (930)	100 (4,059)
Ethnicity* **			
Malays	78.3	21.7	100 (2,614)
	65.5	60.9	64.4
Chinese	74.7	25.3	100 (732)
	17.5	19.9	18.0
Indian	87.6	12.4	100 (282)
	7.9	3.8	6.9
Others	66.6	33.4	100 (431)
	9.2	15.5	10.6
Total	77.1	22.9	100
	100 (3,129)	100 (930)	100 (4,059)
Co-residence **			
No co-residence	78.0	22.0	100 (1,579)
	39.4	37.3	38.9
At least 1 child co-resides	77.4	22.6	100 (2,245)
	55.5	54.5	55.3
Childless	67.7	32.3	100 (235)
	5.1	8.2	5.8
Total	77.1	22.9	100
	100 (3,129)	100 (930)	100 (4,059)

Note: ***p < 0.001 **p < 0.01 *p < 0.5

Source: Author's analysis of MPFS-5, 2014

This section has outlined the demographic and health characteristics associated with labour participation. Overall, the analysis showed that the association between these characteristics with labour participation were all statistically significant. Besides demographic and health characteristics, it is also equally important to investigate the association of the socio-economic characteristics with labour participation, which is shown in the next section.

5.4.2 Health characteristics of older people according to labour participation

The first health characteristic was the number of health problems. As indicated in Table 5-14, the association between the number of health problems and labour force participation was statistically significant at $p < 0.001$ level. Among older people who reported no health problem, 68 percent were in the labour market, while 32 percent were not. Among older people who reported 3 or more health problems, only 15 percent were currently in the labour market while more than four-fifths (85 percent) were not currently working. Similarly, among older people who were currently in the labour market, about one-third reported no health problem (34 percent).

Table 5-14 also illustrates the association between the number of difficulty in ADLs and labour force participation which was statistically significant at $p < 0.001$ level. Among older people who were assessed with no difficulty in ADL, 73 percent were not currently in the labour market, while 27 percent were currently working. Among older people who were assessed with difficulties in 3 or more ADLs, 88 percent were not currently working while only a small fraction (12 percent) currently working. Among those who were currently in the labour market, the majority reported no difficulty performing ADLs. Both findings pertaining to the health characteristics show that older people with a better health condition are more likely to participate in the labour market compared to those with a poor health condition as found in many studies (Schofield *et al.*, 2013; Do *et al.*, 2014).

Table 5-14: Health characteristics of older people by labour participation

Characteristics	Currently working in the labour market		
	No (%)	Yes (%)	Total (%)
Number of Health problems* **			
None	68.2	31.8	100 (977)
	21.7	34.4	24.6
1 health problem	76.6	23.4	100 (1,185)
	29.6	30.6	29.8
2 health problems	79.6	20.4	100 (891)
	23.1	20.1	22.4
3 or more health problems	85.3	14.7	100 (920)
	25.6	14.9	23.2
Total	77.2	22.8	100
	100 (3,068)	100 (905)	100 (3,973)
Number of difficulty in ADLs* **			
None	73.0	27.0	100 (2,789)
	65.4	81.7	69.1
Difficulty in 1 ADL	84.9	15.1	100 (522)
	14.2	8.6	12.9
Difficulty in 2 ADLs	86.9	13.1	100 (260)
	7.3	3.7	6.4
Difficulty in 3 or more ADLs	87.9	12.1	100 (464)
	13.1	6.1	11.5
Total	77.2	22.8	100
	100 (3,114)	100 (921)	100 (4,035)

Note: ***p < 0.001 **p < 0.01 *p < 0.5
Source: Author's analysis of MPFS-5, 2014

5.4.3 Socio-economic characteristics of older people according to labour participation.

In this section, the association between the socio-economic characteristics of older Malaysians with their labour participation are analysed. Thus, the summary of the analysis based on the Chi-Square results is presented in Table 5-15.

The association between one's highest education attainment and labour force participation was also examined, and was significant at p < 0.5 level. As indicated in Table 5-15, among older people who had no formal education, 81 percent were not currently working and only 19 percent were currently working. Among those who were currently working, the majority had attained pre-school/primary education (53 percent) while only a small fraction had attained post-secondary/higher education (5.1 percent).

The number of income sources has also been shown to be significant in terms of older people's working status (p < 0.001). Among older persons who had no sources of income, almost all respondents (99 percent) were not currently in the labour market. Among those who had 2 or more sources of income, 72 percent were not currently working while 28 percent reported

currently working in the labour market. Among older people who were in the labour market, a significant proportion had 1 source of income (63 percent), while only a small number had no sources of income (0.3 percent). Such results present a complex relationship between socio-economic factors and labour force participation, which will be explored in greater detail through multivariate analysis, and discussed critically against existing academic literature.

Table 5-15: Socio-economic characteristics of older Malaysians based on labour force participation

Characteristics	Currently working in the labour market		
	No (%)	Yes (%)	Total (%)
Highest education attainment*			
No formal education	80.9	19.1	100 (806)
	20.8	16.6	19.9
Pre-school/Primary education	75.8	24.2	100 (2,033)
	49.3	52.8	50.1
Secondary education	76.2	23.8	100 (1,001)
	24.4	25.6	24.7
Post-secondary/Higher education	78.5	21.5	100 (219)
	5.5	5.1	5.4
Total	77.1	22.9	100
	100 (3,129)	100 (930)	100 (4,059)
Number of income sources***			
No sources of income	98.5	1.5	100 (200)
	6.3	0.3	4.9
1 sources of income	77.7	22.3	100 (2,631)
	65.3	63.2	64.8
2 or more sources of income	72.4	27.6	100 (1,228)
	28.4	36.5	30.3
Total	77.1	22.9	100
	100 (3,129)	100 (930)	100 (4,059)

Note: ***p < 0.001 **p < 0.01 *p < 0.5
Source: Author's analysis of MPFS-5, 2014

Overall, these results suggest that all socio-economic characteristics analysed were associated with labour force participation among older people.

5.4.4 Geographical characteristics of older people according to labour participation

The first geographical characteristic being considered was region. As depicted in Table 5-16, the difference between regions was significant at p < 0.001 level. Among older people from the central region, 84 percent were currently not in the labour market, and only 16 percent were in the labour market. Among older persons from Sabah, Sarawak and Labuan, 31 percent were currently working and 68 percent were not. Among those who were currently participating in the labour market, approximately one in ten resided in the Central region (9.5 percent) whereas more than a quarter (26 percent) resided in the Southern region.

As depicted in Table 5-16, a wide variation between urban and rural residence was observed, which was significant at the p < 0.001 level. Among older people residing in urban areas, 18 percent were currently working compared to 29 percent among those in rural areas. Among those who were currently working, more than half resided in rural areas (57 percent) while approximately two-fifths (43 percent) resided in urban areas.

Table 5-16: Geographical characteristics of older Malaysians based on labour force participation

Characteristics	Currently working in the labour market		
	No (%)	Yes (%)	Total (%)
Region* **			
Southern Region	77.0	23.0	100 (1,052)
	25.9	26.0	25.9
Central Region	84.3	15.7	100 (559)
	15.1	9.5	13.8
Northern Region	78.3	21.7	100 (1,027)
	25.7	24.0	25.3
East Coast region	78.6	21.4	100 (710)
	17.8	16.3	17.5
Sabah, Sarawak and Labuan	68.4	31.6	100 (711)
	15.5	24.2	17.5
Total	77.1	22.9	100
	100 (3,129)	100 (930)	100 (4,059)
Place of Residence* **			
Urban	81.9	18.1	100 (2,219)
	58.1	43.2	54.7
Rural	71.3	28.7	100 (1,840)
	41.9	56.8	45.3
Total	77.1	22.9	100
	100 (3,129)	100 (930)	100 (4,059)

Note: ***p < 0.001 **p < 0.01 *p < 0.5
Source: Author's analysis of MPFS-5, 2014

Overall, the findings showed that both of the geographical characteristics analysed were associated with labour participation among older people. In the next section, the association between intergenerational support characteristics and labour participation is explored.

5.4.5 Receipt of support by older people from adult children and its frequency according to labour participation

Now this section is turning to the intergenerational support characteristics to analyse their association with labour participation. Firstly, the receipt of support by older people from adult children and its frequency according to labour participation were analysed. There are seven types of support which are examined to see their association with the labour participation of older people namely; cash, paying bills, meals and basic needs, household chores, personal care, listening to problems, and accompanying to places. The frequency of the support was initially

categorised into once in a few months, once a month, few times a month, once a week, few times a week and every day. In an effort to make the data more meaningful for analysis, the six categories were further collapsed into four major categories, namely: never, at least once in a few months, at least once a month and childless. Older person with no children were taken into account. The Chi-square results are presented in Table 5-17.

The overall pattern emerging from this part of the analysis is that higher proportions of older people who received more frequent support from their older children were not currently working. For example, 85 percent of those who received cash assistance from their children at least once a month, compared to 65 and 73 percent of those who never received such assistance and those who received it at least once in a few months, respectively, were not in the labour market. 84 percent of those who received support from their adult children at least once a month in terms of meals and other basic needs, were currently in the labour market, compared with 71 percent of those who never received such help, and 72 percent of those who received such help at least once in a few months. A similar pattern was true for older people who received support in terms of paying bills, house chores, personal care, being listened to, and being accompanied by their children to certain places at least once a month.

Apart from that, the overall pattern also showed that among those who participated in the labour market, a higher proportion never received assistance from their adult children. For example, among older people who were currently in the labour market, a large majority never received any bill payment assistance from their adult children (60 percent) while 7 percent and 25 percent received bill payment assistance from their adult children at least once in a few months and at least once a month respectively. A similar pattern exists for older people who received support in terms of meals and other basic needs, house chores, personal care, listening to a parent's problem and being accompanied by their children to certain places.

Table 5-17: Receipt of support by older people from adult children and its frequency based on labour force participation

How frequent have you received the following assistance from your adult children?	Currently working in the labour market		
	No (%)	Yes (%)	Total (%)
Cash Assistance* **			
Never	64.7	35.3	100 (778)
	16.1	29.7	19.2
At least once in a few months	72.7	27.3	100 (1,025)
	23.9	30.2	25.3
At least once a month	85.3	14.7	100 (2,010)
	54.9	31.9	49.7
No children	67.7	32.3	100 (235)
	5.1	8.2	5.8
Total	77.1	22.9	100
	100 (3,121)	100 (927)	100 (4,048)
Paying bills* **			
Never	72.4	27.6	100 (2,025)
	47.1	60.1	50.0
At least once in a few months	71.8	28.2	100 (227)
	5.2	6.9	5.6
At least once a month	85.2	14.8	100 (1,559)
	42.6	24.9	38.5
No children	67.7	32.2	100 (235)
	5.1	8.2	5.8
Total	77.0	23.0	100
	100 (3,117)	100 (929)	100 (4,046)
Preparing meals and basic needs* **			
Never	71.1	28.9	100 (1,218)
	27.9	38.1	30.2
At least once in a few months	71.6	28.4	100 (1,702)
	14.3	19.0	15.4
At least once a month	83.6	16.4	100 (872)
	52.7	34.6	48.5
No children	67.7	32.3	100 (235)
	5.1	8.2	5.8
Total	77.1	22.9	100
	100 (3,103)	100 (924)	100 (4,027)
Assisting house chores* **			
Never	73.8	26.2	100 (1,341)
	31.9	38.3	33.3
At least once in a few months	73.0	27.0	100 (577)
	13.5	17.1	14.3
At least once a month	82.2	17.8	100 (1,872)
	49.5	36.4	46.5
No children	67.7	32.3	100 (235)
	5.1	8.3	5.8
Total	77.2 (3,108)	22.8 (917)	100 (4,025)
	100 (3,108)	100 (917)	100 (4,025)
Personal care* **			
Never	71.5	28.5	100 (1,449)
	33.4	44.8	36.0

At least once in a few months	76.1	23.9	100 (823)
	20.2	21.4	20.5
At least once a month	84.5	15.5	100 (1,517)
	41.3	25.5	37.7
No children	67.7	32.3	100 (235)
	5.1	8.3	5.8
Total	77.1	22.9	100
	100 (3,103)	100 (921)	100 (4,024)
Listening to parent's problem* **			
Never	75.8	24.2	100 (1,673)
	40.7	43.7	41.4
At least once in a few months	77.3	22.7	100 (933)
	23.2	22.9	23.1
At least once a month	80.5	19.5	100 (1,197)
	31.0	25.2	29.6
No children	67.7	32.3	100 (235)
	5.1	8.2	5.8
Total	77.1	22.9	100
	100 (3,112)	100 (926)	100 (4,038)
Accompany parents to places* **			
Never	69.7	30.3	100 (1,110)
	24.9	36.2	27.5
At least once in a few months	78.6	21.4	100 (1,199)
	30.3	27.6	29.7
At least once a month	82.6	17.4	100 (1,497)
	39.7	28.0	37.0
No children	67.7	32.3	100 (235)
	5.1	8.2	5.8
Total	77.0	23.0	100
	100 (3,113)	100 (928)	100 (4,041)

Note: ***p < 0.001 **p < 0.01 *p < 0.5
Source: Author's analysis of MPFS-5, 2014

Taken together, the results showed that the receipt of all types of support by older people from adult children and their frequency were significantly associated with the labour participation of older people. In the following discussion, the association between the provision of support by older people to their adult children and its frequency with labour participation is investigated and the results shown in Table 5-18.

5.4.6 The provision of support by older people to adult children and its frequency according to labour participation

In further assessing the relationship between the labour participation of older people and the intergenerational support, and the frequency of the support, each type of assistance was examined.

In this respect, as indicated in Table 5-18, providing support to one's adult children at least once a month was generally associated with a higher likelihood of being in the labour market, compared

to never providing such support or providing it at least once in a few months. However, there was one finding which was not in line with this overall pattern. Specifically, a higher proportion of older people who supported their children at least once a month with monetary support, paying bills, preparing meals, personal care or listening, and accompanying to places were in the labour market compared to older people who never or at least once in a few months helped their children with such activities. By contrast, a higher frequency of providing help to children with house chores was not necessarily associated with a higher proportion of older people being in paid work, compared to older people who provided such help at least once in a few months or who never did so.

Table 5-18: Provision of support by older people to adult children and its frequency based on labour force participation

How frequent have you provide the following assistance to your adult children?	**Currently working in the labour market**		
	No	Yes	Total
	(%)	(%)	(%)
Cash Assistance* **			
Never	81.3	18.7	100 (2,681)
	69.8	54.5	66.3
At least once in a few months	73.3	26.7	100 (692)
	16.3	20.1	17.1
At least once a month	63.5	36.5	100 (433)
	8.8	17.2	10.7
No children	67.7	32.3	100 (235)
	5.1	8.3	5.8
Total	77.2	22.8	100
	100 (3,120)	100 (921)	100 (4,041)
Paying bills* **			
Never	78.9	21.1	100 (3,469)
	87.6	79.0	85.6
At least once in a few months	66.3	33.7	100 (101)
	2.1	3.7	2.5
At least once a month	65.7	34.3	100 (248)
	5.2	9.2	6.1
No children	67.7	32.2	100 (235)
	5.1	8.2	5.8
Total	77.1	22.9	100
	100 (3,125)	100 (928)	100 (4,053)
Preparing meals and basic needs* **			
Never	79.6	20.4	100 (2,441)
	62.5	54.1	60.6
At least once in a few months	73.1	26.9	100 (405)
	9.5	11.8	10.0
At least once a month	74.9	25.1	100 (949)
	22.9	25.8	23.5
No children	67.7	32.3	100 (235)
	5.1	8.3	100
Total	100 (3,109)	100 (921)	100 (4,030)

Assisting house chores*			
Never	77.5	22.5	100 (2,654)
	66.1	64.6	65.8
At least once in a few months	76.5	23.5	100 (281)
	6.9	7.1	7.0
At least once a month	78.6	21.4	100 (864)
	21.8	20.0	21.4
No children	67.7	32.3	100 (235)
	5.1	8.2	5.8
Total	77.1	22.9	100
	100 (3,110)	100 (924)	100 (4,034)
Personal care*			
Never	78.3	21.7	100 (2,465)
	62.1	58.0	61.2
At least once in a few months	77.7	22.3	100 (404)
	10.1	9.8	10.0
At least once a month	76.1	23.9	100 (924)
	22.6	24.0	22.9
No children	67.7	32.3	100 (235)
	5.1	8.3	5.8
Total	77.1	22.9	100
	100 (3,107)	100 (921)	100 (4,028)
Listening to parent's problem***			
Never	79.0	21.0	100 (2,158)
	54.9	49.1	53.6
At least once in a few months	77.1	22.9	100 (885)
	22.0	22.0	22.0
At least once a month	74.5	25.5	100 (749)
	18.0	20.7	18.6
No children	67.7	32.3	100 (235)
	5.1	8.2	5.8
Total	77.1	22.9	100
	100 (3,103)	100 (924)	100 (4,027)
Accompany parents to places***			
Never	79.5	20.5	100 (2,904)
	74.3	64.1	71.9
At least once in a few months	73.7	26.3	100 (495)
	11.7	14.0	12.3
At least once a month	68.5	31.5	100 (403)
	8.9	13.7	10.0
No children	67.7	32.3	100 (235)
	5.1	8.2	5.8
Total	77.0	23.0	100
	100 (3,110)	100 (927)	100 (4,037)

Note: ***p < 0.001 **p < 0.01 *p < 0.5
Source: Author's analysis of MPFS-5, 2014

5.5 Chapter Summary

This chapter has described the univariate and bivariate analysis of older people's demographic, health, socio-economic, geographical and intergenerational support characteristics and their association with labour participation by using chi-square tests. The results showed that labour

force participation varied greatly with different demographic, characteristics. A significantly higher proportion of respondents who were male, aged 60-64 years old, single never married, Indian ethnicity group, were participating in the labour market compared to their counterparts. In terms of health, higher percentages of respondents who had no health problem were in the labour market compared to those with 2 health problems, and 3 or more health problems. Similar patterns were also observed for older people with no difficulties in ADL. In addition, labour force varied with different socio-economic characteristics. In terms of geographical characteristics, the percentage of those participating in the labour market was lower among those who resided in urban areas, and those who lived in the central region. In terms of intergenerational support, the differences between older people who received assistance from their adult children and those who did not with respect to older people's labour participation were significant for all types of assistance, such as monetary assistance, bill payment and preparing meals. In this respect, the receipt of support from children, and a higher frequency of such receipt, was associated with a lower likelihood of being in the labour market, while the provision of support, and a higher frequency in such provision, was associated with a greater likelihood.

As relying on cross-tabulation is insufficient as it is not able of controlling for the range of potential demographic, health, socio-economic, geographical and intergenerational support characteristics so as to isolate the effect of one factor at a time, further analysis is required. Thus, the results obtained from this chapter will be further examined and analysed using the multivariate analysis in the next chapter in order to identify significant predictors of the likelihood of participating in the labour market after controlling for other variables.

Chapter 6: Unravelling the relationship between labour participation, co-residence and intergenerational exchange of support.

6.1 Introduction

This chapter aims to present the results of the logistic regression carried out to unravel the relationship between labour participation, co-residence and intergenerational support. So far, we have investigated the univariate and bivariate relationships between older people's demographic, health and socio-economic characteristics on the one hand, and their labour participation on the other, by using chi-square tests in Chapter 5. This chapter moves on to describe the multivariate analysis in the following steps:

a) Investigating the effect of demographic, health, socio-economic and geographical characteristics on older people's odds of being in the labour market;
b) Investigating the effect of co-residence with adult children on older people's odds of being in the labour market, controlling for a range of older people's demographic, health, socio-economic and geographical characteristics;
c) Investigating the effect of ***receipt*** of support from adult children on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics. The receipt and frequency of support from adult children can take the form of any of the following:
    a. Cash assistance
    b. Bill payment
    c. Preparing meals and other basic needs
    d. Household chores
    e. Personal Care
    f. Listening to parents' personal problem
    g. Accompanying parents to places;
d) Investigating the effect of ***provision*** of support by older people to adult children on the older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics. The provision and frequency of support by older people to adult children can include any of the following:

a. Cash assistance
b. Bill payment
c. Preparing meals and other basic needs
d. Household chores
e. Personal care
f. Listening to adult children's problems
g. Accompanying adult children to places.

It is worth restating the research questions that have been discussed in Chapter 1. The multivariate analysis conducted in this chapter aimed to address the following research questions:

1. What are the demographic, health, socio-economic, and geographical characteristics that are associated with the labour participation of older people?
2. To what extent is older people's co-residence with their adult children associated with older people's labour participation?
3. To what extent is the intergenerational support ***received*** by older people from their adult children and its frequency associated with the labour participation of older people?
4. To what extent is the intergenerational support ***provided*** by older people to their adult children and its frequency associated with the labour participation of older people?

Thus, this chapter is divided into four main sections. The second section will present the logistic regression analysis which is further divided into 4 parts, each of which will present the results relating to the respective research questions. The third section will summarise the logistic regression analysis and the final section will conclude the chapter.

6.2 Logistic regression analysis results

6.2.1 The effect of demographic, health, socio-economic and geographical characteristics on older people's odds of being in the labour market.

In order to examine the effect of demographic, health, socio-economic and geographical characteristics on older people's labour force participation, four models were fitted to the data. The results of the logistic regression analysis including regression coefficients (B values) and odds ratios are presented in Table 6-1.

Four models were used in the analysis. Model 1 includes the demographic variables and the effects of older persons' age, gender, marital status and ethnicity on labour force participation were observed. In Model 2, variables related to older persons' health characteristics were added

and the effects of demographic and health variables on labour participation were observed. Model 3 was constructed after the inclusion of socio-economic variables to demographic and health variables. Model 4 was fitted while including geographic characteristics with demographic, health and socio-economic variables. To reiterate, the modelling structure to examine the determinants associated with labour participation for this analysis as mentioned in Section 4.4.3 was based on the literature found in the area of labour participation. Among the literature that guided the order of variable entry were the works of Ng *et al.* (2005), Hamid (2015) and Tey (2017) on population ageing in Malaysia. Together, these literature helped to identify the basic sequence of variable entry in the analysis of this study as these authors introduce variables of demographic, health, socio-economic, geographical and intergenerational support in their study.

It is worth pointing out that the co-residence factor was added to Model 1 under the demographic variables due to the impact of demographic change on the potential for co-residence as observed in research by many demographers (Martin and Kinsella, 1994; Knodel *et al.*, 2000; Ruggles and Heggeness, 2008). However, co-residence was found not to be a significant predictor of labour participation and the variable was dropped from the analysis.

Table 6-1: Coefficients of model predicting labour force participation among older people

		Model 1		Model 2		Model 3		Model 4	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00
	65-69	-.412	.662***	-.366	.694***	-.450	.638***	-.419	.658***
	70-74	-.860	.423***	-.798	.450***	-.941	.390***	-.939	.391***
	75 and above	-1.412	.244***	-1.320	.267***	-1.557	.211***	-1.550	.212***
Gender	Male (Ref)		1.00		1.00		1.00		1.00
	Female	-1.227	.293***	-1.168	.311***	-1.300	.273***	-1.302	.272***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00
	Married	-.726	.484**	-.672	.511**	-.817	.442***	-.869	.419***
	Widowed	-.865	.421***	-.802	.448**	-1.015	.363***	-1.038	.354***
	Divorced/Separated	-.007	.993	0.17	1.017	-.091	.913	-.134	.875
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00
	Chinese	.120	1.128	.101	1.107	.244	1.276*	.360	1.433**
	Indians	-.779	.459***	-.711	.491***	-.574	.563**	-.339	.712
	Others	.662	1.938***	.668	1.951***	.588	1.800***	.172	1.188
Number of health problems	None (Ref)				1.00		1.00		1.00
	1 health problem			-.331	.718***	-.358	.699***	-.391	.676***
	2 health problems			-.348	.706**	-.417	.659***	-.444	.642***
	3 or more health problems			-.747	.474***	-.803	.448***	-.808	.446***
Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00
	Difficulty in 1 ADL			-.286	.752*	-.272	.762	-.295	.744*

	Difficulty in 2 ADLs			-.454	.635*	-.465	.628*	-.475	.622*
	Difficulty in 3 or more ADLs			-.456	.634**	-.482	.617**	-.533	.587**
Education	No formal education (Ref)						1.00		1.00
	Pre-school and primary					-.361	.697**	-.323	.724*
	Secondary education					-.782	.458***	-.601	.548***
	Post-secondary or higher education					-1.198	.302***	-.890	.411***
Number of income sources	None (Ref)						1.00		1.00
	1 income source					2.865	17.553***	2.947	19.049***
	2 or more income sources					3.263	26.120***	3.341	28.235***
Region	Southern region (Ref)								1.00
	Central region							-.276	.759
	Northern region							.173	1.189
	East Coast region							-.123	.884
	Sabah, Sarawak & Labuan							.395	1.485*
Place of residence	Urban (Ref)								1.00
	Rural							.624	1.867***
N=4,095									
Constant		-.441	1.555	0.746	2.108**	-1.441	.237*	-1.898	.150**
Omnibus Test		Model χ^2 (10) 438.200***		Model χ^2 (6) 68.074***		Model χ^2 (5) 126.900***		Model χ^2 (5) 66.993***	
Cox & Snell R^2		.105		.120		.148		.162	
Nagelkerke R^2		.159		.182		.225		.246	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

Results from the regression analysis as shown in Table 6-1 noted that the full logistic regression model containing all predictors was statistically significant, χ^2 (5) = 66.993, p < 0.001, indicating statistically significant differences between respondents who reported working and not working. The model as a whole explained between 16.2 percent (Cox & Snell R squared) and 25 percent (Nagelkerke R squared) of the variance in the respondents' working status. The model classified correctly 95.1 percent of the respondents who were not working and 24.7 percent of those who were currently working, for an overall classification success rate of 79.1 percent (Table 6-1).

Based on the results shown in Model 4 in Table 6-1, all demographic predictor variables were statistically significant. Age showed a strong negative relationship with labour participation. Among people aged 65-69, the odds of working were 0.66 times the odds among people aged 60-64, holding all other predictors constant (Model 4). Among people aged 70-74, the odds of working were 0.39 times the odds among people aged 60-64, while among older people aged 75 years and above, these odds were 0.21 times the odds among people aged 60-64. With regard to gender, females were 73 percent less likely than males to be in the labour market. In terms of marital status, older people who were married were 58 percent less likely to work compared to single never married older people, while widowed persons were 65 percent less likely to participate in the labour market compared to single never married older people. In terms of ethnicity, Chinese older people were 1.4 times more likely than Malay older people to work.

The influence of the number of health problems is significant in the model. Older people who reported 1 health problem were 32 percent less likely to work compared to older people who reported no health problem, controlling for other predictors in the model. Those who reported 2 health problems were 36 percent less likely to participate in the labour market compared to those who had no health problem, whereas those with 3 or more health problems were 55 percent less likely to work compared to the reference group. In terms of the number of difficulties performing Activities of Daily Living (ADLs), a similar gradient was observed: older people who had difficulties performing 1 type of ADLs were 26 percent less likely to work than those with no ADL difficulties, while it was 38 and 41 percent less likely for those with 2 and 3 types of ADL difficulties, respectively.

In terms of socio-economic predictors, older people who had attained preschool and primary education were 28 percent less likely than those with no formal education to participate in the labour market, while those with secondary education, and with post-secondary and higher education, were 45 and 59 percent less likely, respectively, than those with no formal education to be in the labour market. The number of income sources showed the highest impact on individuals' chances of working. For example, older people with only 1 source of income were 19

times more likely than older people with no source of income to be in the labour market. Similarly, older people with 2 or more sources of income were 28 times more likely than older people without any sources of income to work in the labour market. However, with a large coefficient, caution must be applied when interpreting, as there seems to be an overlap between the two categories' confidence interval. For example, for 1 source of income, the lower and upper 95 % C.I. for EXP(B) was 5.972 and 60.757 respectively. For 2 or more sources of income, the lower and upper 95 % C.I. for EXP(B) was 8.804 and 90.549 respectively as shown in Table D-6 1 **(Appendix C)**. This large coefficient was observed in all of the results of the analysis

In terms of geographical factors, older people living in Sabah, Sarawak and Labuan were 1.4 times more likely to participate in the labour market compared to older people living in the southern region. Those residing in rural areas were 1.8 times more likely to work compared to older urbanites.

So far, this section has analysed the effect of demographic, health, socio-economic and geographical characteristics on older people's odds of being in the labour market. To sum up, respondents who were older, female, and married or widowed were less likely to participate in the labour market than their counterparts in the reference categories. Furthermore, respondents with a higher education, those who experienced greater difficulty in daily living and those who lived with more health problems were less likely to be in the labour market than the reference group. On the other hand, those who were Chinese, with more income sources, who lived in rural areas and those residing in Sabah, Sarawak and Labuan were more likely to be in the labour market than their comparison groups. The next section will examine the effect of receipt of support from adult children on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics where an additional model will be fitted.

6.2.2 The effect of *receipt* of support from adult children and its frequency on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics.

In order to examine the effect of receiving support from adult children and its frequency on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics, five models were fitted to the data. Specifically, this will be shown in Table 6-2 to Table 6-7 where Model 5 was constructed after the inclusion of receiving support and its frequency with cash, bill payment, meals and other basic needs, house chores, care and being accompanied to places received by older people from their adult children.

The receipt of each type of support and its frequency was regressed on separately. Thus, this section starts off with analysing the effect of receiving cash and its frequency from adult children on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics before moving on to analysing the effect of the frequency of bill payments and its frequency by adult children on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics.

Table 6-2: Coefficients of model predicting labour force participation among older people (Model 5: *Receipt* of cash assistance from adult children and its frequency)

		Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.415	.660***	-.368	.692***	-.452	.637***	-.420	.657***	-.387	.679***
	70-74	-.881	.414***	-.819	.441***	-.959	.383***	-.955	.385***	-.928	.395***
	75 and above	-1.416	.243***	-1.325	.266***	-1.559	.210***	-1.552	.212***	-1.503	.222***
Gender	Male (Ref)				1.00		1.00		1.00		1.00
	Female	-1.231	.292***	-1.172	.310***	-1.302	.272***	-1.303	.272***	-1.335	.311***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.729	.482**	-.675	.509**	-.820	.441***	-.871	.418***	-.611	.543*
	Widowed	-.866	.421***	-.804	.448**	-1.302	.363***	-1.037	.355***	-.763	.466*
	Divorced/Separated	-.008	.992	.016	1.016	-.092	.912	-.134	.874	-.009	.991
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.116	1.123	.097	1.102	.238	1.269*	.354	1.425**	.410	1.506***
	Indians	-.779	.459***	-.711	.491***	-.576	.562**	-.342	.711	-.388	.679
	Others	.672	1.958***	.678	1.971***	.599	1.820***	.181	1.198	.099	1.105
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.325	.722**	-.353	.703***	-.385	.681***	-.379	.685***
	2 health problems			-342	.711**	-.411	.663***	-.436	.646***	-.448	.639***
	3 or more health problems			-.743	.475***	-.800	.449**	-.805	.447***	-.831	.436***

Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.284	.753*	-.271	.763	-.294	.745*	-.314	.731*
	Difficulty in 2 ADLs			-.454	.635*	-.464	.629*	-.475	.622*	-.454	.635*
	Difficulty in 3 or more ADLs			-.449	.638**	-.474	.622**	-.525	.592**	-.569	.566***
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.354	.702**	-.316	.729*	-.304	.738*
	Secondary education					-.771	.463***	-.591	.554***	-.595	.551***
	Post-secondary or higher education					-1.191	.304***	-.884	.413***	-.999	.368***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.867	17.589***	2.948	19.059***	3.190	24.283***
	2 or more income sources					3.258	25.999***	3.335	28.073***	3.712	40.954***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.274	.760	-.231	.794
	Northern region							.174	1.189	.141	1.152
	East Coast region							-.112	.894	-.149	.862
	Sabah, Sarawak & Labuan							.403	1.496*	.368	1.445*
Place of residence	Urban (Ref)								1.00		1.00
	Rural							.618	1.854***	.593	1.809***

Frequency of support (Cash assistance)	Never (Ref)										1.00
	At least once in a few months									-.404	.668***
	At least once a month									-1.143	.319***
	No children									-.360	.698
N		N=3,850		N=3,678		N=3,630		N=3,581		N=3,513	
Constant		.449	1.567	.750	2.116**	-1.446	.236*	-1.903	.149**	-1.842	.159**
Omnibus Test		Model χ^2 (10) 440.268***		Model χ^2 (6) 67.032***		Model χ^2 (5) 125.454***		Model χ^2 (5) 65.758***		Model χ^2 (3) 116.083***	
Cox & Snell R^2		.105		.121		.148		.162		.186	
Nagelkerke R^2		.160		.183		.225		.246		.283	

Source: Author's own analysis, MPFS-5, 2014
Note: *$p \leq .05$; **$p \leq .01$; *** $p \leq .001$

a) ***Receipt*** of cash assistance from adult children and its frequency

The results of Table 6-2 show the effect of the frequency of cash assistance received from adult children on older persons' labour participation included in Model 5. Referring our analysis to Model 5 of Table 6-2, findings showed that age was negatively associated with older people's labour participation. For example, among older people aged 65-69, the odds of working were 0.68 times the odds among people aged 60-64, while these odds among older people aged 70-74 and among older people aged 75 years and above were 0.39 and 0.22 times respectively the odds among older people aged 60-64. In terms of gender, females were 69 percent less likely than males to be in the labour market. Older people who were married and those who were widowed were 46 and 53 percent less likely respectively to engage in the labour market than single never married older people. Although marital status variations in terms of labour participation were pronounced in Malaysia, the significant differences have been observed for married and widowed persons but not for divorced/separated older people. The ethnicity of respondents also showed a statistically significant effect on labour participation. Older Chinese persons were 1.51 times more likely than Malays to be in the labour market. Interestingly, coming from a Chinese background showed a significant effect on labour participation only after the socio-economic variables were added to the demographic and health variables in Model 3, and the significance was maintained after the inclusion of geographic and intergenerational support variables in Models 4 and 5 respectively. On the other hand, an Indian or other background had a significant effect on labour participation in Model 1 and the significance was maintained after the inclusion of health and socio-economic variables in the Models 2 and 3 respectively. However, the significance of both an Indian and of other background on labour participation disappeared after the inclusion of geographical and intergenerational support variables in Models 4 and 5 respectively.

Referring back to Model 5 in Table 6-2, the number of health problems suffered by older people had a strong effect on labour participation. The analysis showed that respondents who reported more health problems were less likely to engage in labour market compared to those who had no health problem. For example, older people who reported 1 health problem were 32 percent less likely to work than older people with no health problem, while those with 2 or health problems were 36 and 56 percent less likely to work, respectively, compared to the reference group. Similarly, respondents who had difficulty in performing more ADLs were less likely to participate in the labour market compared to those who had no such difficulties. For example, older people who had difficulties in performing 1, 2 or 3 types of ADLs were 27, 37 and 43 percent less likely, respectively, than older person without any difficulties performing ADLs to work.

The influence of socio-economic factors was significant in the model. In terms of education, respondents with a higher level of education attainment were less likely to participate in the labour market compared to those who had no education. For example, older people who attained pre-school and primary education were 26 percent less likely to be in the labour market compared to those who had no formal education, while those with secondary, or with post-secondary or higher education, were 45 and 63 percent less likely, respectively, than the reference group to engage in the labour market. In term of sources of income, the findings indicated that the chances of working among older people increase with the increase in the number of income sources. For example, older people with 1 and 2 sources of income were 24 and 41 times more likely to work, respectively, than older people with no source of income. Again, similar to previous explanation in 6.2.1 with regards to sources of income, it is important to bear in mind that the result for sources of income should be interpreted with caution due to the large coefficient.

The results also showed that older people living in East Malaysia that is Sabah, Sarawak and Labuan have significantly higher chances of labour participation compared to older people in Southern region in Malaysia. For example, older people residing in Sabah, Sarawak and Labuan were 1.45 times more likely to work compared to those residing in Southern parts of Malaysia. A significant difference of labour participation was also observed by one's place of residence, with higher odds of labour participation for older people in the rural areas compared to older people in the urban areas. For example, among older people residing in rural areas, the odds of working were 1.8 times the odds among older people residing in urban areas.

The results of Model 5 showed that the receipt of cash assistance and its frequency from adult children had a significant effect on older people's work participation, with the chances for the latter being significantly lower for those who received cash assistance more frequently than those who never received cash assistance from their adult children. For example, older people who received cash assistance from their adult children at least once in a few months were 33 percent less likely to work than those who never received such assistance. Older people who received cash assistance from their adult children at least once a month were 68 percent less likely to participate in the labour market compared to those who never received cash assistance from their adult children.

Taken together, the analysis in Table 6-2 showed that age, gender, marital status, ethnicity, the number of health problems, the number of difficulties with ADLs, education, the number of income sources, region, and the place of residence have a significant effect on older people's work participation. Importantly, older people who received cash assistance more frequently were

less likely to participate in the labour market compared to those who never received such assistance. The next section moves on to discuss the effect of bill payments assistance and its frequency by adult children on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics as indicated in Table 6-3.

Table 6-3: Coefficients of model predicting labour force participation among older people (Model 5: *Receipt* of bill payment from adult children and its frequency)

		Model 1		Model 2		Model 3		Model 4		Model 5	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.417	.659***	-.370	.691***	-.453	.636***	-.422	.656***	-.424	.654***
	70-74	-.861	.423***	-.798	.450***	-.939	.391***	-.938	.392***	-.908	.403***
	75 and above	-1.415	.243***	-1.325	.266***	-1.560	.210***	-1.553	.212***	-1.532	.216***
Gender	Male (Ref)				1.00		1.00		1.00		1.00
	Female	-1.234	.291***	-1.175	.309***	-1.306	.271***	-1.307	.271***	-1.270	.281***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.724	.485**	-.669	.512**	-.815	.442***	-.868	.420***	-.622	.537*
	Widowed	-.858	.424***	-.795	.451**	-1.007	.365***	-1.030	.357***	-.705	.494*
	Divorced/Separated	-.006	.994	.018	1.018	-.090	.914	-.133	.876	-.117	1.124
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.116	1.123	.097	1.102	.240	1.271*	.356	1.428**	.397	1.488***
	Indians	-.782	.458***	-.713	.490***	-.575	.563**	-.341	.711	-.288	.749
	Others	.660	1.934***	.667	1.948***	.588	1.800***	.175	1.191	.150	1.162
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.331	.718***	-.358	.699***	-.390	.677***	-.396	.673***
	2 health problems			-342	.710**	-.408	.665***	-.435	.647***	-.438	.646***
	3 or more health problems			-.747	.474***	-.804	.448**	-.809	.445***	-.810	.445***

Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.281	.755*	-.267	.766	-.288	.750*	-.307	.735*
	Difficulty in 2 ADLs			-.458	.633*	-.469	.626*	-.479	.620*	-.465	.628*
	Difficulty in 3 or more ADLs			-.449	.638**	-.475	.622**	-.525	.591**	-.531	.588***
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.357	.700**	-.320	.726*	-.334	.716*
	Secondary education					-.778	.459***	-.597	.550***	-.643	.526***
	Post-secondary or higher education					-1.188	.305***	-.881	.414***	-1.018	.361***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.868	17.599***	2.949	19.090***	2.966	19.405***
	2 or more income sources					3.268	25.250***	3.345	28.360***	3.363	28.887***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.271	.762	-.186	.830
	Northern region							.168	1.182	.164	1.178
	East Coast region							-.123	.884	-.149	.862
	Sabah, Sarawak & Labuan							.392	1.480*	.477	1.612*
Place of residence	Urban (Ref)								1.00		1.00
	Rural							.626	1.871***	.590	1.804***

Frequency of support (Bill payment)	Never (Ref)										1.00
	At least once in a few months									-.011	.989
	At least once a month									-.620	.538***
	No children									.061	1.062
N		N=3,847		N=3,676		N=3,625		N=3,573		N=3,554	
Constant		.449	1.566	.750	2.118**	-1.445	.236*	-1.902	.149**	-1.980	.138**
Omnibus Test		Model χ^2 (10) 439.146***		Model χ^2 (6) 67.658***		Model χ^2 (5) 126.823***		Model χ^2 (5) 65.758***		Model χ^2 (3) 43.553	
Cox & Snell R^2		.105		.120		.148		.162		.172	
Nagelkerke R^2		.160		.183		.225		.246		.261	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

b) ***Receipt*** of bill payment from adult children and its frequency

Table 6-3 shows the coefficients of the model predicting labour force participation among older people with the inclusion of the receipt of bill payment assistance and its frequency from adult children. Similar to the results found in Table 6-2, age, gender, marital status and ethnicity were significant demographic predictors of labour participation. For example, Model 5 in Table 6-3 showed that older people aged 65-69 were 35 percent less likely than older people aged 60-64 to be in the labour market, compared to those who were aged 70-74 and 75 years and over, who were 60 and 78 percent less likely, respectively, to be in the labour market compared to the comparison group. Females were 72 percent less likely than males to be in the labour market, and Chinese older people were 1.59 times more likely than Malays to work.

In terms of health, it was found that multiple health problems and difficulties in ADLs reduce older people's chances of participating in the labour market. For instance, older people with 1, 2 and 3 types of ADL difficulties were 27, 37 and 41 percent less likely, respectively, than older people with no ADL difficulties to participate in the labour market.

The analysis also showed that education and the number of income sources were significant socio-economic predictors. For instance, older people who attained preschool and primary education or secondary education were 28 percent and 47 percent less likely, respectively, to be working than those with no formal education, and the likelihood was even lower for those with post-secondary or higher education (64 percent less likely).

Model 5 in Table 6-3 also suggests that older people residing in Sabah, Sarawak and Labuan were 1.61 times more likely than the reference group to work, while rural older people were 1.80 times more likely to be in the labour force than were urban older people.

The most important finding to be highlighted here is that older people receiving assistance in terms of bills payment from their adult children at least once a month were 46 percent less likely to work compared to those who never received such assistance from their adult children.

What follows is the analysis of the effect of support receipt in terms of meals and other basic needs and its frequency from adult children on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics presented in Table 6-4.

Table 6-4: Coefficients of model predicting labour force participation among older people (Model 5: *Receipt* of meals and other basic needs from adult children and its frequency)

		Model 1		Model 2		Model 3		Model 4		Model 5	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.424	.655***	-.376	.687***	-.456	.634***	-.424	.655***	-.420	.657***
	70-74	-.879	.415***	-.818	.441***	-.953	.385***	-.951	.386***	-.944	.389***
	75 and above	-1.409	.244***	-1.319	.267***	-1.547	.213***	-1.541	.214***	-1.524	.218***
Gender	Male (Ref)				1.00		1.00		1.00		1.00
	Female	-1.219	.296***	-1.161	.313***	-1.289	.275***	-1.291	.275***	-1.245	.288***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.728	.483**	-.673	.510**	-.818	.441***	-.871	.419***	-.641	.527*
	Widowed	-.860	.423***	-.796	.451**	-1.005	.366***	-1.028	.358***	-.723	.485*
	Divorced/Separated	-.005	1.005	.026	1.026	-.081	.922	-.129	.879	.109	1.115
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.111	1.117	.095	1.099	.236	1.267*	.356	1.428**	.372	1.450**
	Indians	-.771	.463***	-.700	.497***	-.562	.570**	-.320	.726	-.291	.747
	Others	.670	1.954***	.678	1.970***	.601	1.824***	.182	1.200	.162	1.176
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.334	.716***	-.363	.695***	-.394	.674***	-.375	.688***
	2 health problems			-356	.700**	-.425	.654***	-.454	.635***	-.437	.646***
	3 or more health problems			-.741	.477***	-.799	.450**	-.803	.448***	-.781	.448***

Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.280	.756*	-.265	.767	-.286	.751*	-.313	.731*
	Difficulty in 2 ADLs			-.446	.640*	-.463	.629*	-.473	.623*	-.501	.606*
	Difficulty in 3 or more ADLs			-.454	.635**	-.477	.621**	-.528	.590**	-.540	.583**
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.349	.705**	-.313	.731*	-.321	.725*
	Secondary education					-.751	.472***	-.568	.566***	-.622	.537***
	Post-secondary or higher education					-1.179	.307***	-.867	.420***	-.943	.390***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.862	17.491***	2.943	18.970***	2.964	19.373***
	2 or more income sources					3.260	26.057***	3.339	28.182***	3.361	28.806***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.279	.756	-.223	.800
	Northern region							.180	1.197	.173	1.189
	East Coast region							-.120	.887	-.140	.869
	Sabah, Sarawak & Labuan							.400	1.492*	.463	1.588**
Place of residence	Urban (Ref)								1.00		1.00
	Rural							.630	1.877***	.614	1.848***

Frequency of support received (Meals and other basic needs)	Never (Ref)										1.00
	At least once in a few months									.035	1.035
	At least once a month									-.522	.593***
	No children									.045	1.046
N		N=3,830		N=3,660		N=3,617		N=3,573		N=3,533	
Constant		.445	1.561	.749	2.115**	-1.445	.233*	-1.919	.147**	-1.985	.137**
Omnibus Test		Model χ^2 (10) 432.293***		Model χ^2 (6) 66.756***		Model χ^2 (5) 124.142***		Model χ^2 (5) 67.767***		Model χ^2 (3) 36.770	
Cox & Snell R^2		.104		.119		.147		.161		.169	
Nagelkerke R^2		.158		.181		.223		.245		.257	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

c) ***Receipt*** of meals and other basic needs from adult children and its frequency

Table 6-4 shows the coefficients of model predicting labour force participation among older people with the inclusion of receipt of support with meals and other basic needs and its frequency in Model 5.

Model 5 in Table 6-4 reveals similar results to Tables 6-2 and 6-3 with respect to the effect of demographic, health, socio-economic and geographical characteristics. The analysis found that age, gender, marital status, ethnicity, the number of health problems, the number of difficulties with ADLs, education, the number of income sources, region and the place of residence were significant predictors of labour force participation. More importantly, this analysis showed that older people for whom their adult children prepared meals and provided other basic needs at least once a month were 41 percent less likely to participate in the labour market compared to those for whom their children never provided such support.

The effect of receiving support with house chores from adult children and its frequency on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics is discussed in the following section and the analysis is presented in Table 6-5.

Table 6-5: Coefficient of model predicting labour force participation among older people (Model 5: *Receipt* of house chores assistance from adult children and its frequency)

		Model 1		Model 2		Model 3		Model 4		Model 5	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.409	.664***	-.362	.686***	-.445	.641***	-.412	.662***	-.423	.655***
	70-74	-.870	.419***	-.809	.445***	-.944	.389***	-.943	.390***	-.954	.385***
	75 and above	-1.409	.244***	-1.319	.267***	-1.549	.212***	-1.543	.214***	-1.545	.213***
Gender	Male (Ref)				1.00		1.00		1.00		1.00
	Female	-1.242	.289***	-1.185	.306***	-1.313	.269***	-1.317	.268***	-1.300	.272***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.741	.476**	-.687	.503**	-.833	.435***	-.887	.412***	-.647	.524*
	Widowed	-.861	.423***	-.796	.451**	-1.007	.365***	-1.032	.356***	-.761	.467*
	Divorced/Separated	-.006	.994	.017	1.018	-.091	.913	-.135	.874	.063	1.065
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.116	1.123	.098	1.103	.238	1.268*	.356	1.427**	.314	1.369**
	Indians	-.792	.453***	-.727	.484***	-.587	.556**	-.345	.708	-.346	.707
	Others	.674	1.962***	.678	1.969***	.601	1.824***	.158	1.171	.152	1.164
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.330	.719**	-.359	.699***	-.393	.675***	-.379	.685***
	2 health problems			-357	.700**	-.425	.654***	-.456	.634***	-.457	.633***

	3 or more health problems			-.747	.474***	-.804	.447**	-.813	.444***	-.811	.444***
Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.284	.753*	-.268	.765	-.295	.745*	-.284	.752*
	Difficulty in 2 ADLs			-.444	.641*	-.456	.634*	-.465	.628*	-.435	.647*
	Difficulty in 3 or more ADLs			-.446	.640**	-.469	.626**	-.522	.593**	-.511	.600**
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.350	.705**	-.314	.730*	-.327	.721*
	Secondary education					-.753	.471***	-.571	.565***	-.604	.547***
	Post-secondary or higher education					-1.170	.310***	-.859	.424***	-.911	.402***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.855	17.375***	2.940	18.914***	2.918	18.504***
	2 or more income sources					3.264	26.149***	3.346	28.386***	3.332	27.999***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.272	.762	-.243	.784
	Northern region							.194	1.214	.165	1.180
	East Coast region							-.106	.900	-.126	.881
	Sabah, Sarawak & Labuan							.437	1.548**	.435	1.546**

Place of residence	Urban (Ref)								1.00		1.00
	Rural							.637	1.891***	.615	1.849***
Frequency of support received (House chores)	Never (Ref)										1.00
	At least once in a few months									.018	1.018
	At least once a month									-.312	.732***
	No children									.146	1.157
N		N=3,829		N=3,660		N=3,611		N=3,560		N=3,553	
Constant		.453	1.572	.759	2.135**	-1.439	.237*	-1.916	.147**	-1.981	.138**
Omnibus Test		Model χ^2 (10)		Model χ^2 (6)		Model χ^2 (5)		Model χ^2 (5)		Model χ^2 (3)	
		439.103***		66.791***		124.231***		69.692***		14.272**	
Cox & Snell R^2		.106		.121		.148		.163		.166	
Nagelkerke R^2		.161		.184		.225		.248		.253	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

d. ***Receipt*** of house chores assistance from adult children and its frequency

Table 6-5 shows the coefficients of the model predicting labour force participation among older people with the inclusion of receipt of support with house chores and its frequency from adult children in Model 5. Similar to the results in Tables 6-2 to 6-4, the present analysis showed that the risk of participation in the labour force decreases with age, the number of health problems, the number of difficulties with ADLs, and the level of education. Older people who were female, married or widowed were less likely to be in the labour market compared to their reference group. Older people who were of a Chinese background, living in rural areas and those residing in Sabah, Sarawak and Labuan were more likely to participate in the labour market compared to their comparison groups.

However, the most important result to be highlighted here is that older people who received assistance from their adult children with house chores at least once a month were 27 percent less likely to work than older people who never received such assistance.

It is now necessary to analyse the impact of receiving personal care and its frequency from adult children on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics as indicated in Table 6-6.

Table 6-6: Coefficient of model predicting labour force participation among older people (Model 5: *Receipt* of personal care from adult children and its frequency)

		Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.412	.662***	-.365	.694***	-.450	.638***	-.419	.658***	-.407	.666***
	70-74	-.860	.423***	-.798	.450***	-.937	.392***	-.937	.392***	-.926	.396***
	75 and above	-1.408	.245***	-1.317	.268***	-1.547	.213***	-1.545	.213***	-1.516	.219***
Gender	Male (Ref)				1.00		1.00		1.00		1.00
	Female	-1.237	.290***	-1.179	.308***	-1.308	.270***	-1.310	.270***	-1.278	.279***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.733	.480**	-.678	.507**	-.821	.440***	-.873	.418***	-.635	.530*
	Widowed	-.853	.426***	-.790	.454**	-1.001	.368***	-1.032	.359***	-.732	.481*
	Divorced/Separated	.006	1.006	.030	1.031	-.077	.926	-.126	.882	.072	1.075
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.119	1.127	.101	1.106	.241	1.273*	.354	1.425**	.344	1.411**
	Indians	-.769	.464***	-.700	.496***	-.563	.570**	-.322	.725	-.312	.732
	Others	.684	1.982***	.689	1.993***	.606	1.833***	.179	1.196	.156	1.169
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.318	.727**	-.348	.706***	-.383	.682***	-.371	.690***
	2 health problems			-359	.698**	-.427	.652***	-.456	.634***	-.443	.642***

	3 or more health problems			-.740	.477***	-.797	.450**	-.803	.448***	-.794	.452***
Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.279	.757*	-.266	.766	-.290	.748*	-.279	.757
	Difficulty in 2 ADLs			-.447	.640*	-.457	.633*	-.470	.625*	-.459	.632*
	Difficulty in 3 or more ADLs			-.451	.637**	-.474	.622**	-.525	.591**	-.492	.611**
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.364	.695**	-.330	.719*	-.335	.715**
	Secondary education					-.767	.464***	-.588	.556***	-.611	.543***
	Post-secondary or higher education					-1.185	.306***	-.877	.416***	-.966	.381***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.862	17.502***	2.944	18.993***	2.913	18.416***
	2 or more income sources					3.253	25.875***	3.332	27.983***	3.306	27.272***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.286	.751	-.285	.752
	Northern region							.169	1.185	.146	1.157
	East Coast region							-.129	.879	-.147	.863
	Sabah, Sarawak & Labuan							.406	1.500**	.442	1.557**

Place of residence	Urban (Ref)								1.00		1.00
	Rural							.628	1.875***	.605	1.832***
Frequency of support received (Personal Care)	Never (Ref)										1.00
	At least once in a few months									-.030	.970
	At least once a month									-.466	.627***
	No children									.115	1.121
N		N=3,828		N=3,658		N=3,616		N=3,564		N=3,554	
Constant		.444	1.559	.745	2.106**	-1.443	.236*	-1.895	.150**	-1.963	.140**
Omnibus Test		Model χ^2 (10) 436.046***		Model χ^2 (6) 66.504***		Model χ^2 (5) 123.439***		Model χ^2 (5) 67.880***		Model χ^2 (3) 24.777***	
Cox & Snell R^2		.105		.120		.147		.162		.167	
Nagelkerke R^2		.160		.183		.224		.246		.254	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

e) ***Receipt*** of personal care from adult children and its frequency

Table 6-6 shows the coefficients of the model predicting labour force participation among older people after the inclusion of Model 5 for the receipt of personal care from adult children and its frequency. The analysis revealed that predictors such as age, gender, marital status, ethnicity, the number of health problems, the number of difficulties with ADLs, education, the number of income sources, region and the place of residence are important in explaining labour participation among older people.

Turning now to the variables on the receipt of personal care and its frequency, results in Model 5 showed that such receipt from adult children had a significant effect on older people's work participation. For example, older people who received personal care at least once a month from their adult children were 37 percent less likely to work compared to older people who never received any personal care from their adult children.

The following section will examine the effect of receiving support from adult children in terms of accompanying older persons on the latter's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics.

Table 6-7: Coefficients of model predicting labour force participation among older people (Model 5: *Receipt* of support in terms of accompany from adult children and its frequency)

		Model 1		Model 2		Model 3		Model 4		Model 5	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.419	.657***	-.374	.688***	-.458	.633***	-.428	.652***	-.424	.655***
	70-74	-.868	.420***	-.806	.447***	-.947	.388***	-.946	.388***	-.948	.388***
	75 and above	-1.422	.241***	-1.332	.264***	-1.567	.209***	-1.562	.210***	-1.545	.213***
Gender	Male (Ref)				1.00		1.00		1.00		1.00
	Female	-1.238	.290***	-1.179	.308***	-1.311	.270***	-1.314	.269***	-1.264	.283***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.725	.484**	-.671	.511**	-.818	.441***	-.870	.419***	-.637	.529*
	Widowed	-.855	.425***	-.793	.452**	-1.007	.365***	-1.031	.357***	-.771	.463*
	Divorced/Separated	-.005	.995	.018	1.018	-.091	.913	-.134	.875	.054	1.055
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.119	1.126	.100	1.105	.241	1.273*	.359	1.431**	.327	1.387**
	Indians	-.782	.458***	-.713	.490***	-.576	.562**	-.341	.711	-.351	.704
	Others	.678	1.970***	.685	1.984***	.608	1.836***	.192	1.211	.184	1.202
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.326	.722**	-.355	.701***	-.386	.680***	-.368	.692***
	2 health problems			-351	.704**	-.421	.656***	-.449	.638***	-.439	.645***

	3 or more health problems			-.749	.473***	-.807	.446**	-.813	.444***	-.792	.453***
Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.284	.753*	-.271	.763	-.296	.744*	-.287	.750*
	Difficulty in 2 ADLs			-.457	.633*	-.468	.626*	-.478	.620*	-.467	.627*
	Difficulty in 3 or more ADLs			-.447	.639**	-.473	.623**	-.523	.593**	-.501	.606**
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.353	.703**	-.314	.731*	-.304	.738**
	Secondary education					-.775	.460***	-.595	.551***	-.602	.548***
	Post-secondary and higher education					-1.199	.302***	-.890	.411***	-.922	.398***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.865	17.543***	2.948	19.075***	2.978	19.651***
	2 or more income sources					3.264	26.160***	3.346	28.388***	3.382	29.419***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.270	.764	-.264	.768
	Northern region							.188	1.207	.177	1.194
	East Coast region							-.114	.892	-.126	.881
	Sabah, Sarawak & Labuan							.403	1.496**	.386	1.471**

Place of residence	Urban (Ref)								1.00		1.00
	Rural							.627	1.873***	.622	1.864***
Frequency of support received (Accompany)	Never (Ref)										1.00
	At least once in a few months									-.220	.802*
	At least once a month									-.405	.667***
	No children									.062	1.064
N		N=3,844		N=3,673		N=3,622		N=3,571		N=3,557	
Constant		.451	1.569	.754	2.125**	-1.437	.238*	-1.904	.149**	-1.995	.136**
Omnibus Test		Model χ^2 (10) 441.233***		Model χ^2 (6) 67.771***		Model χ^2 (5) 126.941***		Model χ^2 (5) 67.524***		Model χ^2 (3) 15.971***	
Cox & Snell R^2		.106		.121		.149		.163		.167	
Nagelkerke R^2		.161		.184		.226		.248		.253	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

g. ***Receipt*** of support in the form of being accompanied by adult children to places requested and its frequency

Table 6-7 shows the coefficients of the model predicting labour force participation among older people, adding Model 5 on the receipt of support from adult children with accompanying older people to places requested and its frequency.

The inclusion of the receipt of support and its frequency variable in Model 5 showed that older people whom their adult children accompanied at least once in a few months to places they requested were 20 percent less likely to participate in the labour market than older people whom their children never accompanied. Those who were accompanied at least once in a month were 33 percent less likely to work than those who were never accompanied.

Overall, findings in section 6.2.2 suggest that older people who received various types of support from their adult children more frequently were less likely to participate in the labour market. Results showed that older people receiving support from adult children with cash, bill payments, meals and other basic needs, house chores, care and assistance in terms of being accompanied to places at least once a month were less likely to participate in the labour market compared to those who never received such assistance from their adult children. As this section analysed the receipt of support from adult children and its frequency, the next section therefore, moves on to analyse the effect of provision of support to adult children and its frequency on the labour participation of older people, controlling for a range of demographic, health, socio-economic and geographical characteristics.

6.2.3 The effect of the *provision* of support by older people to adult children and its frequency on the older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics.

In this section, the effect of the provision of support by older people and its frequency to adult children controlling for a range of demographic, health, socio-economic and geographical characteristics will be analysed separately. However, the effect of provision of support with house chores, personal care and listening to personal problems were found not significant, thus these variables were not discussed in this section.

Table 6-8: Coefficients of model predicting labour force participation among older people (Model 5: *Provision* of cash assistance by older people to adult children and its frequency)

		Model 1		Model 2		Model 3		Model 4		Model 5	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.414	.661***	-.367	.693***	-.452	.637***	-.419	.658***	-.373	.689***
	70-74	-.862	.422***	-.800	.449***	-.942	.390***	-.940	.390***	-.856	.425***
	75 and above	-1.438	.237***	-1.345	.261***	-1.578	.206***	-1.571	.208***	-1.473	.229***
Gender	Male (Ref)				1.00		1.00		1.00		1.00
	Female	-1.220	.295***	-1.160	.313***	-1.290	.275***	-1.291	.275***	-1.265	.282***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.733	.480**	-.680	.506**	-.825	.438***	-.878	.416***	-.608	.545*
	Widowed	-.861	.423***	-.799	.450**	-1.008	.365***	-1.033	.356***	-.776	.460*
	Divorced/Separated	-.008	.992	.015	1.016	-.092	.912	-.135	.874	.144	1.155
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.120	1.123	.100	1.105	.243	1.275*	.359	1.431**	.459	1.582***
	Indians	-.772	.462***	-.705	.494***	-.569	.566**	-.332	.717	-.283	.754
	Others	.658	1.931***	.663	1.940***	.585	1.795***	.174	1.190	.216	1.241
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.317	.728**	-.344	.709***	-.377	.686***	-.384	.681***
	2 health problems			-.344	.709**	-.413	.662***	-.440	.644***	-.442	.643***

	3 or more health problems			-.738	.478***	-.792	.453**	-.798	.450***	-.804	.447***
Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.280	.756*	-.267	.766	-.289	.749*	-.297	.743*
	Difficulty in 2 ADLs			-.449	.638*	-.460	.631*	-.469	.626*	-.479	.619*
	Difficulty in 3 or more ADLs			-.464	.629**	-.490	.613**	-.541	.582***	-.528	.590**
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.349	.706**	-.312	.732*	-.336	.715**
	Secondary education					-.769	.463***	-.588	.555***	-.667	.513***
	Post-secondary or higher education					-1.177	.308***	-.864	.421***	-.983	.374***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.856	17.399***	2.938	18.876***	2.916	18.460***
	2 or more income sources					3.251	25.810***	3.326	27.821***	3.296	26.996***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.287	.751	-.244	.784
	Northern region							.173	1.189	.191	1.210
	East Coast region							-.121	.886	-.136	.873
	Sabah, Sarawak & Labuan							.391	1.478*	.367	1.444*

Place of residence	Urban (Ref)								1.00		1.00
	Rural							.626	1.870***	.612	1.845***
Frequency of support (Cash assistance)	Never (Ref)										1.00
	At least once in a few months									.343	1.410**
	At least once a month									.640	1.896***
	No children									.443	1.558*
N		N=3,842		N=3,679		N=3,636		N=3,585		N=3,559	
Constant		.440	1.552	.738	2.091**	-1.453	.234*	-1.909	.148**	-2.349	.095***
Omnibus Test		Model χ^2 (10) 433.426***		Model χ^2 (6) 66.556***		Model χ^2 (5) 124.729***		Model χ^2 (5) 67.166***		Model χ^2 (3) 29.680***	
Cox & Snell R^2		.104		.119		.147		.161		.167	
Nagelkerke R^2		.158		.181		.223		.245		.255	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

a) ***Provision*** of cash assistance by older people to adult children and its frequency.

Based on Table 6-8, analysis revealed that demographic, health, socio-economic and geographic factors have a significant effect on older people's labour participation. Referring to Model 5 in Table 6-8, the variables of age, number of health problems, number of difficulties with ADLs and education were negatively associated with labour participation. For instance, older people aged 65-69 were 31 percent less likely to participate in the labour market compared to older people aged 60-64, and this compared with people aged 70-74, and 75 and over, who were 58 and 77 percent less likely, respectively, to be in the labour market compared to the comparison group. Among other factors, region and place of residence were also significant predictors of labour participation. For example, older people from rural areas were 1.85 times more likely to participate in the labour market compared to older people from urban areas.

Interestingly, older people who provided cash assistance to their adult children at least once in a few months were 1.41 times more likely to participate in the labour market compared to those who never provided such assistance to their children. Those who provided cash assistance to their adult children at least once a month were 1.90 times more likely to engage in the labour market than those who never provided such assistance to their adult children.

What follows is the analysis of the effect of providing support with bill payments and its frequency to adult children on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics.

Table 6-9: Coefficients of model predicting labour force participation among older people (Model 5: *Provision* of bill payment by older people to adult children and its frequency)

		Model 1		Model 2		Model 3		Model 4		Model 5	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.405	.667***	-.358	.699***	-.443	.642***	-.409	.664***	-.392	.689***
	70-74	-.855	.425***	-.792	.453***	-.934	.393***	-.932	.394***	-.902	.425***
	75 and above	-1.408	.245***	-1.316	.268***	-1.552	.212***	-1.544	.213***	-1.503	.229***
Gender	Male (Ref)				1.00		1.00		1.00		1.00
	Female	-1.224	.294***	-1.165	.312***	-1.296	.274***	-1.297	.273***	-1.274	.282***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.729	.483**	-.674	.509**	-.818	.441***	-.870	.419***	-.612	.545*
	Widowed	-.869	.419***	-.805	.447**	-1.015	.362***	-1.038	.354***	-.799	.460*
	Divorced/Separated	-.011	.989	.012	1.012	-.095	.909	-.139	.870	.079	1.155
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.110	1.116	.090	1.094	.233	1.262*	.345	1.412**	.356	1.582***
	Indians	-.779	.459***	-.711	.491***	-.575	.563**	-.340	.712	-.355	.754
	Others	.667	1.948***	.672	1.958***	.592	1.808***	.171	1.186	.180	1.241
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.332	.718***	-.359	.698***	-.392	.676***	-.401	.681***
	2 health problems			-.353	.703**	-.421	.657***	-.449	.638***	-.455	.643***

	3 or more health problems			-.750	.472***	-.805	.447**	-.811	.445***	-.822	.447***
Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.284	.753*	-.272	.762	-.295	.745*	-.296	.743*
	Difficulty in 2 ADLs			-.453	.636*	-.465	.628*	-.475	.622*	-.477	.619*
	Difficulty in 3 or more ADLs			-.455	.634**	-.483	.617**	-.534	.586**	-.547	.590**
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.359	.698**	-.321	.725*	-.338	.715**
	Secondary education					-.779	.459***	-.597	.550***	-.625	.513***
	Post-secondary or higher education					-1.193	.303***	-.881	.414***	-.916	.374***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.867	17.579***	2.950	19.098***	2.972	18.460***
	2 or more income sources					3.258	25.990***	3.335	28.072***	3.352	26.996***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.286	.751	-.283	.784
	Northern region							.171	1.187	.154	1.210
	East Coast region							-.131	.877	-.113	.873
	Sabah, Sarawak & Labuan							.399	1.491*	.339	1.444*

Place of residence	Urban (Ref)								1.00		1.00
	Rural							.627	1.873***	.630	1.845***
Frequency of support (Bills)	Never (Ref)										1.00
	At least once in a few months									.521	1.684*
	At least once a month									.422	1.526**
	No children									.333	1.395*
N		N=3,854		N=3,691		N=3,637		N=3,584		N=3,586	
Constant		.440	1.553	.746	2.108**	-1.444	.236*	-1.902	.149**	-2.225	.108***
Omnibus Test		Model χ^2 (10) 435.646***		Model χ^2 (6) 68.391***		Model χ^2 (5) 125.908***		Model χ^2 (5) 68.137***		Model χ^2 (3) 12.072**	
Cox & Snell R^2		.104		.120		.147		.162		.164	
Nagelkerke R^2		.159		.182		.224		.246		.250	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

b. ***Provision*** of bill payment by older people to adult children and its frequency

Table 6-9 shows the coefficients of the model predicting labour force participation among older people when the provision of bill payment assistance and its frequency was added into the analysis in Model 5. Based on the results, age, gender, marital status, ethnicity, the number of health problems, the number of difficulties with ADLs, education, the number of income sources, region, and place of residence have a significant effect on labour participation. For example, education was negatively associated with labour participation. Older people who attained pre-school and primary school were 28.5 percent less likely to participate in the labour market compared to those with no formal education. Older people who attained secondary education were 48.7 percent less likely to participate in the labour market compared to those with no education. Older people with post-secondary or higher education were 62.6 percent less likely to participate in the labour market compared to the reference group.

More importantly, the regression analysis showed that the provision of bill payment assistance and its frequency to adult children is an important determinant of labour participation. Older people who supported their adult children by paying bills at least once in a few months were 1.68 times more likely to work than those who never supported their adult children in terms of bill payment. Along the same lines, older people who supported their adult children at least once a month were 1.53 times more likely to work compared to those who never supported their children in terms of settling bills.

Unlike the gradient found in the provision of cash assistance by older people to their adult children and its frequency, the frequency gradient for the provision of bill payment assistance by older people to their adult children appears to show a slight difference. Older people who provided bill payment assistance to their adult children at least once every few months had higher odds of working than those who provided such support to their adult children at least once a month.

Having discussed the effect of the provision of bill payment assistance and its frequency to adult children, the next section will move on to analyse the effect of support provision with meals and other basic needs and its frequency to adult children on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristics.

Table 6-10: Coefficients of model predicting labour force participation among older people (Model 5: *Provision* of meals and other basic needs by older people to adult children and its frequency)

		Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.428	.652***	-.378	.685***	-.461	.631***	-.428	.652***	-.408	.665***
	70-74	-.860	.423***	-.797	.451***	-.935	.393***	-.932	.394***	-.871	.418***
	75 and above	-1.426	.240***	-1.332	.264***	-1.561	.210***	-1.553	.212***	-1.511	.221***
Gender	Male (Ref)		1.00		1.00		1.00		1.00		1.00
	Female	-1.229	.293***	-1.170	.310***	-1.296	.274***	-1.298	.273***	-1.366	.255***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.731	.481**	-.679	.507**	-.820	.440***	-.873	.418***	-.649	.523*
	Widowed	-.863	.422***	-.800	.450**	-1.007	.365***	-1.031	.357***	-.790	.454*
	Divorced/Separated	-.006	.994	.018	1.018	-.088	.916	-.131	.877	.092	1.097
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.115	1.122	.096	1.101	.239	1.270*	.351	1.420**	.378	1.460**
	Indians	-.776	.460***	-.708	.493***	-.573	.564**	-.341	.711	-.331	.718
	Others	.659	1.933***	.664	1.943***	.588	1.800***	.176	1.192	.209	1.232
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.316	.729**	-.345	.708***	-.379	.685***	-.381	.683***
	2 health problems			-.340	.712**	-.407	.666***	-.433	.649***	-.449	.638***

	3 or more health problems			-.742	.476***	-.795	.451***	-.802	.448***	-.811	.445***
Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.290	.748*	-.273	.761*	-.295	.744*	-.285	.752*
	Difficulty in 2 ADLs			-.454	.635*	-.464	.629*	-.473	.623*	-.471	.624*
	Difficulty in 3 or more ADLs			-.491	.612**	-.517	.596**	-.566	.568***	-.562	.570***
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.347	.707**	-.309	.734*	-.327	.721**
	Secondary education					-.757	.469***	-.578	.561***	-.609	.544***
	Post-secondary or higher education					-1.161	.313***	-.854	.426***	-.900	.407***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.855	17.379***	2.937	18.857***	2.960	19.297***
	2 or more income sources					3.242	25.591***	3.319	27.636***	3.328	27.890***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.277	.758	-.289	.749
	Northern region							.176	1.192	.195	1.215
	East Coast region							-.120	.887	-.089	.915
	Sabah, Sarawak & Labuan							.393	1.481*	.350	1.418*

Place of residence	Urban (Ref)								1.00		1.00
	Rural							.618	1.855***	.640	1.897***
Frequency of support (Meals and other basic needs)	Never (Ref)										1.00
	At least once in a few months									.449	1.566***
	At least once a month									.421	1.524***
	No children									.437	1.547*
N		N=3,832		N=3,669		N=3,626		N=3,576		N=3,563	
Constant		.449	1.567	.749	2.115**	-1.448	.235*	-1.903	.149**	-2.310	.099***
Omnibus Test		Model χ^2 (10) 435.420***		Model χ^2 (6) 68.507***		Model χ^2 (5) 121.833***		Model χ^2 (5) 65.567***		Model χ^2 (3) 23.360***	
Cox & Snell R^2		.105		.120		.147		.161		.166	
Nagelkerke R^2		.159		.183		.224		.245		.253	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

c) ***Provision*** of meals and other basic needs by older people to adult children and its frequency

Table 6-10 shows that model 5 was constructed after the inclusion of support provision of meals and other basic needs and its frequency to adult children with demographic, health, socio-economic and geographic factors. Similar to the previous analysis, the variables of age, gender, marital status, ethnicity, number of health problems, number of difficulties with ADLs, education, number of income sources, region, and place of residence had a significant effect on labour participation.

Older people who supported their adult children in terms of providing meals and other basic needs at least once in a few months were 1.57 times more likely to be in the labour market compared to those who never provided such support. Those who supported their adult children with meals and other basic needs at least once a month were 1.52 times more likely to participate in the labour market than those who never provided support with meals and other basic needs to their adult children. Similar to the gradient found among older people who provided bill payment assistance to their adult children and its frequency, those who contributed support at least once every few months had higher odds of working than those who contributed at least once a month.

In the next section, the effect of providing support in terms of accompanying adult children to places requested and its frequency on older people's odds of being in the labour market, controlling for a range of demographic, health, socio-economic and geographical characteristic will be analysed.

Table 6-11: Coefficients of model predicting labour force participation among older people (Model 5: *Provision* of accompanying adult children to places and its frequency)

		Model 1		Model 2		Model 3		Model 4		Model 5	
		B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	60-64 (Ref)		1.00		1.00		1.00		1.00		1.00
	65-69	-.418	.658***	-.370	.691***	-.451	.637***	-.419	.658***	-.391	.676***
	70-74	-.862	.422***	-.799	.450***	-.939	.391***	-.935	.393***	-.881	.414***
	75 and above	-1.416	.243***	-1.323	.266***	-1.554	.211***	-1.548	.213***	-1.495	.224***
Gender	Male (Ref)		1.00		1.00		1.00		1.00		1.00
	Female	-1.227	.293***	-1.168	.311***	-1.297	.273***	-1.298	.273***	-1.294	.274***
Marital Status	Single never married (Ref)		1.00		1.00		1.00		1.00		1.00
	Married	-.722	.486**	-.668	.513**	-.811	.445***	-.864	.422***	-.627	.534*
	Widowed	-.866	.421***	-.803	.448**	-1.012	.363***	-1.036	.355***	-.809	.445*
	Divorced/Separated	-.011	.989	.014	1.014	-.092	.912	-.136	.872	.074	1.077
Ethnicity	Malays (Ref)		1.00		1.00		1.00		1.00		1.00
	Chinese	.106	1.122	.089	1.093	.232	1.261*	.348	1.416**	.353	1.424**
	Indians	-.788	.455***	-.718	.488***	-.582	.559**	-.345	.708	-.336	.714
	Others	.660	1.934***	.666	1.947***	.587	1.798***	.174	1.190	.195	1.215
Number of health problems	None (Ref)				1.00		1.00		1.00		1.00
	1 health problem			-.329	.719**	-.358	.699***	-.392	.676***	-.405	.667***
	2 health problems			-.351	.704**	-.417	.659***	-.443	.642***	-.453	.636***

	3 or more health problems			-.749	.473***	-.805	.447***	-.810	.445***	-.822	.440***
Number of difficulties with ADLs	None (Ref)				1.00		1.00		1.00		1.00
	Difficulty in 1 ADL			-.269	.764*	-.264	.768	-.288	.750*	-.287	.750*
	Difficulty in 2 ADLs			-.456	.634*	-.468	.626*	-.478	.620*	-.500	.607*
	Difficulty in 3 or more ADLs			-.458	.633**	-.485	.616**	-.536	.585***	-.526	.591**
Education	No formal education (Ref)						1.00		1.00		1.00
	Pre-school and primary					-.361	.697**	-.323	.724*	-.339	.712**
	Secondary education					-.773	.462***	-.590	.554***	-.623	.537***
	Post-secondary or higher education					-1.184	.306***	-.873	.418***	-.912	.402***
Number of income sources	None (Ref)						1.00		1.00		1.00
	1 income source					2.856	17.393***	2.933	18.780***	2.950	19.110***
	2 or more income sources					3.246	25.682***	3.316	27.552***	3.324	27.782***
Region	Southern region (Ref)								1.00		1.00
	Central region							-.285	.752	-.281	.755
	Northern region							.171	1.186	.178	1.195
	East Coast region							-.125	.882	-.104	.901
	Sabah, Sarawak & Labuan							.391	1.478*	.352	1.422*

Place of residence	Urban (Ref)								1.00		1.00
	Rural							.630	1.878***	.654	1.924***
Frequency of support (Accompanying adult children	Never (Ref)										1.00
	At least once in a few months									.179	1.196
	At least once a month									.479	1.614***
	No children									.358	1.431
N		N=3,837		N=3,667		N=3,622		N=3,569		N=3,578	
Constant		.450	1.568	.751	2.119**	-1.431	.239*	-1.885	.152**	-2.239	.107***
Omnibus Test		Model χ^2 (10) 437.460***		Model χ^2 (6) 67.552***		Model χ^2 (5) 123.455***		Model χ^2 (5) 67.864***		Model χ^2 (3) 14.937**	
Cox & Snell R^2		.105		.120		.148		.162		.165	
Nagelkerke R^2		.160		.183		.224		.246		.251	

Source: Author's own analysis, MPFS-5, 2014
*Note: *p < .05; **p < .01; *** p < .001*

d) ***Provision*** of support in terms of accompanying adult children to places requested and its frequency

In Table 6-11, Model 5 was fitted to include the provision of support in terms of accompanying adult children to places and its frequency along with older people's demographic, health, socio-economic and geographical characteristics.

Based on the analysis, it was found that older people who provided support by accompanying their adult children to places at least once a month were 1.61 times more likely to participate in the labour market compared to older people who never accompanied their adult children to places.

To sum up section 6.2.3, the study suggests that older people who provided support to their adult children in various ways were more likely to be in the labour market compared to older people who did not provide support to their adult children. Results showed that those who provided support in terms of bill payments, meals and other basic needs, and accompanying adult children to places required, were more likely to participate in the labour market compared to those who never provided such support to their adult children. Results also showed that those who contributed at least once a month had higher odds of working than those who contributed at least once every few months. To highlight an example, older people who provided cash assistance more frequently to their adult children were more likely to participate in the labour market compared to those who never provided cash assistance to their adult children. However, in terms of the provision of bill payment and meals and basic needs, those who supported their adult children at least once every few months had higher odds of working than those who did so at least once a month. The summary of the main findings obtained from the results will be provided in the next section.

6.3 Summary of the logistic regression results

To recapitulate, the section included logistic regression results and was divided into 3 main parts to address the research questions. The first model included the variables on demographic characteristics, and the effect of age, gender, marital status and ethnicity were observed. The second model added health characteristics, while in the third model, variables related to socio-economic characteristics were added. The fourth model included geographical characteristics and finally the fifth model included the support exchange variables. Five models were used in the analysis except for the analysis in Table 6-1, section 6.2.1. which only contained 4 models.

In all of the analysis, Model 1 showed that age, gender, marital status and ethnicity were significant predictors of older people's labour force participation. For instance, Model 1 in Table 6-2 showed that respondents aged 65-69 were 34 percent less likely than respondents aged 60-64 to participate in the labour market, and respondents in older age groups were even less likely to do so compared to the reference group. Regarding gender, females were 71 percent less likely than males to be in the labour market. Married and widowed persons were 52 and 60 percent, respectively, less likely to be working compared to single never married older people. In terms of ethnicity, Indians were 54 percent less likely compared to Malays to participate in the labour market, while older people from other ethnic background were twice as likely as Malays to work.

In Model 2, the variables of age, gender, marital status and ethnicity retained their significance level after the inclusion of health characteristics. Model 2 in Table 6-2 further showed that the number of health problems and the number of difficulties with ADLs were significant predictors of labour participation. Older people who experienced more health problems and difficulties in daily living were less likely to participate in the labour market. For instance, older people who reported 1 health problem were 28 percent less likely than those with no health problem to participate in the labour market, and such chances decreased with the increasing number of health problems.

In Model 3, when a bulk of socio-economic variables were added to the demographic and health variables, it was observed that age, gender, marital status, ethnicity, the number of health problems and the number of difficulties with ADLs maintained their significance level in predicting older people's labour participation. In terms of ethnicity, while coming from an Indian and other ethnic background maintained their significance level, coming from a Chinese group also showed a significant effect on labour participation.

More importantly, the results of Model 3 further showed that education and the number of income sources had a significant effect on labour participation. For example, older people who had attained pre-school and primary education were 30 percent less likely than older people with no education to be in the labour market; and higher educational qualifications were associated with an increasingly lower risk of working. Regarding the number of sources of income, older people with 1 source of income were 17.59 times more likely than older people without any sources of income to be in the labour market, while those with 2 or more sources of income were 25 times more likely to participate in the labour market compared to the reference group.

Model 4 was fitted while including geographical factors with demographic, health and socio-economic factors. The results showed that age, gender, marital status, the number of health problems, the number of difficulties with ADLs, education and the number of income sources maintained their significance level. However, the significance of coming from an Indian and other

ethnic background began to disappear. For example, Table 6-2 showed that in terms of ethnicity, Chinese older people were 1.43 times more likely than Malays to be in the labour market.

The results of Model 4 further showed that region and place of residence were significant predictors of labour participation. Table 6-2 revealed that older people who resided in Sabah, Sarawak and Labuan were 1.50 times more likely than those who resided in the Southern region to be in the labour market. In terms of one's place of residence, older people from rural areas were 1.85 times more likely than urbanites to participate in the labour market.

Model 5 was constructed after the inclusion of support exchange and its frequency characteristics with demographic, health, socio-economic and geographical characteristics. All variables (age, female, married or widowed, Chinese ethnicity, number of health problems, number of difficulties with ADLs, education, number of income sources, region and place of residence) retained their significance level even after the inclusion of support exchange and its frequency variables in Model 5.

Model 5 further illustrated that receipt of support and its frequency from adult children with cash assistance, bill payment, meals and other basic needs, house chores, personal care, and being accompanied to places required, were important predictors of being in the labour market. For example, Model 5 in Table 6-2 showed that older people who received cash assistance from their adult children at least once in a few months were 33 percent less likely to participate in the labour market compared to older people who never received such assistance. Similarly, older people who received cash assistance from their adult children at least once a month were 68 percent less likely to participate in the labour market compared to those who never received such assistance. This implied that older people who received cash assistance more frequently from their adult children were less likely to participate in the labour market compared to those who never received any cash assistance from their adult children. This study also revealed that older people who received support from their adult children in terms of bill payments, meals and other basic needs, house chores and personal care at least once a month were less likely to participate in the labour market compared to those who never received such support from their adult children. However, the receipt of support and its frequency in terms of listening to personal problems was not a significant predictor of labour participation and the variable was dropped from the analysis.

Model 5 also revealed that the provision of support and its frequency to adult children with cash assistance, bill payment, meals and other basic needs, and accompanying adult children to places required were significant predictors for labour force participation. The analysis showed that older people who provided support to their adult children more frequently were more likely to participate in the labour market compared to those who never provided support to their adult

children. Referring to Model 5 in Table 6-8, older people who provided cash assistance at least once in a few months were 1.41 times more likely to be in the labour market than those who never provided such assistance. Similarly, those who provided cash assistance to their adult children at least once a month were 1.90 times more likely to be in the labour market compared their reference category. However, the provision of support to one's children in terms of house chores, personal care, and listening to personal problems were not significant predictors for labour participation and thus were dropped from the analysis.

6.4 Chapter summary

The purpose of this chapter was to unravel the relationship between labour participation, co-residence and intergenerational support. This chapter has described the main findings from the logistic regression results.

Overall, the study has shown that respondents who were older, female and married or widowed were less likely to participate in the labour market than their counterparts. On the other hand, those who were Chinese, with more income sources, who lived in rural areas and those residing in Sabah, Sarawak and Labuan, were more likely to be in the labour market than their comparison groups.

Furthermore, respondents with a higher education, those who experienced greater difficulty in daily living and those who lived with more health problems were less likely to be in the labour market than the reference group. Surprisingly, co-residence was not a statistically significant factor.

One of the more significant findings to emerge from these findings was that older people who received support from their adult children more frequently were less likely to participate in the labour market compared to older people who never received any support from their adult children. On the other hand, with the exception of the provision of bill payment assistance and the provision of meals and other basic needs, older people who provided support more frequently to their adult children were more likely to participate in the labour market than those who never provided any support to their adult children. Those who provided bill payment assistance to their adult children less frequently were more likely to participate in the labour market compared to those who never provided such assistance to their adult children.

The results obtained from this analysis will be critically discussed in the next chapter.

Chapter 7: Discussion and conclusion

7.1 Introduction

This chapter summarises the key findings of this study and considers the implications for labour policies, particularly in relation to the labour market participation of older people in Malaysia. This study has offered an insight into the complex relationship for older people of working in later life and supporting one's family. It also sheds some light on parents' and children's ongoing commitment in support exchange. Although Malaysia still has time to prepare until it reaches an aged nation status by 2035, time is rather short compared to other Asian countries (Hamid, 2015). The present policies are still undergoing improvement in preparing for future population ageing challenges (Kovács, 2009). Thus, it is hoped that the research findings from this study will help policymakers, as policies should be geared towards adjusting labour market institutions, enhancing the family support system and improving broader support networks including social care (Hamid and Chai, 2013; Tey, 2017; Vlachantoni, 2017). This is to ensure that older people can optimise their self-potential through a healthy, active and productive life which supports family well-being and opportunities for employment.

Thus, this chapter provides an overview and critical discussion of the key findings and a conclusion of the study. Section 7.2 revisits the research aims and research questions. This section provides answers to each research question outlined in Chapter 1 and critically discusses the key findings of this research in the context of existing literature. This is followed by an outline of the research contribution in Section 7.3. The potential policy implications derived from the findings of this study are discussed in Section 7.4. This chapter provides a conclusion in Section 7.5 by identifying the limitations of the study, and how they may have affected the findings, and by setting out suggestions for future research in this area.

7.2 Revisiting the research aims and research questions

To recapitulate, the first question in this study sought to investigate the demographic, health, socio-economic and geographical characteristics that are associated with the labour participation of older people. The second question examined the association between older people's co-residence with their children and the former's labour participation. The third question relates to examining the association between the receipt of intergenerational support by older people, and the frequency of such receipt, with their labour participation. Finally, this study aimed to address

the association between the provision of intergenerational support to adult children from older people, and the frequency of such provision, with older people's labour participation.

7.2.1 Research question 1: What are the demographic, health, socio-economic and geographical characteristics that are associated with the labour participation of older people?

As expected, the present study confirms a negative association between the respondents' age and their labour participation. This finding was consistent with other studies which showed that labour participation declines as age increases (Friedman *et al.*, 2001; Gwee and Fernandez, 2010; Adhikari *et al.*, 2011; Giang and Nguyen, 2016). For example, a study using a probit regression model by Giang and Nguyen (2016) to analyse rural older people in Vietnam suggested that advanced aged (80 and over) people were less likely to participate in the labour market compared to younger age groups. Along the same lines, it was observed in this current study that older people in the more advanced age group (i.e. 75 and above) were less likely to work than the younger age group (i.e. 60–64). This result can be explained by the fact that, in general, advanced age restricted older people's participation in the labour market (Mohd, 2014) due to the deterioration of health and declining physical strength among older people as reported in studies by Giang and Le (2015) in Vietnam. Apart from health constraints, another possible explanation for such a result is the existence of age discriminatory employment policies such as a mandatory retirement age which also tend to be a barrier to labour participation as age increases (Raymo *et al.*, 2004; Arifin and Ananta, 2009; Gwee and Fernandez, 2010; Wan Ahmad *et al.*, 2011). Older people who were financially secure through the availability of a pension or other old age security may therefore decide to retire and enjoy their old age upon reaching the age of retirement (Arifin and Ananta, 2009).

The current study found that gender was a significant factor determining labour force participation. Older females were less likely to participate in the labour market compared to older males. This association was commonly observable worldwide (United Nations, 2011) and matched observations in earlier studies conducted in other Asian countries (Adhikari *et al.*, 2011; Reddy, 2016). This finding suggests that the majority of current older females are marginalised and often excluded from economic participation. On one hand, men were more likely to be employed because they were considered to be morally obligated to safeguard and take care of the family's well-being and financial status (Keeratipongpaiboon, 2012). On the other hand labour participation was typically lower among women than men, which might be due to women's household responsibilities including the 'double burden' of taking care of grandchildren and other dependants, which may limit their opportunity to participate in the labour market (Clark and

Anker, 1990; United Nations, 2011; Reddy, 2016). This also accords with an exploratory study regarding the future of Malaysian older employees by Benjamin *et al.* (2000), which showed that more females (24.1%) than males (3.3%) mentioned family responsibilities as a main factor for not working in old age. Regrettably, such commitments force women to bear unpaid physical labour (Omar, 2003) which is not counted as employment and further widens the gap of labour participation rates between genders (Staudinger *et al.*, 2016). The dominance of older males in the labour market might be explained by the fact that they might be retired from their previous job whereas women may have never participated in the labour market during their lifetime. Additionally, older women were found more likely to depend on children's income rather than their own work income (Giang and Le, 2015; Tey *et al.*, 2015). A study in Malaysia found that older females received a higher mean income from their children compared to older males (Chan *et al.*, 2010c).

However, despite gender disparity in the labour market, statistical data from the Malaysian Labour Force Survey Report 2017 showed that the female labour participation rate has been increasing from 44.5 percent in 1982 to 54.7 percent in 2017 (Department of Statistics Malaysia, 2018). This indicator proved that there is a strong possibility that the situation will be different for future cohorts of women. Malaysia, like many other regions, is experiencing a feminisation of ageing due to the longer life expectancy among women relative to men (Hamid, 2015). This is leading to women experiencing longer periods of retirement living and outliving their spouses. Additionally, the increasing labour participation among women may impact labour market patterns and family support in the future (Vlachantoni, 2010; van Gameren and Naranjo, 2015a), as both labour participation and informal caregiving require a trade-off (Carmichael *et al.*, 2009). The future challenges associated with this phenomena will therefore be related to family care and cost (Ong *et al.*, 2009), child-care policies (Abu Bakar and Abdullah, 2007) and living arrangements (Ong *et al.*, 2009). Taken together, these findings suggest that future labour market policies will need to be more gender sensitive.

According to Clark *et al.* (1999), in many countries it has been observed that higher widowhood rates are related to higher labour participation rates among older women. However, the findings in this study gave a different picture in this regard. In terms of marital status, this study showed that widowed older persons were less likely than single never married older people to participate in the labour market. This finding is in agreement with Adhikari *et al.* (2011) who conducted research in Thailand and Giang and Le (2015) in Vietnam. Giang and Le (2015) found that widowed females in rural Vietnam were less likely to participate in the labour market compared to their single never married counterparts since older women tend to be supported by financial assistance from their adult children. Another interesting finding is that those who were married

were also less likely to participate in the labour market compared to single never married older people. This result is consistent with the study by Austen and Birch (2005) in Australia that showed married older women were less likely to participate in the labour market compared to the unmarried older women. Similarly, Hill (2002) conducted a study in the United States using the 1997 National Longitudinal Survey of Mature Women and found that married women aged 60—65 years old were less likely to participate in the labour market compared to the unmarried women. According to Hill (2002), married women were less likely to have financial need as they tend to rely on retirement income of men, thus reducing older women's need to participate in the labour market.

This study found that ethnicity played a significant role in determining the labour participation of older people. However, the findings of the current study were not in line with some of the previous studies, such as the research by Giang and Nguyen (2016) in which ethnicity had no significant effect on older people's labour participation in rural Vietnam. A study conducted in Malaysia by Gwee and Fernandez (2010) showed that individuals of Chinese ethnicity were more likely to participate in the labour market compared to other races in Penang; however, the results were not significant. In this current study, older people of Chinese ethnicity were more likely than Malay older persons to participate in the labour market. This finding may be due to experiences of demographic transition varying among the three major ethnic groups in Malaysia (Ong *et al.*, 2009) due to the distinctive demographic and socio-economic (Chai and Hamid, 2015), historical institutional and economic factors (Saw, 2015b) among each ethnic group. For example, due to historical factors, differences of occupational patterns among the main ethnic groups existed because of some specialisation in economic activities along ethnic lines (Saw, 2015b). Historically during the colonial period, Malays were predominantly engaged in agricultural and fishing occupations and resided in rural areas. In contrast, Chinese persons resided in urban areas and hence played a dominant role in business and trading, while Indian persons were plantation workers working in estates (Wu and Rudkin, 2000). The introduction of the New Economic Policy in 1970 aimed to restructure society in order to eliminate the identification of race with economic function. It has successfully reduced inter-ethnic economic disparities, especially between Malay and Chinese persons by giving more privileges to the Malay/Bumiputera groups in public sector employment (Jomo, 2005). Thus, this finding may help us to better understand Malaysia's multiracial society and that the extent and types of participation in economic activities may vary considerably between ethnic groups and are later reflected in older people's economic well-being.

The findings regarding ethnic differences in this study may also be explained by ethnic differences in demographic ageing. Low mortality, longer life expectancy and low fertility rates have had a great impact among Chinese Malaysian persons (refer 2.2.1) compared to the other two ethnic

groups (Chai and Hamid, 2015; Saw, 2015b). With the Chinese ethnic group recording a greater proportion of older people compared to other ethnic groups (Hamid, 2015) and the ageing process taking place faster than in other ethnic groups (Chai and Hamid, 2015), it can therefore be suggested that the ability to live longer means that more resources are needed to finance additional years of life (Vaghefi *et al.*, 2016). Apart from that, longer life expectancy may increase the tendency of older people to outlive their available income and savings (Chan *et al.*, 2010a; Hamid, 2015) and in turn may necessitate Chinese older people to work longer in their old age.

Another possible explanation for the ethnic differentials in older people's labour participation can be attributed to the value system and cultural norms of each ethnic group (Hamid *et al.*, 2012; Tey *et al.*, 2015). The Malaysian Chinese group, who hold a similar Confucian identity as other populations in East Asia, place a greater emphasis on hard work and striving for upward mobility for their own children (Tey *et al.*, 2015). Thus, such cultural or emotional motivations for continuing to work into old age, which were not studied in this research, may partly justify such findings. Another possible reason is the differential utilisation of health care services by different ethnic groups in Malaysia (Tey *et al.*, 2015). This was supported by a previous report which analysed the 2004 MPFS-4 data and found that Chinese persons were the least likely to report poor health compared to other ethnic groups (Teh *et al.*, 2014). This may indicate that older Chinese persons were likely to be healthier than other ethnic groups, which would enable them to participate in the labour market. It is not surprising that successful agers were more likely to be among the Chinese ethnicity compared to other ethnicities in Malaysia due to the fact that they were more socially advantaged in terms of better education, income and better access to modern medical facilities and services as found in a study by Hamid *et al.* (2012). In general, therefore it seems that policy should take into account the varying needs of different groups in order to have a balanced development of services for older people.

As would be expected, the health status of older people played an important role in labour participation (Dwyer and Mitchell, 1999; Do *et al.*, 2014). The findings in this study are compatible with findings of past studies on the association between the number of health problems and labour participation (Ng *et al.*, 2011). The current study showed that older people with more health problems were less likely to participate in the labour market compared to those who had no health problems. This is consistent with a previous study in Australia which found that older people with multiple chronic health conditions were more likely to have their labour participation affected than those with no chronic health conditions (Schofield *et al.*, 2013). Similarly, Giang and Le (2018) in Vietnam found that older people having at least one chronic health condition would result in a lower probability of participating in the labour market compared to those without chronic health conditions. This is the same as the results found in

Giang and Nguyen (2016), and those of other studies, and suggests that generally healthier persons were more likely to work compared to persons with health problems (Pandey, 2009; Adhikari *et al.*, 2011; Giang and Le, 2015). A study by Passey *et al.* (2012) on the impact of diabetes prevention programmes on labour participation among older Australians found that prevention of diabetes will have significant impact in increasing the labour participation and income of older people. Thus, this study suggests that maintaining health among older people is important in securing economic activities and to ensure continued participation of labour among older people (Passey *et al.*, 2012).

Similarly, health problems can cause various physical and cognitive limitations with different implications for older persons' capacity to continue working in the labour market (van Gameren, 2008). The results of this study showed that older people who had more difficulties in performing activities of daily living (ADLs) were less likely to work compared to those who had no difficulties in performing ADLs. This is in line with research by Adhikari *et al.* (2011) in Thailand and Giang and Nguyen (2016) among rural older people in Vietnam which found significant negative impacts from difficulties in ADLs on labour participation as older people aged. The reason might be due to the lack of work environment and limited infrastructure being provided in workplace for older people with difficulties in ADLs to perform their work comfortably, hence discouraging people with such disabilities to participate in the labour market (Bloomer, 2014). The evidence in this study suggest ways to enhance healthcare utilisation, provision of suitable workplace for people with difficulties performing ADLs and stresses the importance of being healthy in old age, as good health would enable older people to perform activities of daily living which could further facilitate the continued labour participation of older people.

The current study showed that the educational attainment of older people was a significant factor associated with labour participation. Older people who had attained a higher level of education were less likely to participate in the labour market compared to those who had no education. This was a common finding observed in many Asia-Pacific regions (Ong *et al.*, 2009), and it was consistent with research by Reddy (2016) in India, Giang and Le (2015) in Vietnam, Adhikari *et al.* (2011) in Thailand and Fadayomi and Olurinola (2014) in Nigeria, where a negative association was found between education attainment and labour participation. These findings, however, contradicted the traditional theory of human capital developed by Becker (1962) and Mincer (1974) which suggests that education performs a central role in human capital formation which in turn has a positive impact on the workers' life time earnings through employment.

In the context of Malaysia, the presence in the labour market of older people with lower levels of education could be explained by the fact that the majority of the older cohort belonged to the

pre-independence cohort who had limited access to education compared to the younger generation or the post-independence cohort (Hamid, 2015). However, it is almost certain that the present cohorts of middle-aged older people have a better chance of having received a higher education due to the remarkable progress initiated by the government in increasing the literacy rate (15–24 years) from 46.1 percent in 1957 to 97.6 percent in 2016 (Department of Statistics Malaysia, 2017a). Improvement of the overall education system in Malaysia after independence (Lim, 2012) was largely gained from the New Economic Policy (NEP) introduced in 1970 (Jomo, 2005). Better access to the education system has benefited Malaysians, ensuring that future cohorts of older people will be better educated. An implication of this is the possibility of encouraging life-long learning as an important resource for adjustment in later life (Lim, 2012). This idea is strengthened by Ong *et al.* (2009) who argued that there will be a need to preserve tacit knowledge among older people and to encourage the transfer of knowledge from the older to the younger generations to be embedded in labour market policy.

With regard to the number of income sources used as a proxy to indicate socio-economic status of older people, the results from this study were contrary to expectations. It was initially expected that no sources of income may indicate financial pressure which may compel older people to participate in the labour market. Such an effect was observed by Reddy (2016) in India, where older people who belonged to deprived social and economic backgrounds were more likely to participate in the labour market. This study, however, has shown that older people with more sources of income were more likely to participate in the labour market compared to older people with no source of income. This is consistent with the study by Adhikari *et al.* (2011) and Giang and Nguyen (2016) which have shown a positive relationship between household financial status and labour participation. The finding of this study may indicate that sources of income that older people depend on may not be sufficient or good enough to stop older people from participating in the labour market. Additional evidence for this conclusion comes from other studies, which have found that, even with old age protections in Malaysia such as pension schemes, Employees' Provident Fund and old age cash assistance, savings were often insufficient to finance the retirement expenses of retirees (Caraher, 2003; Abd Samad and Mansor, 2013; Holzmann, 2015). With the increasing cost of living and maintenance of old age, retirement savings may diminish over time (Chan *et al.*, 2010c). This may increase the risk of older people falling into poverty (Vaghefi *et al.*, 2016). Thus older people will have to participate in the labour market besides depending on their retirement savings and other sources of income as additional financial support to be able to live decently in old age (Rahardjo *et al.*, 2009). This is supported by findings from Sulaiman and Masud (2012) and Vaghefi *et al.* (2016) which suggest that provision of work and

self-employment opportunities for older people may strengthen the income security of retirees in Malaysia.

In terms of place of residence, the current study found that older people residing in rural areas were more likely to participate in the labour market compared to those residing in urban areas. This result contradicted the study of Lam *et al.* (2006) which found that South African older people were more likely to work in urban areas due to the wider job opportunities in urban areas compared to rural areas. The result from this study, however, was consistent with research from other Asian countries such as Reddy (2016) conducted in India and Giang and Le (2015) and Giang and Le (2018) in Vietnam, where older people living in rural areas were more prone to participate in the labour market compared to their urban counterparts. It seems possible that this result was due to the relative social and economic disadvantage of people in rural areas. People residing in rural areas were generally from poorer socio-economic backgrounds (Wan Ahmad *et al.*, 2011; Reddy, 2016) and had lower educational attainment (Wan Ahmad *et al.*, 2011) compared to their urban counterparts who were better-off in socio-economic and educational terms. It can thus be suggested that older people in rural areas were compelled to work in order to sustain their lives in old age (Selvaratnam and Poo, 2007). As the poverty rate is much higher in rural areas compared to urban areas in Malaysia (Siwar *et al.*, 2016), labour participation may also become a coping mechanism for older people which prevents them from falling into poverty (Reddy, 2016).

The rural–urban differentials in the labour participation among older people can be explained by the type of work in which they were previously engaged (Tey and Hamid, 2014). Although people in rural areas had limited work opportunities (Siwar *et al.*, 2016) and were left with difficulties in finding jobs with fair wages (Khan *et al.*, 2010), older people in rural areas were mostly employed in the agricultural sector and informal sectors (Wan Ahmad *et al.*, 2011), and earnings from agricultural activities usually represent their main source of income (Siwar *et al.*, 2016). Older people in the rural sector were also more likely to continue working, as employment in the informal sector is not subject to a mandatory retirement age. On the other hand, a lower participation rate in urban areas among older people may be explained by the fact that they were working in the urban modern sector where they were subject to a mandatory retirement age, were provided with formal social protection and were likely to rely on pension and savings instead of participating in the labour market to finance their retirement expenses (Tey and Hamid, 2014). The evidence from this study suggests that greater attention should be focused on strengthening social allowances for older people in conjunction with socio-economic development.

Region was also a significant determinant of labour force participation. In this study, it was found that older people residing in Sabah, Sarawak and Labuan were more likely to participate in the

labour market compared to those residing in the Southern region. This distinction probably comes from the differences in economic and socio-economic conditions for each location. Sabah, Sarawak and Labuan, being in the East of Malaysia and located far from the country's capital city, have often reported a high incidence of poverty as these states were considered underdeveloped (Mohd *et al.*, 2018) with a high concentration on agriculture, forestry and fishing activities (Saw, 2015b). To date, Sabah has recorded the highest poverty incidence in Malaysia (Mohd *et al.*, 2018). This may be the reason why older people in these states were more likely to participate in the labour market, as they were financially forced to support their own life by working.

7.2.2 Research question 2: To what extent is older people's co-residence with their adult children associated with older people's labour participation?

In this current study, co-residence, which was a variable associated with demographic characteristic, showed no statistically significant association with labour participation. This means that co-residence with adult children was not an important factor in determining the labour participation of older people. The result from this study differed from other published studies, for example Giang and Pfau (2007), who showed that the majority of older people in Vietnam who were co-residing with their adult children were currently working. A study by Adhikari *et al.* (2011) in Thailand found that older people who co-resided with adult children were less likely to work in the labour market due to older people's dependency on their children for support. This study also has been unable to demonstrate similar findings to the work by Lam *et al.* (2006) in South Africa, Adhikari *et al.* (2011) in Thailand and Van Gameren and Naranjo (2015b) in Mexico which noted that older people who do not co-reside with their adult children were more likely to participate in the labour market. Evidence from the analysis of the Malaysian Household Income Expenditure survey found that older people who were working were the least likely to co-reside with adult children (Mohd *et al.*, 2017). The lack of a statistically significant association between co-residence and labour participation in this study was perhaps a bit surprising as it was different than the initial assumption. However, there are several possible explanations for this result. One possible reason for the differences in findings are that there are likely to be many other factors associated with labour participation of older people.

Another potential reason may relate to the definition of co-residence itself. In the context of Malaysia, it is common for older people to live nearby or adjacent to their adult children and assist one another, but not actually co-reside under the same roof as found in countries like Thailand, Vietnam and the Philippines (Natividad, 2008). Older people residing in the same residential area with their adult children have commonly been referred to as experiencing quasi-co-residence (Ngin and DaVanzo, 1999) or virtual co-residence (Natividad, 2008). The inability to

differentiate these between co-residence and quasi-co-residence in this study could have affected the measurement of co-residence in the survey, and over-estimated the prevalence of co-residence, which researchers could consider in their future studies. To illustrate, the question C12 in the questionnaire was "Where do they (adult children) live?" with the corresponding options of answers: co-reside, living in the same residential area, same district, same state, other state and other country.

Although co-residence did not show a significant association with the labour participation of older people in Malaysia, nevertheless the results of this research implied that urbanisation and modernisation in the Malaysian context have caused major changes to relationships and structures of families (Natividad, 2008). Forced by economic factors, the rural–urban migration drawing younger persons from rural areas to urban areas has contributed to changes in the traditional family structure. As a result, the extended family is now on the decline (Hamid and Chai, 2013) and currently being replaced by the nuclear family (Abdul Aziz and Yusooff, 2012), thus threatening the viability of relying upon family to care for older people through co-residence. Furthermore, with the increasing number of older people living alone (Evans *et al.*, 2017) the importance of understanding the future diversity of family types and its challenges for policy, especially on adult social care and employment, should not be neglected.

7.2.3 Research question 3: To what extent is the intergenerational support *received* by older people from their adult children and its frequency associated with the labour participation of older people?

It is a common observation in Malaysia, like many other Asian countries, that older people are very much dependent on family support (adult children) for their retirement expenses (Mohd *et al.*, 2010; Wan Ahmad *et al.*, 2011; Lin and Yi, 2013; Tey *et al.*, 2015). Results from this study may help us to further understand that family and informal care through intergenerational support indeed play an important role in supporting older people, although some older people have to work to make ends meet (Tey and Hamid, 2014). This is also in line with the study by Lillard and Willis (1997) in Malaysia, which showed that children continue to represent an a important source of old age security. In this study, it was found that the receipt of support with cash, bill payment, meals, household chores, personal care and being accompanied, and the frequency of such receipt, were significant in determining older people's labour participation. For example, older people who received bill payment more frequently from their adult children were less likely to participate in the labour market compared to older people who do not receive such assistance from their adult children. The findings from this study reaffirm previous literature that certain older people who rely on their adult children for economic support were less likely to participate

in the labour market (Tan and Ng, 2000; Ofstedal *et al.*, 2004). For example, older women, given their disadvantage in the labour market, were generally more likely than older men to rely on their adult children for economic support rather than participating in the labour market in their old age (Tan and Ng, 2000). The results from this study also confirm the negative association between intergenerational support received with labour participation as observed in the study by Wan Ahmad *et al.* (2011) among rural older Malaysians, which found that family becomes an important source of support for older people who do not participate in the labour market. In the same study, Wan Ahmad *et al.* (2011) further observed that for rural older people who participated in the labour market, the limited support received from their adult children was one of the main reasons which compelled older people to work to support themselves.

In terms of financial support, older people who received cash assistance more frequently were less likely to participate in the labour market compared to those who never received such assistance. This may be explained by the income effect that remittance or monetary assistance receipts may relieve the budget constraints of the recipients, thus reducing the incentive to participate in the labour market among the recipients (Amuedo-Dorantes and Pozo, 2006). Similarly, a study in rural China found that remittance from adult children may increase the reservation wage of non-migrating family members and cause disincentive to work among those left behind including older parents (Démurger and Li, 2012).

However, this finding has further illustrated that more frequent support received by older people indicates a higher reliance on family support, thus deterring older people from having to participate in the labour market. This evidence will serve as a base for future studies as there is no research including the frequency of support and its relationship to older people's decision to participate in the labour market. In line with this, Démurger (2015) found that increase in income from remittances in the long term may create dependency on income from remittance, thus dampening the incentive to work in the labour market among support recipients.

In the same vein, this study also indicates that older people who do not have immediate access to family-provided intergenerational support may need to participate in the labour market to support themselves. For example, older people who received care from their adult children more frequently were less likely to be in the labour market compared to those who never received care from their adult children. This is in line with the study by Wan Ahmad *et al.* (2011) on rural older people in Malaysia that found that a lack of provision of support from adult children was among the reasons for older people's participation in the labour market.

While many studies have concentrated on financial support from adult children and the relationship with the labour participation of older people, such as Nguyen *et al.* (2012) in Vietnam

and Cameron and Cobb-Clark (2008) in Indonesia, this study has further contributed additional evidence on intergenerational support and its association with labour participation. The key strength of this study is that types of support beyond financial support, and their frequency, were used to explore the determinants of labour participation in more detail than previous research. For example, in terms of household management, this study indicated that older people who received help with household chores more frequently from their adult children were less likely to participate in the labour market compared to those who never received such assistance from their adult children. The evidence from this study suggests that not only were financial support and its frequency associated with labour participation, but non-financial support, such as household chores, care giving and companionship, and its frequency were also important determinants associated with labour participation.

7.2.4 Research question 4: To what extent is the intergenerational support *provided* by older people to their adult children and its frequency associated with the labour participation of older people?

In this study, it was found that the provision of cash assistance, bill payment, meals and the act of accompanying adult children to places and its frequency of such provision by older people towards their adult children were important determinants of labour participation among older people. For example, the results showed that older people who provided cash assistance more frequently to their children were more likely to participate in the labour market compared to those who never provided cash assistance to their adult children. While previous studies in Malaysia and other non-western societies found that the flows of support were predominantly from adult children to their older parents (Lillard and Willis, 1997), there is a lack of research in developing countries focusing on the role of older people supporting their adult children (Khan, 2014). However, the findings from this study highlighted new evidence suggesting that older people in Malaysia were still supporting children into adulthood, and the more frequent the support provided to adult children, the more likely older people were to participate in the labour market. It is difficult to explain this result but it may be related to the fact that adult children's demand for support may not decline over the life course (Kalmijn, 2018), and older people need to continue working in order to provide support to their adult children. There will always be a persistent need for support, for instance, when adult children require financial aid for education and buying assets or in need of emotional support if adult children encounter family hardship (Schroeder-Butterfill, 2004). The role of older people as grandparents may also contribute support in taking care of their grandchildren, allowing the participation of their adult children in the labour market (Arpino *et al.*, 2014). The evidence from this study implies that older people continue to

provide intergenerational support to their adult children even at advanced ages, requiring them to earn from their participation in the labour market, which is consistent with the study by Schroeder-Butterfill (2004) conducted in Indonesia. This finding thus has created an important aspect for policy implications.

7.3 Policy implications and recommendations

This study focused on analysing the determinants of labour participation among older people in Malaysia. The findings of this study have a number of important implications for future practices with the aim of assisting the government to formulate labour market policies targeting older populations. Based on the analysis and the key findings from this study, it is time for the policymakers to consider re-examining current labour market policies, thinking of potential solutions and making necessary labour market policy adjustments to fit the realities of the new demographic era. Encouraging labour participation, while at the same time supporting family well-being, should be achieved not only through short-term resolutions but also long-term commitments.

It is evident from the study that as older people advance in age, they are less likely to participate in the labour market. In line with the notion to encourage active ageing, the recent increase in the mandatory age by the Malaysian government from 58 to 60 enforced in 2012 for public sector workers and the minimum retirement age of 60 enforced in 2013 for private sector workers (Tey *et al.*, 2015; Laws of Malaysia, 2016) was undoubtedly a positive move in increasing labour participation among older people (Ibrahim and Siri, 2012; Vaghefi *et al.*, 2016; Tey, 2017). Such policy enables older people to remain longer in the labour market, making use of their capacity for productivity and facilitating greater financial security (Tung and Comeau, 2012) as well as maintaining a decent standard of living (Ng *et al.*, 2005). Apart from that, increasing the retirement age would benefit the government in terms of labour planning and in its efforts to reduce Malaysia's reliance on foreign workers especially in the services and manufacturing sector (Meier, 2004; Mohd Noor *et al.*, 2011). This can be regarded as a **long term plan** as the government needs a long time to reduce the country's dependency on foreign workers (Mohd Noor *et al.*, 2011). Following the experience of other Asian countries, there is the possibility of further raising the mandatory retirement age Malaysia (Ibrahim and Siri, 2012; Ab. Wahab, 2015), for example to 62 and 67 years old as practiced in Japan and Singapore respectively (Chia *et al.*, 2008), as these adjustments reflect the increase in life expectancy, improvements in health and the rising cost of living among future older Malaysians. This can be described as a **long-term plan** to be realised in four to five years' time, similar to Singapore, which took six years from 1993 to 1999 to increase the retirement age from 60 to 62 (Thang, 2011). While the Malaysian

government is making efforts to cater to the needs of older people who still want to work after the age of 60, studying the viability of the suggested raise in the retirement age to 65 is important before implementation. As a **short-term plan** which might take 1-2 years, raising the retirement age to 65 could first be implemented as an option on a voluntary basis instead of being mandatory. Apart from considering the increase in the retirement age, it is timely that the government under the National Human Resource Policy introduces a national policy on the re-employment of older employees similar to what was introduced by Singapore in 2012 (Thang, 2011). Setting Singapore as an example of a country which shares a similar cultural background with Malaysia, the re-employment laws and policies seem to be a good practice to be adopted in Malaysia following Singapore's success in addressing the challenge of an older workforce effectively (Higgins and Vyas, 2018). As a **short-term plan**, incentives could be given to both employers and businesses that employ older employees, and to those employees who continue working beyond 60 years of age. For example, employers who recruit older workers could be given double tax deductions in order for their effort to be recognised. In addition, older employees working beyond the retirement age could be offered a tax free status for the extra years of work, as a tax incentive and considering that they have been paying income tax for the past 35 to 40 years of their working life (OECD, 2006; Loretto, 2016; Martin, 2018). Reviewing labour market policies in other countries and making gradual changes in order to fit the ever-changing demographic and socio-economic landscape in Malaysia is necessary.

In the light of the findings of this research, the government should also eliminate any age-discriminatory employment policies (Khan *et al.*, 2017) in order to encourage older people's labour participation as one of its short-term strategies. For example, salaries which are calculated according to the worker's age could be replaced by remuneration based on productivity regardless of age (Ananta and Arifin, 2009). In the current context, the enforcement of the Minimum Wage Order 2016 was seen as a good commitment by the government in prescribing minimum wage to employees regardless of their age, although this measure was only implemented for private sector workers (Ramely *et al.*, 2016). Abolishing age-discriminatory employment policies would ensure that older people who are fit, able and willing to work would not be denied employment opportunities simply because of their chronological age. The removal of age barriers in employment policies has not been addressed in the 2011 National Policy for Older Persons and Plan of Action for Older Persons (Abas @ Hamdan *et al.*, 2018) and therefore creates an opportunity for policymaking in Malaysia. Thus, in creating workplaces without age barriers and lifelong employability, it is recommended that policymakers enact policies that will encourage employers to redesign jobs in order to provide greater flexibility to older people. In addition, creating opportunities for employment with sufficient monetary reward is also one of

the approaches which can encourage older people to participate in the labour market (Staudinger *et al.*, 2016).

In line with the findings of this study, age should not be seen as a barrier to labour participation. Thus, creating opportunities for older people's labour participation requires the need to identify suitable avenues for labour participation. Self-employment, which can be more flexible than working in the formal sector, is also a viable option for older people seeking employment (Jamil *et al.*, 2014). Exploring entrepreneurial endeavour among older people is one of the possible ways to enhance financial security and productivity among current and future cohorts (Ahmad *et al.*, 2014b; Jamil *et al.*, 2014; Mohd Nor and Said, 2014). In the context of Malaysia, the concept of silver entrepreneurship is gaining popularity, and it refers to those who are retired or opting for early retirement in order to switch into an entrepreneurial career (Ahmad *et al.*, 2014b). The entrepreneurship training programmes run by the National Institute of Entrepreneurship under the Ministry of International Trade and Industry are one of the government's concerted efforts to provide entrepreneurial skills for prospective retirees (Ahmad *et al.*, 2014b). Thus, it is necessary for the government to continue designing future labour policies that can embed entrepreneurial skills in people, especially those who are near retirement.

This study has shown that education was associated with older people's labour participation, where older people who had attained a higher level of education were less likely to participate in the labour market compared to those who had no education. In the context of Malaysia, the low level of education among the current cohort of older people is closely related to their engagement in an unpaid or skilled agricultural and fishery workers in rural areas or villages (Wan Ahmad *et al.*, 2011). The tendency of older people to work in these categories is mainly due to the easy entry as these jobs do not rely on academic credentials (Rahardjo *et al.*, 2009). As current cohort of older people have had less educational opportunities than future cohorts, it is expected that this situation will change remarkably in the coming years given the dramatic improvements of the current Malaysian education system (Tey, 2017). Thus, for future older people, policies that focus on education investment and enhancing human capital among older people through training are essential so as to develop older workers through continuous learning and, thus, retain them in the labour market. Furthermore, the lifelong learning in later life is also one of the six key strategies outlined under the Malaysia's National Policy for Older Persons 2011 to facilitate access to lifelong learning among older people (Ibrahim *et al.*, 2016). In fact, the Ministry of Higher Education has initiated a **long-term plan** in making lifelong learning among Malaysians the norm by 2025 (Ministry of Education Malaysia, 2015). Some of the plans are already in place, for example the University of the Third Age (U3A) programme under the initiative of the institute of Gerontology, Universiti Putra Malaysia provides opportunities for older people to continuously

acquire knowledge and skills in collaboration with universities, community colleges and *Pusat Aktiviti Warga Emas* (Older People's Activity Centre) (Economic Planning Unit Malaysia, 2015; Ibrahim *et al.*, 2017)

As health is one of the significant factors determining labour participation among older people, there is a need for an effective labour market policy which reduces the health impact on the future older generation who wish to work. In Malaysia, the lack of social service infrastructure remains a constraint for creating a healthy participatory environment (Setterlund *et al.*, 2012). It is necessary for policymakers to promote workplace health and safety. Thus, some of the **short-term plans** include the improvement of facilities, infrastructure and working conditions which need to be addressed to ensure that older people with health conditions can work in a safe and a hazard-free environment conducive for safe working conditions (Ibid). Flexible working arrangements should be in place, for example providing and matching suitable work scopes with older workers' potential and physical conditions. Older people should be given the option to work within a job scope that requires less demanding roles so that they can work in a less stressful environment (Tey *et al.*, 2015). There is a need to redesign jobs to make them more suitable for older people, as work demands and psychosocial factors may have greater influence on the risk of developing work-related ill-health than age (Nicholson and Mayho, 2017). The implementation of flexible working hours is deemed appropriate so as to ensure that older people could work within their physical capacity (Staudinger *et al.*, 2016). The flexible working hours have become the reason for individuals in most high-income countries and upper-middle income countries to be able to continue working in old age (Staudinger *et al.*, 2016). The Work Regulations (Part-Time Workers) 2010 legislation, which was enforced by the government in October 2010, was indeed an important initiative of which older people should take advantage. Following today's vast technological advancement and social innovations, it is expected that different employment patterns may exist in the future, with future employment opportunities requiring less vigorous physical effort and better suiting the health conditions of future older people (Arifin and Ananta, 2009). In addition, with appropriate **short term** policies in place, it is hoped that older people , despite declining health conditions with the increase in age, could still work in various jobs and that work environments could be adjusted for emerging disabilities among older people (Nicholson and Mayho, 2017).

In relation to the findings of this study that declining health may reduce the probability of older people participating in the labour market, efforts to encourage better health among older people are necessary. Apart from reducing medical burden for health services, good health enables older people to engage in more hours of paid work (Ng *et al.*, 2011). Thus, in order to increase labour participation through realising healthy ageing, there are a number of reasonable **short-term**

approaches. Firstly, there is a definite need to promote a healthy lifestyle among older people and encourage every person to take responsibility of their own health so as to ensure active participation in old age (Staudinger *et al.*, 2016; Hjärtström *et al.*, 2018). Secondly, it is important to increase the access to health information, not only targeted to older people but to also in getting people in general to be aware of health issues when they are young, so that they become healthy in their old age (Ng *et al.*, 2011). Taken together, this calls for the necessity of continuing and intensifying health education programmes in order to create health care awareness among older people with cooperation from various agencies like the government, NGO's and local communities (Golinowska *et al.*, 2016). Programmes such as health literacy campaigns and other health educational programmes should be conducted to inform older people, especially in the area of the prevention of chronic health problem affecting older people (Che Din *et al.*, 2014). Taking advantage of the current era of technology, health information could be delivered in various forms of media such as television and newspapers, as well as social media like Facebook and Twitter, in order to create a better informed older population (Wakefield *et al.*, 2010; Tey, 2017). Other possible **short-term** measures that policymakers could focus on in adapting the care and health systems to meet the health needs of the ageing population include the improvement of geriatric care, the provision of healthcare through community-based approaches and the improvement of healthcare utilisation (Yunus *et al.*, 2017; NoorAni *et al.*, 2018). Apart from that, the government has also strategised a **long-term plan** in adopting a life-course approach to promote health ageing among older people. Such approach has been put forward in the National Plan of Action for Nutrition of Malaysia III 2026-2025 and the National Strategic Plan for Active Living 2016-2025 (Ho and How, 2017). By having an ageing agenda with the focus of advancing health and well-being into old age being included into national policies, it is hoped that the future programmes and services of health care will support an ageing population and potentially increase older people's participation in the labour market.

Among the important conclusions which can be deduced from the findings is that gender is an important determinant associated to labour participation. The evidence from this study suggests that the gender implications of ageing are one of the major concerns that needs to be addressed by policymakers. As older females were less likely than males to participate in the labour market, this indicates not only the existence of a gender imbalance but also inefficiencies in the Malaysian labour market (Nagaraj *et al.*, 2014). Thus this study serves as a platform for the government to introduce appropriate policy reforms on equal employment in order to narrow the gender disparity in labour participation (Loichinger and Cheng, 2018). This is important as significant gender differentials in employment patterns may also affect income security for women in later life (Vlachantoni, 2012). In the area of human resource planning, reducing gender discrimination

would allow future older females to enjoy more employment opportunities in high paid occupations rather than being predominantly in lower paid occupations.

With the increasing labour participation among females due to the continued improvements of education, expanding future employment provisions to more women is not only equitable but also economically efficient. Thus, in order to further enhance the potential of integrating older women into the paid labour market, the government needs to be more proactive in facilitating work-life balance. Although steps have been taken under the 9th Malaysia Plan (2006–2010) to create awareness of the need to balance family and career development, such policy initiatives were more focused towards working age women and not directly targeted to older women. Offering flexible working opportunities with various options such as part time working, job sharing, flexible working hours, term-time working, working from home and varying start and finish times (Department of Work and Pensions, 2010) are suitable policy measures to create desirable work environments that support the well-being of older female workers. These flexible working options are **short-term plans** where some of the actions have been already in place and are improved periodically in the public sector (Ahmad *et al.*, 2014a). However, the private sector should be encouraged to follow such practice in the future (Ahmad *et al.*, 2014a). Nevertheless, since older people are a heterogeneous group and ageing has different consequences for men and women (Tan and Ng, 2000), it is crucial that the planning of labour market policies should be comprehensive and gender sensitive.

The study also found that region is associated to labour participation of older people. Older people who were residing in East Malaysia, which encompasses Sabah, Sarawak and Labuan, were more likely to be in the labour market compared to those who were residing in the Southern region in Malaysia. A possible explanation for this might relate to the regional economic imbalance between East Malaysia and West Malaysia (Peninsular Malaysia which includes Southern, Northern, East Coast and Central region), with the former being less urbanised than the latter. This may produce a differential impact on different sets of population, especially older people (Masud and Haron, 2008). In fact, Sabah and Sarawak recorded the highest and second highest incidence of poverty respectively in 2016 (Department of Statistics Malaysia, 2017b). With a lower economic development and a lack of rural basic infrastructure in most parts of this region, older people's labour participation was mainly attributable to their relatively low education level, which forced them to rely on low-wage agricultural and fisheries activities to sustain their livelihood in old age (Masud and Haron, 2008). These findings clearly illuminate the importance of continuing to pursue appropriate regional planning and development policies in accelerating regional growth for a better geographic balance of economic prosperity as outlined in the Eleventh Malaysia Plan (Economic Planning Unit Malaysia, 2015). The long term plan placed

emphasis on accelerating investment, providing infrastructure and reviewing plans in order to realise the investment of RM236 billion, which could further generate more job opportunities and higher incomes especially for less developed states in Malaysia (Economic Planning Unit Malaysia, 2015).

In various studies, adult children have been seen as the main providers of old age support through co-residence, as co-residence allows the close proximity necessary to provide assistance with a variety of tasks to older people (Koh and MacDonald, 2006; Chen *et al.*, 2017b). Receiving assistance from adult children through co-residence may further determine older people's decision whether to work or not work in old age. Findings from this study, however, failed to show the statistical association between co-residence and older people's labour participation. Nevertheless, this study offer some indication regarding the recent changes in the current co-residence patterns, as urbanisation is taking place rapidly in Malaysia due to the rural to urban migration (Wan Ahmad and Ismail, 2014a). Consequently, the traditional extended family co-residing arrangement has been replaced by a nuclear family structure. This occurs as working generations migrate from rural to urban areas in search of job opportunities, and, in turn, this leads to a reduction of co-residence with older parents (Aziz *et al.*, 2018). There is a likelihood of older people being left behind in rural areas which may affect their health status if proper support from their adult children is withdrawn, as found in a study by Falkingham *et al.* (2017).

However, it is expected that, following the footsteps of other developed countries, the changes in the demographic and socio-economic trends could change future patterns of co-residence and living arrangements among older people as older people who are better educated would likely prefer their own living lifestyle which is different to older cohorts (Mohd Tobi *et al*., 2017). The current housing options available for older people initiated by the government are day care centres and elderly homes, while old persons' homes, nursing homes and mobile nursing are provided by the private sector (Sulaiman *et al.*, 2006; Mohd Tobi *et al.*, 2017). Thus, as a **long-term plan,** policymakers should place emphasis on the development of new housing policy planning for older people where the links between housing, health, care and support for older people such as living in an older people's care institution/apartments or retirement home/village, are strengthened (Mohd Aini *et al.*, 2016). Although the emphasis has been on the National Policy and Plan of Action for Older Persons 2011 in ensuring an enabling and supportive environment, the implementation of policies takes time especially in terms of planning sustainable living which is integrated with individuals' care and support needs (Teck and Ji, 2018). Such housing planning would enable older people to exercise activities of daily living while living as independently as possible (Azmi *et al.*, 2017).

Besides depending on income from one's own labour participation in old age, older Malaysians have also been relying on financial and non-financial support from their adult children (Sulaiman and Masud, 2012). Studies in Malaysia have found evidence of intergenerational support flow from children to their older parents (Lillard and Willis, 1997). The findings from this study confirm previous studies and contribute additional evidence linking the receipt and frequency of support receipt with labour participation, suggesting that older people who received intergenerational support more frequently were less likely to participate in the labour market compared to older people who never received any such support. Firstly, this finding indicates that intergenerational support received by older people from their adult children can be an important source of old age support for older parents in a way that it may deter or discourage older parents from relying on their own income from labour participation. This shows that in situations where older people are not or no longer capable to participate in the labour market, family support from adult children can be an important alternative for economic security in later life. Thus, in acknowledging the importance of intergenerational support, policies towards reinforcing the family as a source of support should be placed in the national agenda. Initiatives aimed at enhancing existing policies that encourage adult children to provide support to older people are necessary. As a **short-term plan** to be realised within a decade**,** policymakers can start thinking of introducing a dependant allowance to adult children who provide monetary assistance to their older parents similar to the carers' allowance provided in Northern Ireland (Russell, 2017). The dependant allowance can be shared on an apportionment basis if it applies to more than one child. In addition, in order to accommodate the increasing female labour participation and the need to put children under the care of their parents/grandparents, a caregiver allowance could be introduced to recognise older people's contribution so that such contribution is not regarded as unpaid labour. One of the recent initiatives by the government is tax relief for parental care, effective between January 2016 to 31 Dec 2020, which has been seen as an incentive for adult children to undertake the care of their older parents (Inland Revenue Board of Malaysia, 2016). This tax relief is a one-off amount per person cared for and can be shared with other siblings for a total relief claim of MYR 1,500 (GBP 275) for a mother and the same for a father per year following certain conditions (Inland Revenue Board of Malaysia, 2016). Having only been recently implemented, it is too soon to assess the effectiveness of this policy; however, the implementation could be further extended, as it is believed that such efforts could successfully serve to instil more filial piety in younger generations.

Another important labour market policy implication which emerged from this study is that there is a need for employers to help individuals who are working and at the same time responsible for caregiving by introducing flexible work practices, as has been practiced in the United Kingdom

(Evandrou *et al.*, 2002). As issues regarding labour participation and informal care are gaining much attention in developed countries (Evandrou *et al.*, 2002; Vlachantoni, 2010; van Gameren and Naranjo, 2015a; Gautun and Bratt, 2017; Moussa, 2018), the findings of this study suggest that it is also timely for Malaysia to start formulating policy directed towards facilitating work participation and occupational efforts among adult children caring for their parents.

The findings also imply that older people's own income generated through labour participation can act as an alternative means of old age support, particularly when there is limited family support available. This is supported by a study by Sulaiman and Masud (2012) where work emerged as the strongest determinant of income security among older people in Malaysia. This finding may be an important indication that with the lack of old age support systems (Tey and Hamid, 2014) and the weakening of future family support (Tey, 2017) means that older people who do not receive any assistance from their adult children or were childless or living alone may have to depend on income from their own labour participation (Tey and Hamid, 2014). In some instances, although intergenerational transfers which older people received from their adult children may offer some insurance, they may not be sufficient enough to reduce the need for older people to participate in the labour market (Cameron and Cobb-Clark, 2008). As older people are compelled to work, the possibility of older people with less affluent children to support them may worsen especially among those with bad health as such a situation can not only pose a threat to their ability to work but can also be a burden in terms of financing healthcare expenses.

With the escalating cost in health care as well as the rising cost of living, which will further deplete any savings older people may have, policymakers should design policies to address the challenge of supporting older people with fewer family members to provide support. In order to ensure older people's economic condition is sustained in old age, measures to enhance their economic security should be focusing on providing appropriate and flexible work opportunities with decent pay as well as opportunities for self-employment. While labour participation is encouraged, the findings also advocate for a greater public role in enhancing old age welfare in Malaysia. The provision of financial assistance from the government should be enhanced, especially for older people with poor health conditions or people having difficulties performing ADLs as their capacity to work might be limited. The existing assistance offered by the government, called the *Bantuan Orang Tua* (BOT) or Older People Assistance Scheme of MYR 300 (GBP 55) per month, is currently benefiting older Malaysians who are 60 years and above who have no income and no family members who can financially assist them. However, this social protection programme not only needs to be reassessed and reviewed so as to expand its coverage to include older people with

health limitation and disability, but also the BOT rate needs to be increased in line with the rising cost of living (Mohd, 2014).

Despite findings from this study and other research in Malaysia suggesting that intergenerational support predominantly flows from adult children to their older parents (Lillard and Willis, 1997), the findings from this study have shown that the role of older parents in providing support to their adult children should not be overlooked. In this study, the empirical evidence for older people acting as support providers to their adult children was examined in relation to its association with older people's labour participation. The study has shown that older people who provided support more frequently to their children were more likely to participate in the labour market compared to older people who never provided any support to their adult children. This finding may suggest that older parents still support their adult children through their labour market activities.

Based on all of the recommendations, the **most fundamental changes** regarding older people and their participation in the labour market is the policy design for older people living in rural areas. Focusing on older people in rural areas is critically important as studies show that rural areas experience more pronounced population ageing than urban areas (Hamid, 2015; Evans *et al.*, 2017). The importance of targeting specific policy responses to older people in rural areas should not be neglected in labour policies, as this study demonstrates that older people in rural areas were more likely to participate in the labour market compared to older people in urban areas (see Section 6.2.1). Older people in rural areas were not subjected to institutional factors such as retirement age; thus, there is tendency for them to participate in the labour market until their health conditions deteriorate (Wan Ahmad *et al.*, 2011). As the economic activity of most of older people in rural areas is concentrated in agriculture, fisheries and farming activities, they often find it difficult to obtain fair wages and may be consequently economically disadvantaged (Khan *et al.*, 2010). Thus, in order to increase the level of development in rural areas, there is a need to enhance the existing agricultural and rural development programmes targeting older people. In addition, emphasis has been placed on uplifting the wellbeing of rural communities including extending the provision of rural basic infrastructure such as roads, water and electricity supply, encouraging more private investment in rural areas and improving rural-urban linkages as outlined in the Eleventh Malaysia Plan (Economic Planning Unit Malaysia, 2015).

As a **short-term plan,** policymakers can re-energise rural economic activities. This includes expanding agriculture and rural production through the development of technologies and technical expertise, thus limiting the use of traditional methods of agricultural activities and thereby reducing the physical burdens to levels suitable for older people (Guo *et al.*, 2015) given

Malaysia's recent budget allocation of RM52m to the agricultural industry in 2019 (Ministry of Finance Malaysia, 2018). The government should emphasise the modernisation of the agriculture sector by providing sufficient training to render workers in this sector more adaptable to the current use of different agriculture production and processing technologies in order to meet global market demands. This can be realised through enhancing human capital capabilities among older people. The current skills of farmers, fishermen and smallholders should be assessed periodically through upskilling programmes in assisting them in adopting modern technologies (Economic Planning Unit Malaysia, 2015). Training should also encompass safe handling standards and equipment in order to minimise any health-related issues at work (Vijian, 2001). For example, mobile phones applications and portals have been used to assist early detection and warning alerts on disease outbreaks in crops. These strategies have been outlined in the Eleventh Malaysia Plan for improving productivity and the income of farmers, fisherman, and smallholders by the adoption of smart farming technologies (Economic Planning Unit Malaysia, 2015). Such strategies would result in the expansion of agricultural production, thus attracting foreign direct investment and generating higher income-generation opportunities for older people in rural areas.

Apart from that, the migration of the younger population to the cities further reduces the availability to provide informal care to older members of the family who need care, thus increasing the need to alleviate problems encountered related to loneliness, emotional strain and the lack of financial stability among older people in rural settings (Selvaratnam and Poo, 2007). Although agriculture is a predominant economic sector in rural areas, another approach policymaker could use in order to stimulate job creation in rural areas and to assist their financial independence is to diversify the rural economy. Sustainable tourism, for example, could be one of the strategies to diversify local economies (United Nations Economic Commission for Europe, 2017). As another example, the development of the handicraft industry in rural villages in Malaysia can serve as an avenue for employment opportunities and increase local wages (Redzuan and Aref, 2011) by implementing various revenue generating projects. Besides being able to promote activities in the Malaysian tourism market through community enterprises, older people in rural areas can stay active and independent which could further facilitate their continued involvement in the labour market. Such a strategy could not only improve the attractiveness of the rural areas and encourage in-migration and thus reduce rural–urban imbalance, but it could also intensify economic development for the benefit of the economic life of older people in rural areas.

7.4 Research contribution

There have been several pieces of research emerging on the determinants of labour participation among older people in developing countries; however, such research is still relatively undeveloped in Malaysia. In Malaysia, there is a quantitative study by Gwee and Fernandez (2010) which deals with older people's work participation; however, the study was limited to one state in Malaysia. There has not been research covering the whole of Malaysia and using the latest national representative data that has been devoted to the factors influencing older people to remain active in the workforce or withdraw from it. As this research employed the latest national representative MPFS-5 data, this study addressed that gap and provided up-to-date empirical evidence in this area.

In conceptual terms, the findings of this study have contributed to the knowledge on labour participation of older people by examining a combination of factors which are highlighted by the literature and which can be empirically tested through the Malaysian data. The findings of this study have shown that there are a number of demographic characteristics associated with the labour participation of older people, and this includes age, gender, marital status and ethnicity. Importantly, most previous studies that examined the determinants of labour participation among older people have not incorporated co-residence with labour participation. The issue has grown in importance in light of the current changes in living arrangements due to changes in family structures (United Nations, 2017). However, incorporating co-residence in this study found no association between co-residence and labour participation.

The current study also supported the idea that health characteristics are important for the continued participation of older people in the labour market. Two indicators of health were introduced, namely the number of health problems and the number of difficulties with ADLs, for examining the association with labour participation. In line with other previous literature (Adhikari *et al.*, 2011; Giang and Nguyen, 2016; Staudinger *et al.*, 2016; Giang and Le, 2018), the findings from this study found that health characteristics were associated with labour participation, thus, reinforcing the importance of health on an individual's labour market participation in later life.

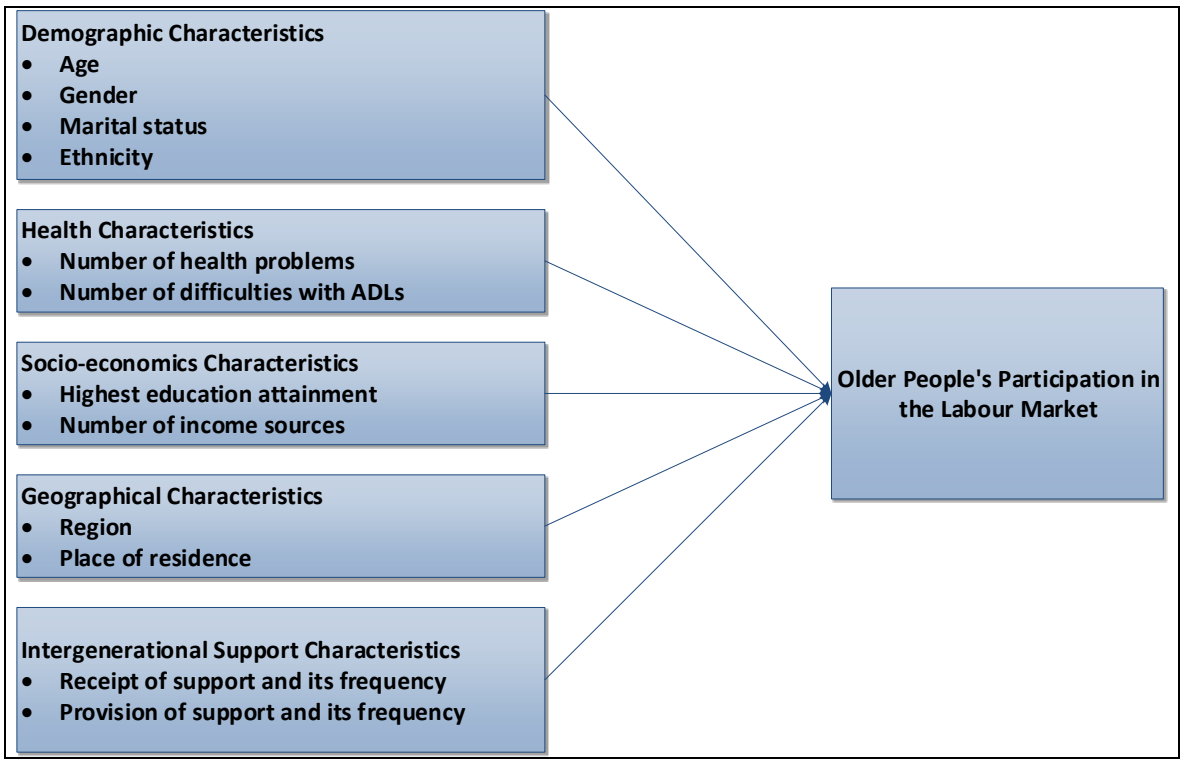
The study also provided an important contribution to advance the understanding of socio-economic characteristics with labour participation. In line with previous literature (Adhikari *et al.*, 2011; Giang and Le, 2015), highest educational attainment and the number of income sources examined in this study were associated with labour participation. The study also offers some important insights into the geographical characteristics and found that region and place of

residence were associated to labour participation, hence adding to the existing literature and provide necessary information for planning possible future policies.

The study contributed to the growing area of research by exploring the intergenerational support characteristics. The present study fills a gap in the literature by further examining the determinants of labour participation and taking into account the receipt of intergenerational support and its frequency from adult children as well as the provision of transfers and its frequency to adult children, which have not been included in any previous studies. For example, one study which incorporated co-residence and intergenerational transfers is the work by Cameron and Cobb-Clark (2008). Cameron and Cobb-Clark (2008) estimated the determinants of older people's labour supply in Indonesia, taking into account the receipt of transfers from and co-residency with children, using the 1993 Indonesia Family Life Survey. Their results suggested that transfers from children were not a substitute for older parents' earnings and that co-residence does not seem to reduce the older parents' need to work. However, these results were based upon data from over 20 years ago, and it was unclear if the results would be the same if the latest data (2007/2008) to be employed. Furthermore, this type of research has not been conducted using a Malaysian dataset. It is critical to conduct this research, maximising the use of the MPFS dataset, as it may provide evidence to inform Malaysia's policies. Furthermore, this study will serve as an important baseline for a comparative study in the future with the release of the Sixth Malaysian Population and Family Survey 2024 data.

The revised conceptual framework as presented in Figure 7.1 provide a useful foundation for policymakers wishing to improve existing policies and examine the determinants associated with the labour participation of older people.

Figure 7-1: Revised conceptual framework



Source: Author's own interpretation

7.5 Limitations and suggestions for further research

The findings from this study were important extension of the previous empirical studies of labour participation of older people in Malaysia but a number of important limitations need to be considered in subsequent research. Generally, this study is unable to encompass the entire range of determinants of labour participation among older people in Malaysia. The first limitation relates to the unavailability of data that could be accessed, a second limitation refers to gaps in data collected by the survey team, and finally there are important methodological constraints affecting the interpretation of results. Each of these limitations will now be discussed in turn.

The first limitation was due to practical constraints as access to certain data was limited. The reader should bear in mind that the study depends on the secondary data obtained from the Malaysian Population and Family Survey 2014 (MPFS-5) available from the National Population and Family Development Board, Malaysia (NPFDB). Although efforts were made to obtain the data from the NPFDB using the standard procedure, unfortunately, not all data were made available to the public. For example, the data on the level of income were not accessible. The lack of data on income had limited the scope of the analysis using an important socio-economic characteristic. For example Adhikari *et al.* (2011) uses average total income per year to determine labour participation among older people in Thailand and found that older people whose family income was low were less likely to be in the labour market than those whose family income was

high. This study was not able to capture whether income level is associated with labour participation due to the absence of information. Such information is critically important to consider in future studies as older people were more likely to be exposed to economic vulnerability (Lloyds-Sherlock, 2000) and studies have shown that poverty increases with age (Mohd, 2014). Studies have found that active labour market policies could reduce the incidence of poverty among older people (Maes, 2011), however for some older people with less capacity to participate in the labour market, old age poverty may pose further challenge if no policy is in place to safeguard their economic well-being. This could be one of the recommendations for government departments to make this income data made available to the public and for the wider research community in the future. This study can be enriched if the respondents' income level was included in future research as it would enhance our understanding of whether the economic status of older people can influence their labour participation decisions thus taking policy measures to safeguard the economic well-being through social safety nets program for older people.

Secondly, there are also limitations in the data collected by the survey team, which could affect the results. For example, the survey conducted by the NPFDB does not encompass data on the amount or value of intergenerational monetary transfers received by older people. Thus, it is also beyond the scope of this study to examine the detailed characteristics of intergenerational transfers. An existing research that investigates the relationship between monetary transfers from adult children and labour participation of older people is the work of Nguyen *et al.* (2012) in Vietnam. According to Nguyen *et al.* (2012) USD 83 of transfer per year from adult children were found to reduce the labour supply of older women by half an hour per week. Nevertheless, in overcoming this limitation, this research uses the frequency of support provision instead of the value of transfers in order to examine the nature of intergenerational financial transfers, which goes some way to enhancing our understanding of this factor. Future studies can include the amount of money received/ provided by older parents as it may suggest an interesting pattern of intergenerational financial transfers between older parents and their adult children. Such investigation could allow some insights into whether transfers were responsive to the needs of the parents and the ability of the children to offer financial support to their parents.

Another couple of missing elements not covered in the survey are the hours of work as a measure of labour supply and the spouse's working status. Unlike the Indonesian Family Life Survey (IFLS) which provides information on the respondents' normal weekly hours of work, the MPFS-5 does not provide sufficient measures of older people's labour supply. As for Malaysia, according to the Institute of Labour Market Information and Analysis (2017) the common work hours per week utilises four bands: less than 20 hours; b) between 20 and 29 hours, c) between 30 and 39 hours;

and d) 40 hours and over and can be applied in the next MPFS survey for all categories of workers be it with or without formal contract, paid or unpaid, self-employed and family workers. Future works using such information would extend existing study in understanding the relationship between work hours in labour participation with health, family and well-being of older people (ILO, 2016). A study in Japan using longitudinal study by Kajitani (2011) found that older males aged 60 and over could maintain their health by participating in the labour market with a reduced work hours (at less than 35 hours). Apart from that, including the spouse's working status in future research will be an important socio-economic characteristic associated to the respondent's labour participation. A study by Chiu and Chen (2013) in Taiwan has shown that wife's decision to participate in the labour market increases husband's likelihood of participation in the labour market.

The choice of employing cross-sectional data was closely linked to the research question of the study. Conducting quantitative analysis of nationally representative data can yield findings that are relevant to policymakers at the national level, and is therefore the most suitable approach in addressing the aims and objectives of this research (Singh, 2007; Adhikari *et al.*, 2011). However, there are limitations in the use of single round surveys, which have been critically discussed earlier in Section 4.2.2 and Section 4.3.1. In terms of methodology, the findings of the research were limited by the use of a cross sectional design as all of the factors analysed in this study were measured at a single point in time (Bryman, 2015). This means that the results of this study could help in providing evidence of statistical associations but were limited in terms of showing the causal relationship between a range of factors and older people's labour force participation. For instance, findings from this study showed a significant negative association between the number of health problems and labour participation, however were unable to find a cause and effect of such a relationship between the variables. The use of a cross-sectional design does not allow further investigation on whether labour participation would result in older people reporting a greater number of health problems or vice versa. Another example is in terms of examining life course processes which may be difficult to be interpreted in a meaningful way. Qualitative research on this topic may provide a richer description of the complexity of the relationship between family support and labour participation (Bryman, 2015). The interpretation of the results could certainly be enhanced by in-depth interviews to ascertain the actual understanding of older people's experience and preferences in their decisions to participate in the labour market in the context of their living arrangements, and their role as both the recipients and providers of support within their family. It would be interesting to incorporate mixed methods and combine the quantitative analysis with in-debt interviews to obtain more rich data in future research. Apart from that, combining the use of longitudinal data in order to address questions of causality

between labour market participants, support exchange and co-residence, would also address related research questions (Bryman, 2015). In fact, there is a lack of longitudinal surveys in Malaysia on older people. It is hope that this study can be a platform to persuade the government and raise concern on the importance of having a longitudinal survey to look into care over the life course. By having both cross-sectional and longitudinal datasets will bring huge advantage to add to the growing body of multidisciplinary data to address important issues of ageing in Malaysia.

7.6 Conclusion

This chapter has discussed and elaborated on the main findings and policy implications of this thesis. Despite the limitations, this research was able to present a comprehensive study on the relationship between intergenerational transfers, co-residence and labour participation among older people in Malaysia. This study has broadened the existing methodology used to identify the demographic, health, socio-economic, geographic and intergenerational support characteristics associated with labour participation of older people. In the context of rapid structural changes in Malaysia's society and economy, this study has shown that with respect to labour market policies, policymakers should encourage the involvement of older people in the society through their continued participation in the labour market. This is to ensure older people's economic independence in their old age, although not all older people are able to participate in the labour market due to health factors. Thus, a comprehensive, holistic and multidisciplinary approach is required, involving all aspects of ageing such as gender, health, education and family, to guide the current and future labour market policies. Policies need to consider the nation's multi-ethnic society, catering for the needs of older people in all segments of the ageing population. More importantly, an integrated strategy is required in order to adequately address the complex impact of family support on older people's labour participation. Such initiatives and efforts in promoting active and productive ageing while acknowledging family values in caring for older people, will prove to be timely for Malaysia's preparation for its status of being an ageing nation in the near future.

Appendix A: **Questionnaire from MPFS-5 Dataset**

SULIT / CONFIDENTIAL

FIFTH MALAYSIAN POPULATION AND FAMILY SURVEY (MPFS-5), 2014
QUESTIONNAIRE FOR MALAYSIANS AGED 60 AND ABOVE (MPFS-54)

1. State
2. A.D. No.
3. DB No.
4. Serial No.
5. Strata
6. Tk. No.
7. BP. No.
8. Add.
9. Code
10. Town
11. Tel. No
12. No. of HH / HH number /
13. No. of Resp. / Resp. Number /
14. Respondent's HH number
15. Respondent's spouse HH number
16. Respondent's father HH number
17. Respondent's mother HH number
18. Respondent's Relationship with Head of HH
19. Survey details:

	No. of visit			Notes
	1	2	3	
Date				
Time survey begins				
Time survey ends				
Results of survey*				
Appointment date/time				
Language used				
Name of enumerator				

Result of the survey
1. Completed surveys
2. Half completed, appointment set for proceeding round.
3. Refusal– survey could not proceed
4. New enumerator needed
5. Respondent not at home
6. Language difficulties
7. Other reasons for not conducting the survey

20. Review

	Reviewer 1	Reviewer 2
Date		
Name of interviewer/ enumerator		

NATIONAL POPULATION AND FAMILY DEVELOPMENT BOARD (NPFDB)
MINISTRY OF WOMEN, FAMILY AND COMMUNITY DEVELOPMENT (MWFCD)

1/17

PENGENALAN DIRI YANG DISYORKAN

Assalamualaikum / selamat sejahtera / selamat pagi / selamat tengahari / selamat petang.

Saya ..... (NAMA ANDA) dari LEMBAGA PENDUDUK DAN PEMBANGUNAN KELUARGA NEGARA, KEMENTERIAN PEMBANGUNAN WANITA, KELUARGA DAN MASYARAKAT. Ini adalah kad pengenalan diri saya. Kami sedang menjalankan KAJIAN PENDUDUK DAN KELUARGA MALAYSIA KE-5 di kawasan ini. Tempat kediaman anda telah terpilih sebagai sampel dalam kajian ini. Oleh yang demikian, saya ingin meminta izin untuk menjalankan kajian ini terhadap isi rumah anda. Saya akan bertanyakan beberapa soalan berkaitan KEKELUARGAAN dan KESIHATAN REPRODUKTIF. Temu bual ini akan mengambil masa antara 30 HINGGA 45 MINIT SAHAJA.

Maklumat yang anda berikan adalah SULIT DAN RAHSIA serta tidak akan digunakan dalam apa cara sekalipun untuk percukaian atau siasatan. Maklumat yang dikumpulkan akan menghasilkan laporan yang dianalisis secara berkelompok dan menyeluruh di mana laporan tersebut tidak akan mengandungi nama atau keterangan diri seseorang atau sekumpulan orang atau mana-mana isi rumah.

I .....(YOUR NAME) from the NATIONAL POPULATION AND FAMILY DEVELOPMENT BOARD, MINISTRY OF WOMEN, FAMILY AND COMMUNITY DEVELOPMENT, MALAYSIA. This is my identification card. We are conducting the FIFTH MALAYSIAN POPULATION AND FAMILY SURVEY in your area. Your house has been selected as a sample for this survey. Hence, I would like to seek your permission to allow me to conduct the survey. I will be asking several questions pertaining to family and reproductive health. This survey will take about 30 to 45 minutes only.

The information will be kept PRIVATE AND CONFIDENTIAL and will not be used in relation to taxation or investigation purposes. Information collected will be analysed and compiled as a report. Your personal and household identification will not be revealed in the report.

SECTION A : RESPONDENT'S BACKGROUND

A1. Name: _____

A2. Ethnicity : _____

ETHNICITY CODE :

A3. Gender

1 ☐ MALE

2 ☐ FEMALE

A4. Religion : _____

RELIGION CODE : ☐☐

A5. Date of Birth

Day / Month / Year

☐☐ ☐☐ ☐☐☐☐

A6. Age ___YEAR

A7. Highest education attainment:

EDUCATION CODE: ☐☐

A8. Highest qualification attainment:

QUALIFICATION CODE: ☐☐

SECTION B : MIGRATION

B1. Where did your family live when you were born?

DISTRICT CODE : ☐☐ STATE CODE : ☐☐ INT. CODE : ☐☐

B2. Where did you live until the age of 13 years old?

DISTRICT CODE : ☐☐ STATE CODE : ☐☐ INT. CODE : ☐☐

B3. Have you ever moved to a new place after the age of 13?

0 ☐ NO **Go to Section C** 1 ☐ YES

B4. Where did you lived before moving to this current place?

DISTRICT CODE : ☐☐ STATE CODE : ☐☐ INT. CODE : ☐☐

B5. How long have you lived in this current place?

☐☐ YEARS 99 = N.A

B6. What is the MAIN reason why you moved to this current place?

01 ☐ FIND JOB
02 ☐ CHANGE OF JOB
03 ☐ STOPPED WORKING
04 ☐ BOUGHT HOUSE/LAND
05 ☐ FOLLOW SPOUSE
06 ☐ FOLLOW FAMILY MEMBERS
07 ☐ RETIRED
08 ☐ OTHERS (SPECIFY) _____
99 ☐ N.A.

SECTION C: MARRIAGE BACKGROUND

C1. What is your current marital status?

01 ☐ NEVER MARRIED **Go to C8**
02 ☐ IN MARRIAGE
03 ☐ WIDOWED
04 ☐ DIVORCED
05 ☐ SEPARATED

C2. How many times have you married?

☐☐ TIMES 99 = N.A

C3. At what age is your first marriage?

☐☐ YEAR 99 = N.A.

REFER TO A3 AND C1

IF RESPONDENT IS FEMALE AND STILL MARRIED
Go to C4a

C4a. Besides you, does your husband have another wife?

0 ☐ NO **Go to C10**
1 ☐ YES
8 ☐ DON'T KNOW
9 ☐ N.A.

C5a. How many wives does he have? _____ wives **Go to C10** 98 = DON'T KNOW 99 = N.A.

IF RESPONDENT IS MALE AND STILL MARRIED
Go to C4b

C4b. Besides your current wife, do you have other wives?

0 ☐ NO **Go to C10**
1 ☐ YES
9 ☐ N.A.

C5b. How many wives do you have? _____ wives **Go to C10** 99 = N.A.

IF RESPONDENT IS WIDOWED/ DIVORCED/ SEPARATED
Go to C6

C6. How many years have you been widowed/ divorced/ separated? _____ YEAR 99 = N.A.

C7. Are you planning to remarry?

0 ☐ NO
1 ☐ YES
9 ☐ N.A.

For all answers, go to C10.

IF RESPONDENT NEVER MARRIED
Go to C8

C8. What is the MAIN reason you're not married?

1 ☐ NO PARTNER
2 ☐ ALREADY OLD
3 ☐ AVOID COMMITMENTS
4 ☐ HEALTH PROBLEM
5 ☐ FAMILY RESTRICTION
6 ☐ NO INTEREST TO GET MARRIED
7 ☐ OTHERS (SPECIFY) _____
09 ☐ N.A.

C9. Do you plan to get married?

0 ☐ NO
1 ☐ YES
9 ☐ N.A.

C10. Do you have children (including stepchildren or adopted children)?

0 ☐ NO **Go to Section D**
1 ☐ YES

C11. How many son(s) and daughter(s)? (LIVING CHILDREN ONLY)

1. Son ☐☐ 2. Daughter ☐☐ 99 = N.A.

C12. Where do they stay? (MULTIPLE ANSWERS)

	(a) SON(S)		(b) DAUGHTER(S)
01	☐ CORESIDE	01	☐ CORESIDE
02	☐ SAME RESIDENTIAL AREA	02	☐ SAME RESIDENTIAL AREA
03	☐ SAME DISTRICT	03	☐ SAME DISTRICT
04	☐ SAME STATE	04	☐ SAME STATE
05	☐ OTHER STATE	05	☐ OTHER STATE
06	☐ OTHER COUNTRY	06	☐ OTHER COUNTRY
08	☐ DON'T KNOW	08	☐ DON'T KNOW
09	☐ N.A.	09	☐ N.A.

SECTION D: WORK AND INCOME

D1. Are you currently working?

0 ☐ NO 1 ☐ YES **Go to D8**

D2. Have you ever worked?

0 ☐ NO 9 ☐ N.A.

1 ☐ YES **Go to D4**

D3. What is your MAIN reason why you never worked?

01 ☐ HEALTH PROBLEM
02 ☐ NO SUITABLE JOB
03 ☐ NO INTEREST TO WORK
04 ☐ NO REASON TO WORK
05 ☐ FAMILY RESTRICTION
06 ☐ NO QUALIFICATION
07 ☐ OTHERS (SPECIFY)_____
09 ☐ N.A

For all answers, go to D12.

D4. At what age did you stop working?

☐☐ YEAR 99 = N.A

D5a. What is the type of your latest work (position) before you stopped working?

WORK CODE: ☐☐☐ 999 = N.A

D5b. In which industry?

INDUSTRY CODE: ☐☐☐ 999 = N.A

D5c. What was your work?

01 ☐ EMPLOYER
02 ☐ GOVERNMENT SERVANT
03 ☐ PRIVATE SECTOR WORKER
04 ☐ SELF-EMPLOYED
05 ☐ FAMILY JOB WITHOUT PAY
09 ☐ N.A

D6. What is the MAIN reason you stopped working?

01 ☐ REACHED RETIREMENT AGE
02 ☐ RETRENCHED
03 ☐ VOLUNTARY SEPARATION SCHEME (VSS)
04 ☐ NO REASON TO WORK
05 ☐ HEALTH PROBLEM
06 ☐ TAKING CARE OF FAMILY MEMBER WHO IS ILL
07 ☐ TAKING CARE OF CHILDREN
08 ☐ TAKING CARE OF GRANDCHILDREN
09 ☐ RETIRED ON OPTIONAL BASIS
10 ☐ OTHERS (SPECIFY)_____
99 ☐ N.A

D7. If choices were given, will you continue working?

0 ☐ NO
1 ☐ YES
9 ☐ N.A

For all answer, go to D12.

D8. What is the MAIN factor that influences you to continue working?

01 ☐ NEED MONEY FOR DAILY EXPENDITURE
02 ☐ NEED MONEY TO SETTLE DEBT COMMITMENT
03 ☐ TO STAY ACTIVE
04 ☐ TO FULFIL LEISURE TIME
05 ☐ DON'T WANT TO RELY ON OTHERS
06 ☐ NO PERSON TO RELY ON
07 ☐ OTHERS (SPECIFY)_____
09 ☐ N.A.

D9a. What is the type of job (position) that you are currently doing?

WORK CODE: ☐☐☐ 999 = N.A

D9b. In what industry?

INDUSTRY CODE: ☐☐☐ 999 = N.A

D9c. What is your current work status?

01 ☐ EMPLOYER
02 ☐ GOVERNMENT SERVANT
03 ☐ PRIVATE SECTOR WORKER
04 ☐ SELF-EMPOYED
05 ☐ FAMILY JOB WITHOUT PAY
09 ☐ N.A

D10. What is the average monthly income from your main job?

RM ☐☐☐☐☐ 99999 = NA

D11. Beside your main job, do you do other work?

0 ☐ NO
1 ☐ YES
9 ☐ N.A

D12. What are your financial resources? (MULTIPLE ANSWERS)

01 ☐ NO FINANCIAL RESOURCES **Go to E1**
02 ☐ SALARY
03 ☐ BUSINESS EARNINGS
04 ☐ PENSION
05 ☐ RENTAL ASSET
06 ☐ TRANSFERS FROM SPOUSE
07 ☐ TRANSFERS FROM CHILDREN
08 ☐ WELFARE ASSISTANCE
09 ☐ OTHERS (SPECIFY)_____

D13. What is your average monthly income from other sources? (Including pensions, part-time jobs, rental assets & welfare assistance)?

RM ☐☐☐☐☐ 99999 = NA

SECTION E: SAVINGS AND FINANCIAL MANAGEMENT

E1. Do you have any savings?

0 ☐ NO 1 ☐ YES **Go to E3**

E2. What are the reasons for not saving? (MULTIPLE ANSWERS)

01 ☐ NOT ENOUGH MONEY FOR SAVINGS
02 ☐ RELYING TRANSFERS FROM CHILDREN
03 ☐ LACK OF AWARENESS TO SAVE
04 ☐ TOO EARLY TO SAVE
05 ☐ RELYING ON PENSION
06 ☐ OTHERS (SPECIFY)_____
09 ☐ N.A.

For all answers, go to E5.

E3. Do you have savings in the form of ...?

	NO	YES	N.A
a. Bank accounts	☐	☐	☐
b. Pilgrimage Fund Board	☐	☐	☐
c. Employees' Provident Funds (EPF)	☐	☐	☐
d. Amanah Saham Unit Trust Funds (ASB, ASN, ASW2020 etc.)	☐	☐	☐
e. Insurance	☐	☐	☐
f. Others (Specify)_____	☐	☐	☐

E4. What are your reasons for having savings? (MULTIPLE ANSWERS)

01 ☐ SAVINGS FOR LATER LIFE
02 ☐ CHILDREN'S EDUCATION
03 ☐ FOR EMERGENCY USE
04 ☐ MEDICAL TREATMENT
05 ☐ PERFORMING PILGRIMAGE (HAJJ/ UMRAH)
06 ☐ OTHERS (SPECIFY) _____
09 ☐ N.A

E5. Do you have any investments (eg, shares, Unit Trust & gold or silver)?

0 ☐ NO
1 ☐ YES
9 ☐ N.A

E6. Do you have any loans...?

	NO	YES
a. Housing	☐	☐
b. Vehicle	☐	☐
c. Education (eg: PTPTN & MARA)	☐	☐
d. Personal	☐	☐

E7. Do you have any assets such as...?

	NO	YES
a. Vehicle	☐	☐
b. House	☐	☐
c. Land	☐	☐
d. Others (Specify) _____	☐	☐

SECTION F: FAMILY SUPPORT

REFER C10,
If you have children / step or adopted children, go to F1. If you don't have children / stepchildren/ adopted children go to F6.

		F1. In the last 12 months, have your children ever given you the following assistance?		IF YES IN F1, ASK : F2. How frequently do your children give you this assistance?						
		NEVER	YES	ONCE IN A FEW MONTHS	ONCE A MONTH	FEW TIMES A MONTH	ONCE A WEEK	FEW TIMES A WEEK	EVERY DAY	N.A.
a.	Giving cash assistance	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Paying bills	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Provide/ prepare meals or other basic needs	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Household chores	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Personal care	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Listening to parents' personal problems	☐	☐	☐	☐	☐	☐	☐	☐	☐
g.	Sending or accompanying parents to places requested.	☐	☐	☐	☐	☐	☐	☐	☐	☐

		F3. In the last 12 months, have you ever given the following assistance to your children?		IF YES IN F3, ASK : F4. How frequently do you give this assistance to your children?						
		NEVER	YES	ONCE IN A FEW MONTHS	ONCE A MONTH	FEW TIMES A MONTH	ONCE A WEEK	FEW TIMES A WEEK	EVERY DAY	N.A.
a.	Giving cash assistance	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Paying bills	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Provide/ prepare meals or other basic needs	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Household chores	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Personal care	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Listening to children's personal problems	☐	☐	☐	☐	☐	☐	☐	☐	☐
g.	Sending or accompanying children to places requested.	☐	☐	☐	☐	☐	☐	☐	☐	☐

If all answers in F3 are 'NEVER', go to F6. If at least one answer is 'YES' in F3, go to F5.

F5. What is/are the reason(s) do you provide support to your children? (MULTIPLE ANSWERS)

01 ☐ CHILDREN'S FINANCIAL INSTABILITY
02 ☐ FULFIL LEISURE TIME
03 ☐ SHOWING SUPPORT TO CHILDREN
04 ☐ AS AN ACT OF CARE AND LOVE
05 ☐ OTHERS (SPECIFY)_____
09 ☐ N.A.

F6. In the past 12 months, have you received any financial or in-kind assistance from any other sources?

0 ☐ NO
1 ☐ YES

F6a. If YES, specify (3) three MAIN ones :

_____

SECTION G: INTERACTION AND COMMUNICATION

I: INTERACTION WITH FAMILY

Questions in this subsection need to be answered with the inclusion of individuals having family relationship through birth, marriage or adoption.

G1. How many family member(s) / relative(s) meet and interact with you at least once a month?

0	☐ Nobody (0)	3	☐ 3 - 4 persons
1	☐ 1 person	4	☐ 5 - 8 persons
2	☐ 2 persons	5	☐ >= 9 persons

G2. How many family member(s) / relative(s)/ do you feel comfortable to talk or discuss about personal problems?

0	☐ Nobody (0)	3	☐ 3 - 4 persons
1	☐ 1 person	4	☐ 5 - 8 persons
2	☐ 2 persons	5	☐ >= 9 persons

G3. How many family member(s) / relatives(s) do you feel comfortable to ask for help when you are in need?

0	☐ Nobody (0)	3	☐ 3 - 4 persons
1	☐ 1 person	4	☐ 5 - 8 persons
2	☐ 2 persons	5	☐ >= 9 persons

II: INTERACTION WITH FRIENDS

Questions in this subsection will need to be answered with the inclusion of all friends including neighbour(s) living in the residential area.

G4. How many of your friend(s) / and neighbour(s) do you meet or interact with at least once a month?

0	☐ Nobody (0)	3	☐ 3 - 4 persons
1	☐ 1 person	4	☐ 5 - 8 persons
2	☐ 2 persons	5	☐ >= 9 persons

G5. How many of your friend(s) / neighbour(s) do you feel comfortable to talk or discuss about personal problems?

0	☐ Nobody (0)	3	☐ 3 - 4 persons
1	☐ 1 person	4	☐ 5 - 8 persons
2	☐ 2 persons	5	☐ >= 9 persons

G6. How many of your friend(s)/ neighbour(s) do you feel comfortable to ask for help when you are in need?

0	☐ Nobody (0)	3	☐ 3 - 4 persons
1	☐ 1 person	4	☐ 5 - 8 persons
2	☐ 2 persons	5	☐ >= 9 persons

REFER C1,
If respondent is still married, go to G7.
If respondent is widowed/divorced/separated, go to G8.

III. INTERACTION WITH SPOUSE

G7. Are you still doing the following events together with your spouse?

EVENTS	NO	YES	N.A
a. Holding hands	☐	☐	☐
b. Hugging	☐	☐	☐
c. Kissing	☐	☐	☐
d. Communicating	☐	☐	☐
e. Sleeping in the same bed	☐	☐	☐
f. Sexual intercourse	☐	☐	☐

IV: LONELINESS AND SELF SATISFACTION

G8. In general, do you feel lonely?

0 ☐ NO **Go to G11**
1 ☐ YES

G9. How frequently do you feel lonely?

1 ☐ ALWAYS
2 ☐ SOMETIMES
09 ☐ N.A

G10. What do you do to overcome loneliness? (MULTIPLE ANSWERS)

1 ☐ IGNORE THE FEELING
2 ☐ MEETING/ CONTACTING FAMILY MEMBERS
3 ☐ MEETING/ CONTACTING FRIENDS
4 ☐ EXERCISING
5 ☐ CARRY OUT HOBBY
6 ☐ BROWSING SOCIAL MEDIA
7 ☐ PARTICIPATING IN VOLUNTEERING ACTVITIES/ NGO BODIES/ SOCIETY
8 ☐ PERFORMING RELIGIOUS ACTIVITIES/ RITUALS
9 ☐ WATCHING TV/ LISTENING TO RADIO
10 ☐ OTHERS (SPECIFY) _____
99 ☐ N.A.

For all answers, go to G12.

G11. What do you do to avoid loneliness? (MULTIPLE ANSWERS)

01	☐ IGNORE THE FEELING	08	☐ PERFORMING RELIGIOUS ACTIVITIES/ RITUALS
02	☐ MEETING/CONTACTING FAMILY MEMBERS	09	☐ WATCHING TV/ LISTENING TO RADIO
03	☐ MEETING/ CONTACTING FRIENDS	10	☐ OTHERS (SPECIFY) _____
04	☐ EXERCISING	99	☐ N.A
05	☐ CARRY OUT HOBBY		
06	☐ BROWSING SOCIAL MEDIA		
07	☐ PARTICIPATING IN VOLUNTERRING ACTIVITIES/ NGO / SOCIETY		

G12. Are you...

		NO	YES
a.	satisfied with your life?	☐	☐
b.	feeling that life is meaningless?	☐	☐
c.	feeling worried that something bad might happen to you?	☐	☐
d.	feeling happy all the time?	☐	☐

V: SUPPORT AND COMMUNITY INVOLVEMENT

	G13. Do you know about the following facilities and services?			**G13a. Are you interested in utilising the following facilities and services?**	
ITEM		NO	YES	NO	YES
a.	Old people's home/centre/ institution	☐	☐	☐	☐
b.	Old people's health care institution	☐	☐	☐	☐
c.	Old people's daily care centre/ institution	☐	☐	☐	☐
d.	Old people's activities/ club	☐	☐	☐	☐

G14. In the past (6) months, how frequently you are involved in the following?

		NEVER	EVERYDAY	WEEKLY	MONTHLY	N.SPE-CIFIC
a.	Mosque/ religious institution activities	☐	☐	☐	☐	☐
b.	Sports/ Exercise (e.g. aerobic , yoga & taichi)	☐	☐	☐	☐	☐
c.	Neighbourhood society	☐	☐	☐	☐	☐
d.	NGO / community	☐	☐	☐	☐	☐

VI: SOCIAL MEDIA USAGE

G15. Do you use internet facilities and services?

0 ☐ NO **Go to Section H** 1 ☐ YES

G16. What are the internet facilities and services that you use? (MULTIPLE ANSWERS)

01 ☐ EMAIL
02 ☐ SOCIAL NETWORK (FACEBOOK, TWITTER, INSTAGRAM, WHATSAPP, ETC)
03 ☐ BLOG AND WEBSITE
04 ☐ ONLINE BANKING
05 ☐ OTHERS (SPECIFY) _____
09 ☐ N.A

G17. On average, how many hours do you spend for using internet facilities and services?

☐☐ HOURS 99 = N.A.

SECTION H: KNOWLEDGE AND HEALTH PRACTICES

H1. On average how do you rate your current health status?

01 ☐ GOOD 03 ☐ NOT SATISFIED
02 ☐ SATISFIED

H2. Do you have any of the following health problem that have been diagnosed by certified doctors?			**IF YES IN H2, ASK : H2a. Have you received any medication?**		
HEALTH PROBLEM	NO	YES	NO	YES	N.A.
a. High blood pressure	☐	☐	☐	☐	☐
b. Diabetes Mellitus	☐	☐	☐	☐	☐
c. Coronary Heart Disease	☐	☐	☐	☐	☐
d. Arthritis / joint problems	☐	☐	☐	☐	☐
e. Asthma	☐	☐	☐	☐	☐
f. Kidney pain	☐	☐	☐	☐	☐
g. Stroke	☐	☐	☐	☐	☐
h. Gout	☐	☐	☐	☐	☐
i. Cancer (Specify) _____	☐	☐	☐	☐	☐

H3. Generally, who pays the medical bills and your medication expenses?

01 ☐ FREE 05 ☐ EMPLOYER / EX-EMPLOYER
02 ☐ SELF 06 ☐ OTHERS (SPECIFY)_____
03 ☐ SPOUSE
04 ☐ CHILDREN

H4. Do you have any difficulties performing the following?

ACTIVITIES	NO PROBLEM	PROBLEM BUT STILL PERFORMING IT	PROBLEM, NEED HELP
a. Eating and drinking	☐	☐	☐
b. Bathing	☐	☐	☐
c. Hair dressing	☐	☐	☐
d. Dressing-up	☐	☐	☐
e. Defecating	☐	☐	☐
f. Urinating	☐	☐	☐
g. Toilet usage	☐	☐	☐
h. Getting in and out, to and from bed	☐	☐	☐
i. Movement (on flat surface)	☐	☐	☐
j. Climbing stairs	☐	☐	☐

H5. Knowledge on programmes and services provided by NPFDB.

H5a. Have you ever heard of?				**IF YES IN H5a, ASK H5b. Have you ever utilised, received / participated?**		
		NO	YES	NO	YES	N.A
i.	Mammogram subsidy **(FOR FEMALE RESPONDENT)**	☐	☐	☐	☐	☐
ii.	NPFDB Mobile clinic	☐	☐	☐	☐	☐
iii.	"Nur Sejahtera" clinic	☐	☐	☐	☐	☐

REFER A3,
If male, go to H6. If female, go to H8.

H6. Have you ever undergone a prostate screening test?

0 ☐ NEVER
1 ☐ YES
9 ☐ N.A.

H7. Are you experiencing *Erectile Dysfunction*?

0 ☐ NO
1 ☐ YES
9 ☐ N.A.

If the respondent is a male, survey ends here.

H8. At what age did you reach menopause?

☐☐ YEAR 99 = N.A

H9. Have you ever do self-test breast for cancer?

0 ☐ NEVER **Go to H11**
1 ☐ YES
9 ☐ N.A

H10. Within the past last month, have you done self-test breast screening?

0 ☐ NO
1 ☐ YES
9 ☐ N.A.

H11. Have you done the following...?				**IF YES IN H11, ASK: H11a. Within the past ... , have you undergone ... ?**					
				One year			Three years		
EVENT		NO	YES	NO	YES	N.A	NO	YES	N.A
a.	Breast test screening in clinics / hospital	☐	☐	☐	☐	☐			
b.	Mammogram Test	☐	☐				☐	☐	☐
c.	Pap Smear test	☐	☐				☐	☐	☐

If 'NO' in H11, ask H12 for the following item.

H12. Why do you never do the following...?		a. Breast test-screening in clinic	b. Mammogram test	c. Pap Smear test
01	FINANCIAL CONSTRAINT	☐	☐	☐
02	TIME CONSTRAINT	☐	☐	☐
03	DO NOT REQUIRE TREATMENT	☐	☐	☐
04	NO ONE TO ACCOMPANY	☐	☐	☐
05	FEAR	☐	☐	☐
06	SHYNESS	☐	☐	☐
07	OTHERS (SPECIFY)_____	☐	☐	☐
09	N.A.	☐	☐	☐

Thank you for your cooperation.

END OF SURVEY

Appendix B: **ERGO Forms and confirmation**

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This version updated December 2013

SSEGM ETHICS SUB-COMMITTEE APPLICATION FORM

Please note:

- ***You must not begin data collection for your study until ethical approval has been obtained.***
- ***It is your responsibility to follow the University of Southampton's Ethics Policy and any relevant academic or professional guidelines in the conduct of your study. This includes providing appropriate information sheets and consent forms, and ensuring confidentiality in the storage and use of data.***
- ***It is also your responsibility to provide full and accurate information in completing this form.***

1. **Name(s):** Khairul Hanim Binti Pazim

2. **Current Position:** MPhil/Phd Gerontology Student

3. **Contact Details:**

   Division/School: Centre For Research on Ageing, Faculty of Social and Human Sciences

   Email : khp1g15@soton.ac.uk

   Phone: +44(0)7746730534

4. **Is your study being conducted as part of an education qualification?**

   Yes X **No** ☐

5. **If Yes, please give the name of your supervisor**

   Prof. Maria Evandrou

   Dr. Athina Vlachantoni

6. **Title of your project:**

   The Role of Intergenerational Transfers towards Labour Market Participation among Elderly People in Malaysia

7. **Briefly describe the rationale, study aims and the relevant research questions of your study**

   My research focuses on the impact of intergenerational transfers and family support on the labour market participation among elderly people in Malaysia. Given the Malaysia ageing nation status by 2030 and the increasing trend of labour participation rate of elderly people, it is important and timely to investigate why some elderly people participates in the labour market

and why others do not. Knowledge and understanding of the factors contributing to and or/hindering elderly's employment may help employers better meet elderly persons' needs and increase participation as to assist them to achieve productive ageing. This is especially important today as the extended family system erosion prevails, older parents are receiving less intergenerational transfers from their children as compared to previous times and employment may be the income source to support higher living cost. Therefore, understanding of the key issues surrounding the expectations and needs of older Malaysians in terms of employment and family support is important for reforming existing policy and service provision framework which serves as the rational of undertaking this study.

The aims of this study are to:

1) establish emerging trends of ageing in Malaysia and their consequences for labour force participation.

2) examine the demographic and socioeconomic profile of elderly people.

3) investigate the key factors influencing labour force participation of elderly people in Malaysia.

4) study the role of intergenerational resource transfers and family support towards labour supply of the elderly population.

5) recommend a more responsive employment strategy for the elderly population in Malaysia based on the major findings of the study.

The research questions of my study are as follows:

1. To what extent have the trends of ageing have impacted the population in Malaysia?

2. What are the key factors influencing labour force participation of elderly people in Malaysia?

3. In particular, what is the role of intergenerational resource transfers in determining the labour force participation of the elderly population in Malaysia?

8. Describe the design of your study

The study will undertake quantitative methods analysis using cross-sectional study of the elderly people in Malaysia.

9. Who are the research participants?

There are no participants in the research in the form of being interviewed or participating in a focus group. Rather, the participants are the respondents of the nationally representative surveys that are used in this research. The study will only use secondary survey data.

10. If you are going to analyse secondary data, from where are you obtaining it?

The 4th Malaysian Population and Family Survey 2004 (MPFS-4) & 5th Malaysian Population and Family Survey (2014) will be obtained from the National Population and Family Development Board, Ministry of Women, Family and Community Development, Malaysia. The student has already submitted a request for this data, and she expects to recieve it in the next few weeks.

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11. If you are collecting primary data, how will you identify and approach the participants to recruit them to your study?

Please upload a copy of the information sheet if you are using one – or if you are not using one please explain why.

N/A

12. Will participants be taking part in your study without their knowledge and consent at the time (e.g. covert observation of people)? If yes, please explain why this is necessary.

N/A

13. If you answered 'no' to question 12, how will you obtain the consent of participants?

Please upload a copy of the consent form if you are using one – or if you are not using one please explain why.

N/A

14. Is there any reason to believe participants may not be able to give full informed consent? If yes, what steps do you propose to take to safeguard their interests?

N/A

15. If participants are under the responsibility or care of others (such as parents/carers, teachers or medical staff) what plans do you have to obtain permission to approach the participants to take part in the study?

N/A

16. Describe what participation in your study will involve for study participants. Please attach copies of any questionnaires and/or interview schedules and/or observation topic list to be used

N/A

17. How will you make it clear to participants that they may withdraw consent to participate at any point during the research without penalty?

N/A

18. Detail any possible distress, discomfort, inconvenience or other adverse effects the participants may experience, including after the study, and you will deal with this.

N/A

19. How will you maintain participant anonymity and confidentiality in collecting, analysing and writing up your data?

The secondary data to be used is anonymised by the survey team, and care has been taken by the data providers to ensure that individuals are not identifiable

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20. How will you store your data securely during and after the study?

The University of Southampton has a Research Data Management Policy, including for data retention. The Policy can be consulted at http://www.calendar.soton.ac.uk/sectionIV/research-data-management.html

The data will be stored in my university file-store. Data in file storage is secured under password protected system. A backup system will also be exercised to minimise the risk of loss, corrupted and damaged of computer that stores the data. After the completion of study, students will ensure that data will be deleted.

21. Describe any plans you have for feeding back the findings of the study to participants.

Not applicable.

22. What are the main ethical issues raised by your research and how do you intend to manage these?

There may be risk of data access from unauthorised party, however student will ensure that all precautions be met in order to minimize any ethical issues from being raised.

23. Please outline any other information you feel may be relevant to this submission.

None

Your Ethics Submission (Ethics ID:18486) has been reviewed and approved

ERGO [ergo@soton.ac.uk]
Sent: Wednesday, December 09, 2015 1:34 PM
To: Binti Pazim K.H.

Submission Number: 18486
Submission Name: The Role of Intergenerational Transfers towards Labour Market Participation among Elderly People in Malaysia
This is email is to let you know your submission was approved by the Ethics Committee.

Comments
None
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Source: Author's email correspondence with the ERGO

Appendix C: **Logistic regression output**

Table D-6 1: Variables in the Equation in Block 4

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	A6.Age_1			115.766	3	.000			
	A6.Age_1(1)	-.419	.100	17.494	1	.000	.658	.541	.801
	A6.Age_1(2)	-.939	.130	52.411	1	.000	.391	.303	.504
	A6.Age_1(3)	-1.550	.162	91.633	1	.000	.212	.155	.291
	A3. Gender(1)	-1.302	.099	172.165	1	.000	.272	.224	.330
	C1.Maritalstat_2			22.437	3	.000			
	C1.Maritalstat_2(1)	-.869	.249	12.178	1	.000	.419	.257	.683
	C1.Maritalstat_2(2)	-1.038	.262	15.641	1	.000	.354	.212	.593
	C1.Maritalstat_2(3)	-.134	.373	.129	1	.719	.875	.421	1.816
	A2.Ethnicity_1			13.786	3	.003			
	A2.Ethnicity_1(1)	.360	.119	9.140	1	.003	1.433	1.135	1.809
	A2.Ethnicity_1(2)	-.339	.209	2.637	1	.104	.712	.473	1.073
	A2.Ethnicity_1(3)	.172	.182	.896	1	.344	1.188	.831	1.698
	H2_Number of health problem			40.680	3	.000			
	H2_Number of health problem(1)	-.391	.108	13.163	1	.000	.676	.548	.835
	H2_Number of health problem(2)	-.444	.120	13.721	1	.000	.642	.507	.811
	H2_Number of health problem(3)	-.808	.130	38.769	1	.000	.446	.346	.575
	H4_ADLS_1			16.070	3	.001			
	H4_ADLS_1(1)	-.295	.144	4.227	1	.040	.744	.562	.986
	H4_ADLS_1(2)	-.475	.207	5.283	1	.022	.622	.415	.932
	H4_ADLS_1(3)	-.533	.169	9.977	1	.002	.587	.422	.817
	A7.HighestEdu_4			21.824	3	.000			
	A7.HighestEdu_4(1)	-.323	.129	6.259	1	.012	.724	.562	.932
	A7.HighestEdu_4(2)	-.601	.153	15.423	1	.000	.548	.406	.740
	A7.HighestEdu_4(3)	-.890	.224	15.746	1	.000	.411	.265	.638
	D12_sourceincome_1			46.029	2	.000			
	D12_sourceincome_1(1)	2.947	.592	24.800	1	.000	19.049	5.972	60.757
	D12_sourceincome_1(2)	3.341	.595	31.567	1	.000	28.235	8.804	90.549
	State_2			17.960	4	.001			
	State_2(1)	-.276	.155	3.158	1	.076	.759	.560	1.029
	State_2(2)	.173	.119	2.131	1	.144	1.189	.942	1.501
	State_2(3)	-.123	.132	.875	1	.350	.884	.683	1.145
	State_2(4)	.395	.160	6.082	1	.014	1.485	1.085	2.033
	Placeresidence_1(1)	.624	.094	44.198	1	.000	1.867	1.553	2.245
	Constant	-1.898	.656	8.375	1	.004	.150		

a. Variable(s) entered on step 1: State_2, Placeresidence_1_1.

Source: Author's own SPSS regression output based on MPFS-5, 2014

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