DETERMINANTS OF LABOR FORCE PARTICIPATION AMONG OLDER PERSONS IN MYANMAR

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หลายประเทศทั่วโลกกำลังเผชิญกับสถานการณ์ที่สัดส่วนของผู้สูงอายุเพิ่มสูงขึ้น ประเทศพม่าก็เช่นกัน รัฐบาลพยายามหาวิธีที่จะช่วยให้ผู้สูงอายุมีความอยู่ดีมีสุขเพิ่มมากขึ้น และการมีส่วนร่วมในกำลังแรงงานของผู้สูงอายุก็เป็นหนึ่งในปัจจัยสำคัญในการลดความไม่มั่นคงทางการเงินในวัยสูงอายุ การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาสถานการณ์การมีส่วนร่วมในกำลังแรงงาน และเพื่อหาปัจจัยด้านประชากรและเศรษฐกิจที่มีผลต่อการตัดสินใจของผู้สูงอายุในการมีส่วนร่วมในกำลังแรงงานในประเทศพม่า การศึกษานี้ใช้ข้อมูลจาก 2012 Survey of Older Persons in Myanmar ซึ่งเป็นการเก็บข้อมูลในระดับประเทศ กลุ่มตัวอย่างประกอบด้วยผู้สูงอายุจำนวน 4080 คน ที่อายุ 60 ปีขึ้นไป การเก็บข้อมูลถูกออกแบบโดยวิธีการสุ่มตัวอย่างแบบหลายขั้นตอน งานวิจัยนี้ใช้การวิเคราะห์การถดถอยโลจิสติกเพื่อวิเคราะห์ความสัมพันธ์ระหว่างตัวแปรตาม ซึ่งได้แก่ การมีส่วนร่วมในกำลังแรงงานของผู้สูงอายุ และตัวแปรอิสระต่างๆ ซึ่งได้แก่ ลักษณะทางประชากรและปัจจัยด้านความมั่นคงทางการเงิน งานวิจัยนี้ยังได้ศึกษาว่าความแตกต่างระหว่างเพศมีผลต่อการตัดสินใจในการมีส่วนร่วมในกำลังแรงงานของผู้สูงอายุอย่างไร ดังนั้นการศึกษาจึงแยกวิเคราะห์กลุ่มผู้สูงอายุชายและผู้สูงอายุหญิง นอกจากนี้การศึกษายังแยกวิเคราะห์กลุ่มผู้สูงอายุที่อยู่ในเขตชนบทและเขตเมือง ผลการวิจัยพบว่าผู้สูงอายุร้อยละ 29.12 ทำงานในช่วง 12 เดือนก่อนการสัมภาษณ์ ผลการวิจัยยังพบว่า เพศ อายุ สุขภาพร่างกาย ที่อยู่อาศัย และแหล่งที่มาของรายได้ (รายได้จากเงินบำนาญ การสนับสนุนจากบุตร ญาติ หรือผู้ที่ไม่ใช่ญาติ) เป็นปัจจัยสำคัญที่มีอิทธิพลต่อการมีส่วนร่วมในกำลังแรงงานของผู้สูงอายุ นอกจากนี้ผลการศึกษาพบว่าเพศและที่อยู่อาศัยมีอิทธิพลต่อการตัดสินใจด้านการมีส่วนร่วมในกำลังแรงงานของผู้สูงอายุ จากข้อค้นพบเหล่านี้ การศึกษานี้ได้นำเสนอข้อเสนอแนะเชิงนโยบายหลายประการ

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Population ageing is occurring in many parts of the world. Likewise, in Myanmar, population is ageing with a fast acceleration. The government is trying to find ways to improve wellbeing of older persons, and labour force participation is one of the important factors to reduce financial insecurity during old age. This study aims to investigate the situation of labour force participation and to identify the demographic and economic factors that influence the decision making of older people to join the labour force in Myanmar. This study uses dataset from the 2012 Survey of Older Persons in Myanmar which is nationally representative. In the 2012 Survey, the sample consists of 4080 older persons aged 60 years and above. Data collection was designed by multi-staged random sampling method. Binary logistics regression is employed to examine the association between outcome variable of older persons' labour force participation and various explanatory variables of demographic characteristics and financial security factors. This study investigates how the gender variation affects older persons' labour force participation decision, so males and females are analyzed separately. Similar analyses are also conducted separately for rural and urban areas. The results show that 29.12 per cent of older persons worked during the 12 months prior to the interview. This study also finds that gender, age, physical health, residence, and sources of income (income from pension, support from children, relatives or non-relatives) are important factors which influence labour force participation of older persons. Furthermore, the results of this study reveal that there are both gender and residential differences, which significantly influence the decision regarding labour force participation of older persons. Based on these findings, this study presents several policy recommendations.

Field of Study:	Demography	Student's Signature .....
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TABLE OF CONTENTS

Page

ABSTRACT (THAI) iii
ABSTRACT (ENGLISH) iv
ACKNOWLEDGEMENTS v
TABLE OF CONTENTS vii
List of tables ix
List of figures x
CHAPTER 1 1
INTRODUCTION 1
1.1 Introduction 1
1.2 Country context 3
1.3 Older persons situation in Myanmar 4
1.4 Significance of the study 9
1.5 Objective of the study 10
1.6 Research questions 10
1.7 The standard definition used in this study 10
1.8 Research outline 12
CHAPTER 2 13
LITERATURE REVIEW 13
2.1 Theories related to this study 13
2.2 Literature reviews 20
CHAPTER 3 31
CONCEPTUAL FRAMEWORK AND RESEARCH METHODOLOGY 31
3.1 Conceptual framework 31
3.2 Method of analysis 34
3.3 Research hypothesis 35

3.4 Data source and access 36
3.5 Sample design and coverage 37
3.6 Operationalization of variables 37
CHAPTER 4 43
RESULTS AND DISCUSSION 43
4.1 Descriptive statistics 43
4.2 Logistic regression results and discussions 63
4.3 Summary of this chapter 73
CHAPTER 5 76
CONCLUSION AND RECOMMENDATIONS 76
5.1 Conclusion 76
5.2 Theories and their implications in Myanmar 79
5.3 Policy implications and recommendations 80
5.4 Limitation and future research directions 85
REFERENCES 87
VITA 95

List of tables

Page

Table 1: Descriptions of the variables 40

Table 2: Percentage distribution of working older persons by type of work.....45

Table 3: Percentage distribution of older persons by demographic characteristics and financial security factors.....47

Table 4: Percentage distribution of demographic characteristics and financial security factors: gender variation 50

Table 5: Percentage distribution of demographic characteristics and financial security factors: residence variation 53

Table 6: Labour force participation rate by gender 58

Table 7: Labour force participation rate by residence 61

Table 8: Marginal effects on labour force participation: gender variation 67

Table 9: Marginal effects on labour force participation: residential variation 72

Table 10: Summary table of the relationship between older persons' labour force participation and each independent variable.....77

List of figures

Page

Figure 1: Proportions of different age groups in 2014 and 2050 5
Figure 2: Population pyramids of Myanmar in 2014 and 2050 6
Figure 3: Old-age dependency ratio in Myanmar from 1950 to 2020 6
Figure 4: Sample picture of labour income and consumption over the life-cycle 16
Figure 5: The lidA conceptual framework on work, age and employment 19
Figure 6: Conceptual framework to analyse gender variation 32
Figure 7: Conceptual framework to analyse area variation 33
Figure 8: The proportion of older persons in labour force 44
Figure 9: The working elderly proportioned by gender (Figure: 9A) and by area (Figure: 9B) 45

CHAPTER 1
INTRODUCTION

1.1 Introduction

United Nations Population Fund and HelpAge International (2012) defined population ageing as follows: “A population is classified as ageing when older people become a proportionately larger share of the total population. Declining fertility rates and increasing survival at older ages have led to population ageing”. Declining fertility and increasing longevity is happening all over the world. Most countries except Sub-Saharan Africa and some countries in the Middle East will experience population ageing and this will persist in the next few decades (Uhlenberg, 2009). Among such countries, the transition of population ageing in developing countries is faster than developed regions (United Nations Population Fund & HelpAge International, 2012).

Population ageing is happening in many different parts of the world not only developed regions but also developing regions. The world has 7.55 billion people whereas 962 million are older persons (aged 60 or over) in 2017, which is about 13 percent of total population. The rate of increase of the older population is about 3 percent every year. The proportion of older population is expected to increase to 1.4 billion in 2030 and 2.1 billion in 2050 which is more than double compared to 2017 (United Nations, 2017).

Population ageing is a milestone of development of human being because people are living longer due to the improved socio-economic conditions such as nutrition, sanitation, education, and healthcare system. However, ageing also brings some challenges to individuals, families, societies, and the global community (United Nations Population Fund & HelpAge International, 2012).

A related outcome to population ageing is that the proportion of older population in the labour market is estimated to increase in the near future (Yenilmez, 2015). Uhlenberg (2009) observed that the worldwide labour market entry-exit ratio (15-24 per hundred 55-64) is declining and the ratio in the less developed region is projected to significantly decline much

rapidly than developed regions (Uhlenberg, 2009). Moreover, the share of consumers is expected to be more than the share of workers in the whole population, and so the labour productivity might decrease in the near future (Mason & Lee, 2006).

The impact of population ageing can be either an advantage or a disadvantage to the country and society. Older persons' experience, knowledge and skills play an important role for economic development, political participation and social capital. Population ageing provides positive impact on sustainable development which is associated with the active participation of older generations in the economy, labour market and society. Older persons' participation in labour market, their taxes and consumption, and sharing their resources to their families and communities can help to improve labour productivity and these are the substantial contributions to economic development (United Nations Development Programme, 2017). On the other hand, the disadvantages are such that population ageing is a huge concern on socioeconomic issues which include poverty, income, gender equality, and health care in all regions. Moreover, the government has some limitations in sustainable healthcare and coverage of pensions systems given large share of older population (United Nations Economic and Social Commission for Asia and the Pacific, 2017).

The increase in the proportion of older people can be a source of the second demographic dividend (Mason, 2005). The second demographic dividend contributes to the development of the country or society in two ways: (1) the greater accumulative of wealth because people usually save more and make bigger accumulated wealth to spend in their later lives due to the increased expectancy of life and (2) the greater investment in human capital (for instance-education and healthcare of their children) because people recognize the tradeoff between quantity and quality of children (United Nations Economic Commission for Africa & African Union Commission, 2013).

Population ageing is taking place almost everywhere and the situation is different depending on the level of economic and social development in a country. In the same way, Myanmar's population is ageing with a fast acceleration. The annual growth rate of older population was 2.4 percent between 1983 and 2014 (Department of Population, 2017b). The ageing index of Myanmar is 31.1 (31.1 older people per 100 children) which is similar to the index of less

developed regions (35.2 older people per 100 children) (Department of Population, 2017b; United Nations Department of Economic and Social Affairs, 2015). Although the proportion of older population is increasing, the situation of financial security for older persons is weak. Myanmar is a lower middle-income country and only a small proportion of the population have saving. The pension system is another source for older persons' income and there are two kinds of pensions, namely public pension and social pension. However, these pension schemes are mediocre and don't cover the whole older population. Moreover, among older persons, only 29 percent are in the labour force. The percentage is lower than other neighbouring countries such as Thailand, Vietnam and Malaysia. Therefore, the majority of older persons depend on support from their children. Given all the above, it is important for the policy makers to contribute to the improvement of quality of life of older persons. Unfortunately, in Myanmar, there have been no previous work for this specific topic to inform the government. Therefore, this study will employ quantitative research method to explore the driving forces of labour force participation of older people in Myanmar. The following section in this chapter will discuss the country context, the situation of older people in Myanmar, and the definitions of labour force participation and older persons used in this study.

1.2 Country context

Myanmar, formerly known as Burma, is one of the Southeast Asian countries bordering with Bangladesh in the west, China in the north and northeast, India in the west and northwest, Laos DPR in the east and Thailand in the east and south. Bay of Bengal and Andaman Sea are situated in the west and south, respectively. It has total area of 676577.2 km^2. According to the 2014 nationwide census, it has total population of over 51 million. Among the total population, 48 million people are living in conventional household, 72 percent are living in rural areas and 28 percent are living in urban areas. The country is constituted of seven states, seven regions and one union territory. Myanmar is a multi-ethnicity country and there are 8 major races which include over one hundred minor races. Bamar, the major ethnic occupies two-third of the population and the other third are minorities (Knodel & Pothisiri, 2015). Each race has their own languages, literature, culture and customs.

In 2010, the first election was held in Myanmar after over two decades of military regime ruling the country. Since the inauguration of President U Thein Sein on March 2011, his

government has launched a series of political, economic, and administrative reforms. Myanmar is establishing relationship with other countries and international organization such as the International Monetary Fund (IMF), the World Bank and the Asia Development Bank (ADB). These countries and organizations have been suggesting the economic reforms as well as dropping sanctions to help the country's development. Asian Development Bank (ADB) suggested that "Myanmar may be Asia's next rising star and become a middle-income country by 2030" (Jones, 2014).

Although Myanmar is a lower-middle income economy, it is one of the fastest growing economies in the East Asia and Pacific region and globally. The gross domestic product (GDP) growth rate grew from 5.9 percent in 2016/17 to 6.8 percent in 2017/18. However, it is projected to decline to 6.2 percent in 2018/19 and 6.6 percent in 2020/21 (World Bank, 2018a, 2018b). The GNI per capita income of Myanmar was USD 1,455 in 2017. Strong economic growth resulted in decline in poverty from 48 percent in 2005 to 32 percent in 2015 (World Bank, 2018b). Poverty remains prevalent in rural area, where people rely on agricultural and casual employment. The Myanmar economy is based on agriculture which contributes to 37.8 percent of its GDP. About 30 percent of total export earning is from agricultural resources whereby 70 percent of the labour force participate in this sector (Food and Agricultural Organization, 2019). According to the World Bank collection of development indicators, 19.5 percent of land are agricultural land.

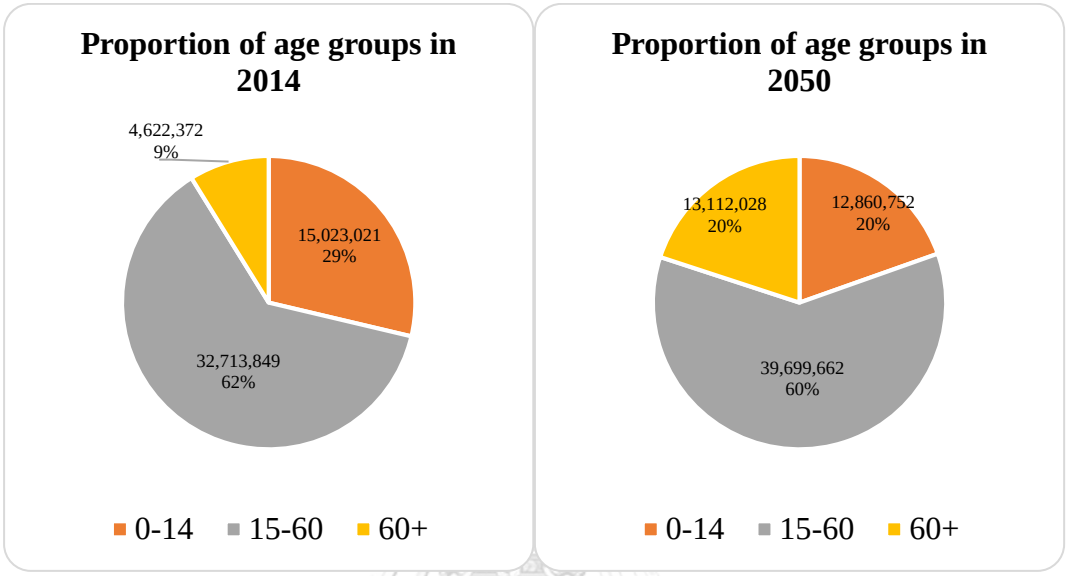
1.3 Older persons situation in Myanmar

This section will illustrate the proportion of older population in Myanmar and its estimation in 2050. Moreover, this study will present brief information about the older persons' situation such as pensions, living arrangement, assistant from children, participation in the labour force, as these factors are major factors determining older persons' engagement in the labour market.

According to 2014 Census, Myanmar has 4.5 million older people which make up 9 percent of total population and the figure is estimated to become 13 million in 2050. This estimation will be similar to Singapore's population structure today, which has equal proportion of older

persons (aged 60 and over) and young population (aged below 15) whereby each group will share 20 percent of country's total population (Department of Population, 2017b).

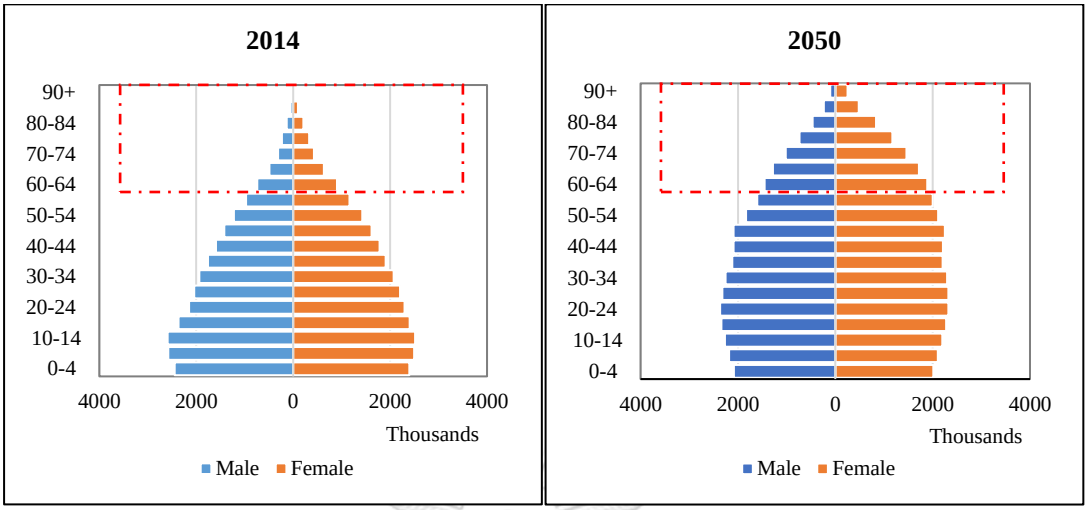
Figure 1: ***Proportions of different age groups in 2014 and 2050***



Source: Author's calculation using data retrieved from the Department of Population (2019)

The population pyramids of Myanmar in 2014 and 2050 are shown in figure 2. The population pyramid in 2014 shows that the proportion of older people (aged 60 and over) is small, however, in 2050, the proportion of older people is estimated to increase significantly.

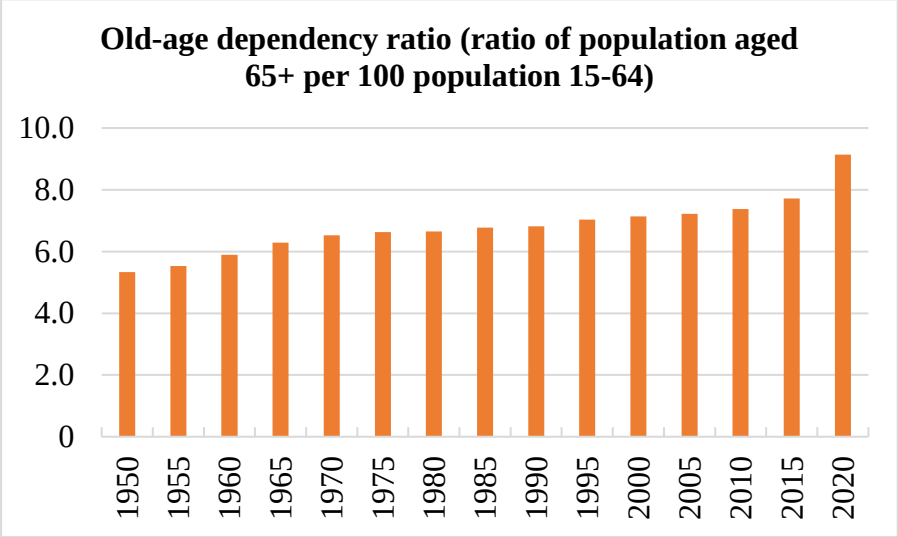
Figure 2: ***Population pyramids of Myanmar in 2014 and 2050***



Source: Author's calculation using data retrieved from the Department of Population (2019)

Moreover, figure 3 shows that the old-age dependency ratio in Myanmar slightly increases year by year before 2015. By 2015, the old-age dependency ratio is 7.7/100 (7.7 elderly per 100 persons of working age). The old-age dependency ratio will increase with high speed and it is estimated to become 9.1/100 in 2020 (or 10.98 workers per one retiree). Therefore, Myanmar is changing to ageing society rapidly.

Figure 3: **Old-age dependency ratio in Myanmar from 1950 to 2020**



Source: Author's calculation using data retrieved from the United Nations, Department of Economic and Social Affairs, Population Division (2019).

1.3.1 Pensions

Given the alarming change of becoming an ageing society, the government adapted several laws and policies. Among them, the pension program for all kinds of workers, a social pension system for elderly and promotion of local support groups for older persons are the priorities for preparedness for future ageing society. Therefore, in 2017, the first step to support older persons is that the government started providing cash support of 10,000 MMK[1] (equivalent to 6.5 US dollars) per month to people aged 90 and above (Department of Population, 2017b). In October 2018, the government amended the eligible age of old age social pension to 85 years. However, such a financial support program is insufficient for elderly's expenditure and it also does not cover the entire older population. The lower pension coverage among older persons is a big challenge for economic development in population ageing society (United Nations Economic and Social Commission for Asia and the Pacific, 2017).

The social security systems are different between developed countries and developing countries. Among the developed countries, the majority of employees can access the social security benefits which will become the primary source of income upon retirement. This is in contrast to developing regions, particularly in Myanmar, where the social security program for older persons is weak such that many older persons want to continue their work for daily living and medication in later life. The public pension system is often only for civil servants who retire at age 60 years. Knodel and Teerawichitchainan (2017) use data from the 2012 Myanmar Ageing Survey and reveals that only 3 percent of elderly depend on pension as their main source of income while only 1 percent of the older persons who lived in rural area depend on pension as their main income.

[1]MMK means Myanmar Kyat (Myanmar currency) and which is equivalent to 0.000655 American Dollar (the average rate of 2019). Source://https://fx-rate.net/USD/MMK/#calculator

1.3.2 Living arrangement

Living arrangements are the most important factors determining care and help with activities of daily living (ADL) and support of income and other necessities like foods and drugs for older persons as well as the older people get emotional support from their children (Knodel, 2014; Knodel & Pothisiri, 2015). The majority of older persons in Myanmar live in the same household or in close proximity to their children. This living arrangement is more prevalent in the country than neighbouring countries such as Thailand and Vietnam (Teerawichitchainan, Pothisiri, & Long, 2015). Most households have one or more children such that the older persons usually live with at least one married child; although there are unmarried children in the household (Knodel & Pothisiri, 2015). Among older persons who have non-coresident children, they maintain social connection through visits and phone calls with children. In Myanmar, older persons with coresident children have better psychological wellbeing than those with other living arrangements like isolated (children live in the same village/ward) and network (nearest children live in the same locality). Compared with isolated family arrangement, network family arrangement has negative impact on older persons' psychological wellbeing and coresidence with child has positive impact on older persons' psychological wellbeing. The difference in psychological wellbeing between coresidence with child and network living arrangement is much larger than the difference between coresidence with child and isolated living arrangement. The relation between living arrangements, inter-generational support, and old-age psychological wellbeing are observed in Myanmar. Older person's labour force participation increases their psychological wellbeing and intergenerational support (Teerawichitchainan et al., 2015).

1.3.3 Assistance from children

Financial support from children plays an important role in improving psychological wellbeing of older persons (Teerawichitchainan et al., 2015). Over half of older population get financial and material support from their children in Myanmar (Knodel & Pothisiri, 2015). This support is different for each type of living arrangement; whether living in the same household, same township, outside township, and other country between the adult children and older parents. Over half of children in each type of living arrangement provide material and financial support to their parents, and those living in the same household have the highest proportion (80 percent provide material and financial support to their parents). Fifty percent of children who live in the same household provide the support of 50,000 MMK in value or more

followed by children who live in other countries (about 46 percent providing the same support value) (Knodel, 2014). From the perspective of older parents, over 90 percent of older persons received material support from their children. The proportion of older persons who received over 50,000 MMK is 63 percent; and who received over 100,000 MMK is 47 percent. Compared with older person living apart from children, those who co-reside with children are more likely to receive support from their children (Knodel, 2014).

1.3.4 Participation in the labour force

Knodel (2014) found that almost all of older people (94 percent) were active in the labour market at least at some point in their lifetime. Among them, 60 percent of elderly were engaged in the agricultural sector which reflects the characteristic of Myanmar's economy. The proportion of people who worked as government officials and in non-agricultural sectors are equal to 10 percent each (Knodel, 2014).

1.4 Significance of the study

Population ageing will have immense effects on various socioeconomic issues, including poverty, income and gender equality, and health care throughout the region (United Nations Economic and Social Commission for Asia and the Pacific, 2017). Hence, many governments focus on three priority areas of (i) older persons and development, (ii) advancing health, and (iii) improving well-being which are in line with the Madrid Plan of Action as well as ensuring enabling and supportive environments for its older population. Among those priorities, older persons and development is constructed with five major areas and employment of older population is one of the focused areas. Not only the developed countries but also the developing countries create opportunities for older persons to participate more actively in the labour market depending on their particular issues. For the developed countries, they provide employment opportunities for older persons with the aim to alleviate the effect of a shrinking labour force in the country and the economic slowdown. The developing countries mainly aim to reduce poverty among older population by encouraging later-life employment.

As mentioned earlier, the proportion of older population is rising steadily in Myanmar and it is important to explore the factors that influence their labour force participation. There has not

been previous study on labour force participation of older persons in Myanmar by demographic characteristics and conditions of financial security. Therefore, this proposed study attempts to address the shortcoming in the literature regarding the analysis of older population participation in the labour market in Myanmar. This study will explore the situation of older people participating in the labour market and the factors influencing the working decision of older people in Myanmar. Moreover, the results from this study will have implications for the policy makers and government to adapt appropriate policy and programmes to improve quality of life for their older citizens.

1.5 Objective of the study

In accordance with the recommendation from thematic report on the older population of the 2014 Myanmar Population and Housing Census, this study aim to employ quantitative research methodology to investigate the situation and the factors which influence on labour force participation of older population in Myanmar. The objectives of this study are:

(1) to explore the situation of labour force participation among older persons in Myanmar.

(2) to investigate the demographic characteristics and financial security factors that influence the working decision of older persons in Myanmar.

1.6 Research questions

The research questions for this study are:

(1) What is the situation of labour force participation among older persons in Myanmar?

(2) What are the underlying demographics characteristics and financial security factors of older persons in Myanmar that determine the decision to participate in the labour force?

1.7 The standard definition used in this study

1.7.1 Labour force participation

Based on the definition given by ILO, labour force participation rate is defined as the proportion of working-age population who are either (1) working or (2) not working but

searching for work (International Labour Organization, 2016). However, the questionnaires in Older Persons Survey in Myanmar define labour force participation of older people to include those who worked during the year before the survey, either (1) throughout the year, (2) seasonally, or (3) occasionally (1-2 months in a year). Therefore, the definition of labour force participation in this study is quite different with ILO definition. This study did not consider the older persons who are searching for work as participating in the labour force.

1.7.2 Labour force participation rate

According to International Labour Organization (2015), the labour force participation rate is the employment-to-population ratio, and therefore the definition of labour force participation rate of older people is the ratio of older people in employment to the total population of older people.

The labour force participation rate of older people is calculated as follows:

$$\text{Labour force participation rate of older people} = \frac{\text{the number of older people in the labour force}}{\text{the total number of older people}} * 100$$

The labour force participation rate of specific groups of older people (male, female, urban, rural) is calculated as follows:

$$\text{LFPR of specific group of older people} = \frac{\text{the number of older people belonging to the specific group in the labour force}}{\text{the total number of older people belonging to the specific group}} * 100$$

1.7.3 Older person

Older person is generally defined based on their particular characteristics such as chronological age, changes in social role and changes in functional abilities that are influenced by their age, gender, health, income, education, ethnicity and other factors. In developed countries, older age is defined as 60 or 65 years old when a person retired from employment and started receiving pension. However, in some low or middle-income countries (LMIC), the older age starts at 50 years and over due to shorter life expectancy and higher fertility in those places (World Health Organization, 2010). The United Nations'

standards for the elderly are those aged 60 years and older (United Nations Population Fund & HelpAge International, 2012).

In some Asian countries such as Indonesia, Singapore, Thailand and South Korea, the age of elderly is 60 years and over. However, in Malaysia, the mandatory retirement age of public sector is 58 and private sector is 55 which is the lowest in this region (G. S. Ling & Fernandez, 2010).

In Myanmar, according to the 2016 Older Persons Law, older person is defined as people aged 60 years and older. Moreover, people who work in public sector or work as government servants terminate their responsibilities and retire at age of 60 years by the civil servant rules. This is the onset of receiving pension benefits. The respondents in the Survey of Older Persons in Myanmar are the persons who aged 60 and older (Knodel, 2014). Therefore, in this study I will refer to older persons as persons who are 60 years and older.

1.8 Research outline

After discussing older persons' situation and labour force participation in this chapter, the rest of the thesis is organized as follows. Chapter 2 gives the related theories and some literature review. Chapter 3 describes detailed information about the survey applied in this study and research methodology. Chapter 4 presents results and discussion, and finally, chapter 5 includes conclusion and some policy recommendations.

CHAPTER 2
LITERATURE REVIEW

In this chapter, I will describe the theories which are related to older persons' participation in the labour force and explain the determinants of labour force participation among the older population which are summarized from different existing literatures. The factors that affect the labour force participation of the elderly may vary based on country context and socio-economic development (Reddy, 2016).

2.1 Theories related to this study

2.1.1 Productive ageing

One of the major theories relating to older persons' engagement in the labour force is the theory of productive ageing. A variety of definitions of productive ageing have been defined by many literatures (Mui, 2010). Formerly, productive activity refers to only labour force participation or paid work which is the indicator of workforce and gross national product (Herzog & House, 1991). Western gerontologists define productive ageing as the action of producing materials or services which are performed by elderly and the elderly's activities to improve their performance (Caro et. al, 1993 cited in Mui, 2010). The older persons' individual characteristics (socio-demographic, health, and educational factors) and institutional capacity (physical environment, economic development, and government policies) influence the productive engagement (Sherraden et al., 2001 cited in Teerawichitchainan et. al., 2018). To summarize, productive ageing is economic, social or spiritual activities which are performed by older persons and those activities have positive impacts on them, on their families and on society (Thanakwang & Isaramalai, 2013) as well as improve their human capital and social capital (Mui, 2010).

Another concept related to productive ageing is "productive engagement in later life". In 2011, Sherraden, Morrow-Howell, Hinterlong, and Rozario (2011) reveal a new Model of Productivity in Later Life based on productive engagement in later life framework which is offered by Bass and Caro (1996). The Model of Productivity in Later Life highlights the individual and institutional capacity which are interaction and originally from socio-

demographic and public policy/programs respectively. Those factors influence the productive behaviors of older persons (Morrow-Howell & Wang, 2013).

Cross-cultural framework on productive engagement in later life includes antecedent factors, productive behaviors and outcomes. Factors such as socio-demographic, economic, physical environment, and public policies and programs influence the productive behaviors (Morrow-Howell & Wang, 2013).

According to Cross-cultural framework, socio-demographic factors directly reflect on productive behaviours, while cultural context influences the family structure and living arrangement and these family characteristics influence the older persons participating in caregiving roles (Musick and Wilson 2008 cited in Morrow-Howell & Wang, 2013). Physical environment factors such as urban-rural contexts may provide different opportunities for participating in workforce, volunteering activities and social supporting program. Economic conditions also influent the supply and demand for paid and unpaid work (Morrow-Howell & Wang, 2013).

Moreover, there are three antecedent factors in the concept of productive engagement which is based on Walker and Avants's eight-step method. Those antecedent factors are sociocultural, individual, and institutional that are interrelated and associated with productive engagement among older persons. Among the three antecedent factors, individual factors have both the demographic characteristics and the ability of older persons. The demographic characteristics are gender, age, education, race/ethnicity, and health conditions and those characteristics provide opportunities of productive potential (Glass et al., 1995; Sang-Jin, 2008; Martinez et al., 2009 cited in Thanakwang & Isaramalai, 2013).

2.1.2 Life-cycle theory

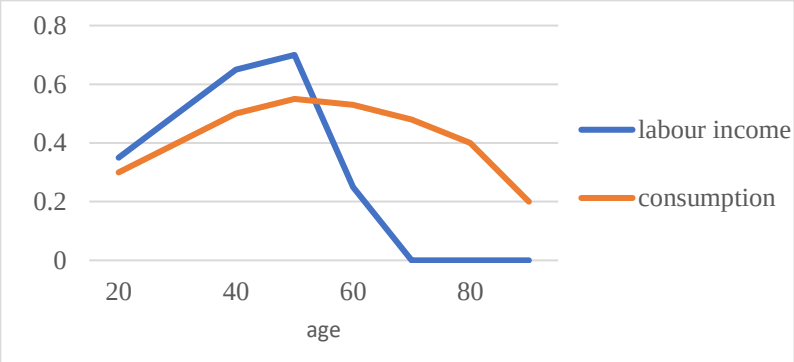
In 1954, Franco Modigliani and Richard Brumberg developed a theory of life-cycle, which is based on the spending of people at each age over their income within a lifetime. While the individual consumption is a straight line, the income curve is similar with inverse U-shape pattern started to incline at working age and then decline at retired age. At the time of

working period, the people can prepare for their retirement as well as manage their consumption at different ages based on income (Deaton, 2005). During the working life, income is higher than expenditure and people can save for their future. As a result, those savings become people's income when they retire (Pettinger, 2017). If people have enough saving, they can consider whether to work or not in their retirement age (Deaton, 2005). Nowadays, increasing younger and older dependency ratio may decrease saving rates because of this theory, the working age group is the group that saves, and the proportion of this group is getting smaller. For example, in South and East Asia countries, there have high saving now; however in the near future, the saving may decline because of population ageing (Deaton, 2005).

According the life-cycle theory, for people, the childhood and old age periods are vulnerable for poverty in their life time. The childhood period is less vulnerable than older age because the parents support their children in the childhood time. However, the older people rely on their income and/or support from their children as their primary source for daily living in developing countries. Therefore, the older people who lack secure income are more likely to participate in labour force beyond their 60s (Cameron & Cobb-Clark, 2002).

Based on the life-cycle model, the neoclassical life-cycle model has been launched to empirically investigate the issue. Bütler (2001) presents a simple neoclassical life-cycle model, there is interrelation between consumption and labour income if consumption and leisure are not separable in the utility function. However, those two profiles do not overlap in the same period. The hump shape of the labour income is earlier than hump shape of the consumption and the consumption pattern is flatter than the income. The author summarizes that the dynamic of family composition impacts the effects of endogenous labour because the family size effects on productivity and labour income.

Figure 4: ***Sample picture of labour income and consumption over the life-cycle***



Between 1900 and 1971, the proportion of retired men was doubled in America. The extended life cycle model is appropriate to tackle the increased retirement. In the extended life cycle model, the social security has an effect on the increase of personal saving. Providing social support to retired older people may reduce both the older persons' participation in labour market and their working years. Those may result in longer period of retirement. The extended life cycle model shows that the higher saving rate in developed countries increases the retirement rate (Feldstein, 1976).

2.1.3 Intergenerational solidarity

Bengtson, Olander, & Haddad (1976) proposed an intergenerational solidarity theory which includes six distinct elements of parent-child interaction. Those six elements are (1) association (frequency and pattern of contacts and interactions); (2) affection (feeling of closeness among family members); (3) consensus (agreement in view, attitudes, values and beliefs); (4) function (financial and nonfinancial exchanges); (5) familyism (sense of obligation to care), and (6) opportunity structure (interaction promoted by geographical proximity) (Bengtson & Roberts, 1991). Family solidarity plays an important role in family relations particularly in social interaction with older persons. Nowadays, researches highlight sharing value, filial responsibilities, and persisting relationship between intergenerational cohorts of parents and children (Lowenstein, 1999). Among the six elements of intergenerational solidarity theory, most of economists and literatures of intergenerational relationship emphasize on functional exchange, i.e. the reciprocity and support of financial and material between generations (Bengtson & Oyama, 2007).

Intergenerational solidarity is a result of social interaction between two generations influenced by many factors such as age, gender, culture, ethnic, religion, values, socioeconomic status and other factors. Solidarity has been the component of equality because the social security and social assistant programs depend on the financial return from active employers to beneficiaries which reflect the evolving of solidarity between generations.

Most researchers utilize the reflection from the dynamic of family structure, changing demographic and socioeconomic factors, and transition of public policies to measure the intergenerational solidarity and the results from those analysis provide an insight into the existence of intergenerational solidarity and the intervening factors.

2.1.4 The meaning of working for older workers (MOWFOW)

The definition of the meaning of working is based on several components which include the outcomes or benefits from working, the driving or encouraging factor to work, and the belief on working in a persons' life (The Meaning of Working International Research Team, 1987). Baltes, Rudolph, and Bal (2012) develop a model of the meaning of working for older workers (MOWFOW) which is focus on the older workers' work for their necessity and motivation to work, and the factors contributing to the meaning of working. In this model, the meaning of working has three distinct levels that are individuals level variables, organizational context variables, and micro socioeconomic conditions which are external influence on work and working of older workers, and interrelations among them. The individuals level variables and organizational context variables are proximal influencing factors and micro socioeconomic conditions are distal influencing factors, those factors constitute the meaning of working for older workers. Organizational-context variables include organization culture, organizational structure, human resource management practices, work conditions, job design, and management and leadership. Individual-level variables mainly focus on demographic factors, such as age, sex, race, and socio-economic status.

The rewards and expectations based on this model include both tangible and intangible outcomes. Economic is the main reason for older persons to work and they expect valuable outcomes from working (Baltes et al., 2012). Therefore, the working of older persons gives

higher living standard based on their income and has positive effect on their self-esteem (Harpaz, 1990 cited in Baltes et al., 2012).

2.1.5 The lidA framework

The lidA framework (German Cohort Study on Work, Age, Health and Work Participation), which is proposed by many researchers from Germany's Universities of Wuppertal, Magdeburg and Ulm in 2009, is to better understand labour force participation of older workers as the result of complex interactions among ten domains which are labour market, legislation, financial factors, social position, domestic domain, human resource management, work-related factors, health, work ability and motivation. Those domains influence the older persons to continue in employment or to delay retirement (Bélanger, Carrière, & Sabourin, 2016; Hasselhorn et al., 2014). However, the decision-making process whether to retire or not is not determined by solely one factor or domain but is rather a complex interaction of various factors linked to different domains (Hasselhorn & Wenke, 2015).

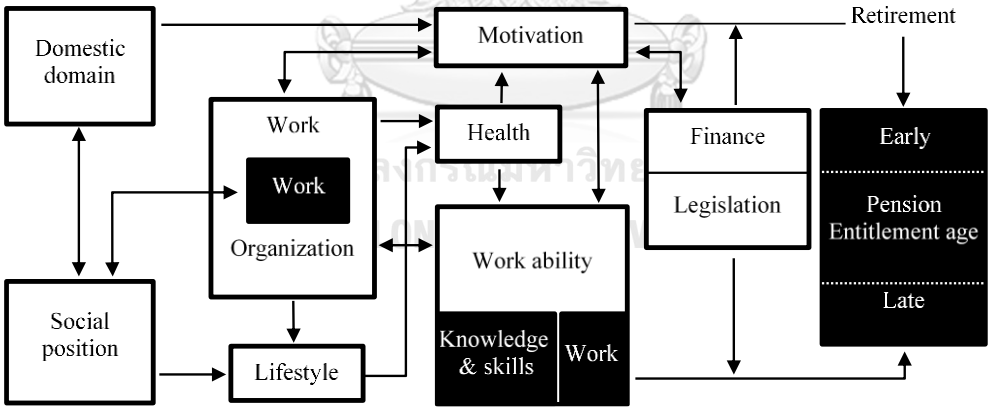
In this framework, the domestic domain in which marital status, spouse's employment status, family formation, caring obligations, informal task and role distributions, synchronization of retirement, and household income directly impact both motivation whether to work or not and social position. Motivational factor is a key determinant in the decision-making to continue working or retire and it is interdependent with work, work ability, finances and the pension system, however, it was influenced by health factor. Social position includes educational attainment, working skill, assets or income, and hierarchical position. Those with low social positions are more likely to exit from labour market early (Hasselhorn & Wenke, 2015). However, the lidA cohort framework was constructed based on data from older workers from Germany which is a developed country. Therefore, the relationship between social positions and the decision whether to work or not may be inconsistent with developing regions according to literature reviews in this study. For example, poor educational attainment in developing countries may lower education level of their people, which may result in a high proportion of older population with low educational attainment in the labour market.

Work in this framework consists of two domains, which are work organizations and interventions (e.g., measures of human resource management), and the work factors (e.g.,

work content). Work content factors influence labour market participation at higher working age. Moreover, the work factor has interrelation with social position, motivation and work ability. Work ability which refers to the situation if someone gets a specific work, is related to work as well as the personal knowledge and skills, health, and motivation to work (Hasselhorn & Wenke, 2015).

Many factors affect the relation between health and employment and many of them are interdependent. The relation between health and employment participation among older workers has been studied extensively. The predominant conclusion is that poor health is the most predictive determinant for exit from work. Financial factors and pensions are important factors which are determined by the employment and retirement behavior of older people. Some evidence in a number of countries show that after reforming the pension benefits, the financial status of older persons influences their employment in older age. However, this influence is complicated by the individual's health status, gender and household context.

Figure 5: **The lidA conceptual framework on work, age and employment**



Source: Peter & Hasselhorn, 2013 cited in Hasselhorn & Wenke, 2015

To summarize, the above theories and models represent the situation of older persons participating in the labour force which are influenced by various factors. The productive ageing highlights the individual characteristics (e.g., socio-demographic, health, education), economic development, and physical environment (e.g., rural-urban difference) influence productive engagement in paid work. The life-cycle theory focuses financial status such as income, saving, pensions and support which are reflected in the decision whether to work or

retire in the later life. The intergenerational solidarity theory highlights caring, assisting, and social interaction between different generations. These three theories are the main theories used in this study. The conceptual framework in this study is based on the meaning of working for older workers and the lidA framework. These two models include various factors which contribute to older persons' participation in the labour force. However, this study will hypothesize only the older persons' demographic characteristics and financial security, therefore, the conceptual framework considers only those characteristics.

2.2 Literature reviews

2.2.1 Gender

Gender is one of the main determinants of older persons' participation in the labour market. In several Asian countries including India, Thailand, Taiwan, and Malaysia; there is significant gender difference in elderly's labour force participation rates where males' participation rate is higher than females' (Adhikari, Soonthorndhada, & Haseen, 2011; Chayovan, 2005; Chiu & Chen, 2013; G. S. Ling & Fernandez, 2010; Reddy, 2016). Reddy (2016) studies labour force participation of elderly (aged 60 and above) in India from 1983 to 2011-2012 and finds that the number of older males in the labour market is three times larger than those of older females in 2011-2012. Gender discrimination in India is significant not only in the labour market but also in the households. Women exit from the labour market and stay only in the household to perform domestic work. Female elderly, especially, are expected to take care of young grandchildren. According to the government, most of the women who do not participate in formal economic activities are contributing to home-based economy (Klasen & Pieters, 2015). This situation is similar to the case in Thailand, where women tend to work in the household. The tradition of Thailand is such that women prefer to be housewives, however, they are the decision makers for household financial activities. Thus, the labour force participation rates of females is always lower than males' participation rates in every age group including aged population (Adhikari et al., 2011; Chayovan, 2005).

As opposed to the above literature, a study in Vietnam finds that the participation of older females in the labour force is larger than that of older males (T. Giang & Le, 2015). In this case, the life expectancy of Vietnamese females is longer than that of males. As a result, the proportions of older males and females in the workforce are significantly different, 57.92 percent for females and 42.08 percent for males (T. Giang & Le, 2015).

Some gender issues which have effects on elderly labour force participation are as follows. Gustman and Steinmeier (2000) reveal the joint retirement decisions between males and females in the U.S which affect their spouse's retirement. The result is that the females have more power than males regarding their spouse's decision whether to continue to work. Chiu and Chen (2013) find that the husband's participation in the labour market is positively associated with the wife's participation decision and it is negatively associated with regional unemployment rate.

2.2.2 Age

Age is an important factor for elderly to participate in the workforce. The literature suggests that age and labour force participation are negatively correlated for older persons (Adhikari et al., 2011; T. L. Giang & Nguyen, 2016; G. S. Ling & Fernandez, 2010; Pang, Brauw, & Rozelle, 2004; Vodopivec & Arunatilake, 2011). As might be expected that older people are more vulnerable to bad physical health, this may cause difficulty with regards to participation in the labour market (T. L. Giang & Nguyen, 2016). In the case of Vietnam, the young elderly (aged between 60 and 69) makes up the highest proportion in workforce and accounts for 45.57 percent. And the participation rates are 33.34 percent for the group aged between 70 and 79 and 20.91 percent for the oldest group (aged 80 and above) (T. Giang & Le, 2015). Similarly in Thailand, Adhikari et al. (2011) find that the probability to participate in the labour force declines when the people aged. They find that 74 percent of men and 51 percent of women work at the age of 60. The percentage of people who engage in the labour market decreases for both sexes for elderly aged 70 (only 59 percent for males and 22 percent for females). Moreover, among the elderly who are 80 years old, 17 percent of men and 9 percent of women engage in the labour market.

G. S. Ling and Fernandez (2010) also find negative relationship between age of older person and participation rate in the state of Penang, Malaysia. In their study, if the age of older person increases by one year, the probability of participation in the labour force decreases about 0.93 percent while controlling for health situation. The research of rural China, Pang et al. (2004) find a negative correlation between age and participation in employment. If the older person is older by one year, they are 1.9 percent less likely to participate in formal

work, 1.3 percent less likely to participate in on-farm work and 0.07 percent less likely to participate in wage earning and self-employed work. In the case of Sri Lanka, during 1992-2004, the proportion of elderly in the labour market remains stable, the elderly withdraw from the labour market in their later life (Vodopivec & Arunatilake, 2011). In early 2004, 50 percent of men and 14 percent of women between the ages of 60 and 69 were employed in the labour market. The figures decreased remarkably after the age of 69 years where only 14 percent of men and 3 percent of women work (Vodopivec & Arunatilake, 2011). To conclude, when a person becomes old, his/her health conditions become poor and this decreases the probability of participation in the labour force.

2.2.3 Highest education level

Education plays an important role in the decision whether to continue to work or not in the retirement age (Kalwij & Vermeulen, 2005). Some literatures reveal that education is negatively associated with employment in the case of older persons (T. Giang & Le, 2015; Keeratipongpaiboon, 2012; Reddy, 2016). In Vietnam, education was not popular in the past and most people could not afford education for their children because of their income. Further, they did not know the importance of education. This results in the high proportion (84.21 percent) of older persons who have only finished lower secondary or lower than that level. Moreover, the older persons who have higher than lower secondary education are less likely to participate in the labour force compared to those with lower level of education (11.9 percent for male and 18.9 percent for female) (T. Giang & Le, 2015).

Similarity, Reddy (2016) examines how the educational attainment may decrease the probability to participate in the labour market for the senior people in India. The labour market in India can be categorized into formal and informal labour market. Formal labour market has better social security but it demands higher education. Informal sector does not provide social security and retirement benefits but it does not require skills and higher education. Therefore, the elderly who have lower education will continue to work in the informal sector in their later life (Reddy, 2016).

In the same way in Thailand, the educated older persons prefer to work in the formal sector which has the benefit of pension system when they retire at age 60. A study reveals that an

older person who graduated with Bachelor and Master degree are less likely to participate in workforce than a person who has only primary or lower education (the probability decreases by 11.7 percent and 20.4 percent respectively) (Keeratipongpaiboon, 2012). Furthermore, in Canada, the educated person may be expected to earn higher income and to be able to retire earlier from their career. After the retirement, they will be happily using their property which they obtained in the working period (Milligan & Schirle, 2018).

Teerawichitchainan, Prachuabmoh, and Knodel (2018) conduct the comparative analysis of productive ageing in three developing Southeast Asia countries; Myanmar, Vietnam and Thailand. They find that education is an influencing factor of productive ageing among those countries. For Thailand, those who completed primary education are more likely to work compared to those with lower and higher levels of education.

On the contrary, in some countries such as Malaysia and Australia, if the older people have higher education, the probability of participating in the labour market would increase (G. S. Ling & Fernandez, 2010; Ryan & Sinning, 2010). The higher educated persons invest in their human capital and they start their career later, as a result, they are less likely to retire when they become aged (Deschryvere, 2005). The experience of Penang in Malaysia shows that education is positively related with elderly labour force participation. Older persons who have school certificate are 7.5 percent, and those who finished college/university are 2.4 percent more likely to participate in the labour force than those who do not have any certificate or unofficial education (G. S. Ling & Fernandez, 2010). Ryan and Sinning (2010) reveal the positive relationship between education and labour force participation among Australian elderly. The older persons who have graduated are more likely to participate in the labour force especially for females (18.3 percent for males and 27.5 percent for females in 2006). This may be due to better work condition and the desire to regain their expenditure in education at younger age.

2.2.4 Marital status

Marital status is a demographic variable which has been found to affect the decision of older persons to remain in or resign from the labour force. Based on the country situation, the marital status of elderly has different effects on their labour force participation. T. Giang and

Le (2015) and Adhikari et al. (2011) reveal that in Vietnam and Thailand, the married elderly are more likely to participate in labour force. T. Giang and Le (2015) find that among Vietnamese elderly, married persons are 28.2 percent and widowed persons are 10.5 percent more likely to participate in the labour force than those who are divorced or separated or never-married. Likewise, in Thailand, married elderly are more likely to participate in the labour force than widowed and single elderly (Adhikari et al., 2011).

G. S. Ling and Fernandez (2010) and Reddy (2016) find that in the state of Penang, Malaysia and India, the married elderly are less likely to participate in the labour force. G. S. Ling and Fernandez (2010) find that married people are 7.7 percent less likely to participate in the labour force than the people who are single, widowed, or divorced in the state of Penang, Malaysia. Moreover, Indian elderly who are either widowed or unmarried are more likely to participate in the labour force (Reddy, 2016).

2.2.5 Living arrangement

Living arrangement is one of the most important determinants for elderly to maintain in the workforce. In several Asian countries such as India, Vietnam, and rural China, the elderly who live alone or live with spouse are more likely to participate in the labour force than the elderly who live with their children or others (Adhikari et al., 2011; T. L. Giang & Nguyen, 2016; Pang et al., 2004; Reddy, 2016). T. L. Giang and Nguyen (2016) study the rural area in Vietnam and reveal that having children in the same household impacts on elderly's decision of whether to work or not, as a result, the older persons who live with their children and/or other people are 10.6 percent less likely to enter labour force, however, those who live with young children (aged under 15) are 9.2 percent more likely to work. In rural China, 83 percent of elderly who live alone participate in workforce compared with only 60 percent of those who live with their children (Pang et al., 2004). In the study of Thailand, Adhikari et al. (2011) find that the elderly who live with their children are 31 percent less likely to participate in the workforce than those who do not live with their children.

Moreover, household composition is also related to labour force participation. Traditionally, the household composition of the Asian society is extended family (T. L. Giang & Nguyen, 2016; G. S. Ling & Fernandez, 2010; Pang et al., 2004) and the majority of elderly are living

with their children or grandchildren. Moreover, among the South-east Asian countries, the religious belief and culture throughout the country is that respect and support to the elderly parents are important (Asis, Domingo, Knodel, & Mehta, 1995). Therefore, living with children is an important factor affecting the decision to work for married elderly (T. L. Giang & Nguyen, 2016).

In Malaysia, the number of children who are adults shows inverse relationship with labour force participation of the elderly. The working children provide financial assistance to their elderly parents and the elderly are less likely to work (G. S. Ling & Fernandez, 2010). On the other hand, the number of children under 15 years old is positively associated with the elderly's participation in the labour force (T. L. Giang & Nguyen, 2016).

Living arrangements are changed by out-migration in developing countries and migration of younger people and elderly living arrangement are found to be interrelated. Today, migration is happening in all regions of the world and this brings concern for older persons. Myanmar's migration rates have been increasing over the recent years. Based on 2014 Census in Myanmar, 2.02 million persons are living abroad which is about 4 percent of total population of Myanmar. Among them, 77 percent of males and 76 percent of females who are migrating belong to the young population aged between 15 to 34 (Department of Population, 2016). Teerawichitchainan and Knodel (2017) find that in the region of dry zone in Myanmar, the number of elderly people in migrant-sending households is more than those in non-migrant households. For the whole country, 75 percent of elderly are living with one or more sons and daughters, on the other hand, 15 percent of older men and women live alone or with spouse only (Department of Population, 2017b).

2.2.6 Physical health at present time

The health conditions of the older persons are strongly related to labour force participation. The health status of elderly is positively associated with labour force participation. The older persons with poor health are less likely to participate in labor force compared to the healthier persons (Adhikari et al., 2011). Elderly who have chronic diseases and who suffer from psychosocial symptoms contribute less to the labour force (G. S. Ling & Fernandez, 2010). In rural China, nearly 80 percent of healthy elderly aged between 60 and 69 and over 20 percent

of healthy elderly aged 70 and over are found in the formal labour market (Pang et al., 2004). Likewise, in urban China, the proportion of those with good health among older workers is greater than the proportion of those with good health among retirees (D. C. Ling & Chi, 2008). In Penang, the state of Malaysia, the health status and participation rate is positively related such that 53 percent of healthy elderly are in workforce while 24 percent of unhealthy elderly work (G. S. Ling & Fernandez, 2010).

On the other hand, nowadays, modern medicine is much improved and expensive so that older people might be compelled to participate in the labour market although they are in poor health themselves (G. S. Ling & Fernandez, 2010). Health status is strongly related with activities of daily life as well as non-participation in workforce especially among the elderly. For example, Vietnamese elderly in rural areas have poor health conditions and have undeveloped geriatrics healthcare system, insufficient equipment and medical staffs for caring the elderly (T. L. Giang & Nguyen, 2016). As a result, the majority of elderly (95 percent) in rural Vietnam are unhealthy. Among them, 44.11 percent are still working in the labour force. This is an instance when people cannot exit from the labour market although they are unfit.

2.2.7 Residence

Residence is also a dominant factor of labour force participation. The proportion of elderly who work is always higher in rural areas in most countries such as India, Thailand, China and Korea (Chayovan, 2005; Lee, 2010; Pang et al., 2004; Reddy, 2016). In India, between the period of 1983 and 2011-2012, while the trend of employment rate declines for elderly living in urban area, the employment rate of rural elderly has been stable. In 2011-2012, the participation rate in the rural area was two-times greater than those in the urban area (Reddy, 2016). Workplaces in rural area are undeveloped and a higher proportion of elderly are working in the agricultural sector compared to other sectors. Moreover, most older persons are working in the informal sector which has poor working condition, lower wage, and no retirement support. As a result, older people in the rural area are required to work to support themselves. On the other hand, the majority of urban people work in the formal sector and they can access pension system upon their retirement. As a result, they may exit from the workforce at 60 years of age (Reddy, 2016).

Likewise, in Thailand, the people who live in rural area are poor so that they cannot rest when they aged (Chayovan, 2005). Urbanization and declining agricultural activities are the major factors for the dramatic increase in the labour force participation rate of elderly men in rural area of Korea (Lee, 2010). When the younger people move to the urban area for better job opportunities, the agricultural sector in the rural area attracts the poor elderly people, who need to work to fulfill their families' needs, to replace the migrant's vacancies (Chayovan, 2005; Lee, 2010). Furthermore, older men who reside in rural area of Thailand are much more likely to participate in the labour force than urban dwellers (Chayovan, 2005).

2.2.8 Pension

Pension plays an important role in labour force participation in many countries (Edwards & James, 2009; G. S. Ling & Fernandez, 2010; Van Gameren, 2010; Vodopivec & Arunatilake, 2011). In Malaysia, the employees from public sector are more likely to leisure and the proportion of labour force participation in public sector is slightly lower than those of private sector because the government servants are eligible for pension benefit after the mandatory retirement age. The workers in private sector have inadequate pension such that they are more likely to work in their later life (G. S. Ling & Fernandez, 2010). Van Gameren (2010) finds that in Mexico, if the elderly benefit from pension, the probability of participating in the labour force will reduce. If the older persons have better economic situation which is sufficient for their long future, they may be more likely to leisure. Otherwise, they may be participating in the labour market, especially in the informal sector.

Edwards and James (2009) reveal the relationship between two pension systems and older person's drop out from the labour force in Chile. The Chile proposed a reformed pension system in 1981 which has incentives and constraints for older persons. The new social pension scheme significantly impacts on older person's contribution in the labour force, the labour force participation rates increase due to the decrease in the proportion receiving pensions compared with the old social pension scheme. In Sri Lanka, whether the workers retire from both full time and part time work place mainly depends on income from pension (Vodopivec & Arunatilake, 2011). Vodopivec and Arunatilake (2011) study the determinants of retirement tracing back 10 years after the age of 54 of 1060 older persons (aged between 61 and 65) who worked full time at the age of 54. The result reveals that a pension income

accounts for the exit of 21 percent for full time job and 7 percent for part time job for those older persons.

However, Pang et al. (2004) use multivariate analysis to investigate the decision to continue working of older persons in rural China. The result shows that the formal pension scheme does not affect the decision of labour force participation because the pension program covers only a small proportion of elderly in the rural area.

2.2.9 Receiving income or material support from children and others

Receiving income or assistance is another significant factor of elderly's labour force participation. The older persons who have regular financial assistance such as support from their children, pensions, and interest from saving are more likely to retire from workplace (G. S. Ling & Fernandez, 2010). In this case, elderly from Penang, Malaysia who have financial security are 50 percent less likely to participate in the labour force than those who lack financial security which include income from children, pensions, interest earning etc. (G. S. Ling & Fernandez, 2010). The tradition of Thailand is that children have responsibility to take care and provide support to their aged parents (Adhikari et al., 2011).

Older persons who live in developing countries have to struggle more than those who live in developed countries. In order to provide for their daily usage at later life, the elderly mainly depend on social pensions, savings and support from their children or other relatives. People in poor countries cannot access the retirement support program as well as do not have much savings. Therefore, they only depend on support from their children and other relatives (Pang et al., 2004).

Nowadays, the family structure has changed from extended family to nuclear family that may result in a decrease in the provision of care of children to their older parents. Moreover, in the tradition of some races, older parents do not depend on assistance from their children. As a result, the proportion of elderly in the labour force is high in the state of Penang, Malaysia (G. S. Ling & Fernandez, 2010).

Knodel and Pothisiri (2015) study living arrangement and related intergenerational support by comparing between Thailand and Myanmar. In those countries, children are the main source of financial and material support to the older persons, which account for 59 percent for Myanmar's older persons in 2012 and 40 percent for Thailand's older persons in 2011. They analyze the material support from children by different living arrangements. For the Myanmar older persons, 93 percent received any amount and 55.5 percent received substantial amount (total value exceeds 100,000 MMK per year which is equivalent with 125 US$ at that time) from their children. For the relationship between particular living arrangement and material support, over half of older persons receive substantial amount from co-resident children which is the highest rate and 23 percent of older persons receive substantial amount from non-coresident children which is the lowest rate among all types of living arrangement.

2.2.10 Saving

The decision of elderly people whether to continue to work depends on their financial resources. The wealthier older persons prefer to retire early, controlling for other variables. However, wealth depends on individual saving behavior in their entire lifetime. If the elderly have enough saving, they may exit from the labour market at the age of 60 (Coile, 2015).

Although the workers from public and private sectors want to retire at the age of 60, they cannot depend on their savings and pensions for their daily expenditures and health costs. Therefore, the proportion of elderly in the labour force is quite higher in developing countries compared to developed countries (National Economic and Social Development Board, 2009).

In the rural China, Pang et al. (2004) finds that farmers in the rural area have no sustainable financial resource. They have little saving and the government social welfare benefit is not enough for survival. As a result, they can only work as much as possible to pay for their daily expenditures.

To conclude, there are many factors affecting older persons' decision whether to continue to work or not. It may be different depending on a country's context, traditions, and economic and social development. According to the above information, the older persons' demographic

characteristics such as gender, highest education level, marital status, living arrangement, residence and their association with older persons' labour force participation are mixed. The older persons' demographic characteristics such as age, and health conditions; financial factors such as pension, support from children, other relatives and non-relatives, and saving are negatively associated with labour force participation. Due to similarity in country context, some traditions and economic development, this study reviews the literature from neighbouring countries and some ASEAN countries such as China, India, Malaysia, Sri Lanka, Thailand and Vietnam. Moreover, this study uses the literature from some developed countries to compare with developing in some factors. However, in the case of Myanmar, there are very few literatures about the factors affecting older people's participation in labour market. Therefore, this study intends to fill the gap in research by exploring the relationship between elderly's characteristics and their continuity in private labour market in Myanmar.

CHAPTER 3
CONCEPTUAL FRAMEWORK AND RESEARCH METHODOLOGY

This section presents the conceptual framework and the details of the research methodology used to carry out the proposed study. The research methodology includes method of analysis, research hypotheses, data source and access, sample design and coverage, and operationalization of variables.

3.1 Conceptual framework

Based on the model of the meaning of working for older workers (MOWFOW), the lidA framework, the literature review in Chapter 2, and the available data this study will analyse the older persons' demographic characteristics and financial security as the determinants or influencing factors of labour force participation of older persons in Myanmar. This study wants to reveal the gender and residential difference in older persons' labour market, and how these differences affect on older persons' labour force participation. Therefore, the analysis is conducted separately for males and females as well as for rural and urban areas. Therefore, this study uses two conceptual frameworks which are the model to analyse gender variation (figure 6) and the model to analyze area variation (figure 7). In these two models, there are some difference in independent variables. For the analysis of gender difference, the factor of gender is excluded from the independent variables. Likewise, the older persons' residential place is excluded from the independent variables for the analysis of area variation. The conceptual diagrams for this study are constructed as follows:

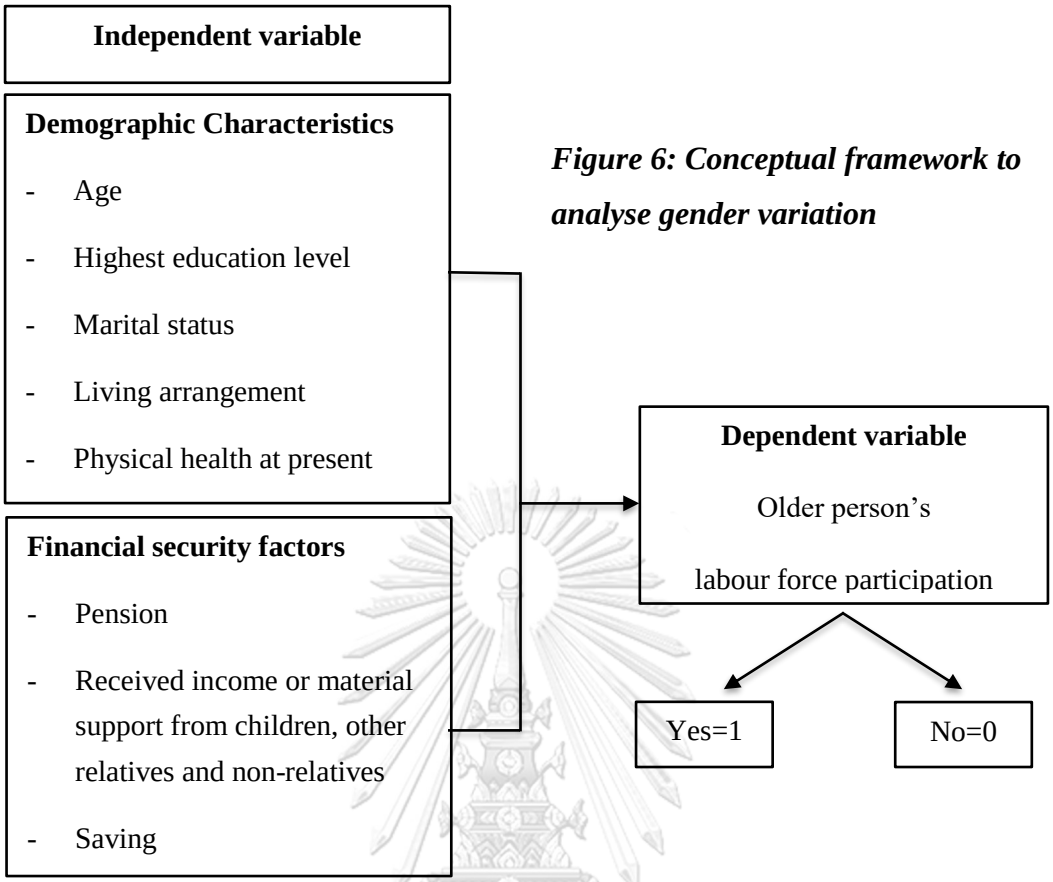


Figure 6: Conceptual framework to analyse gender variation

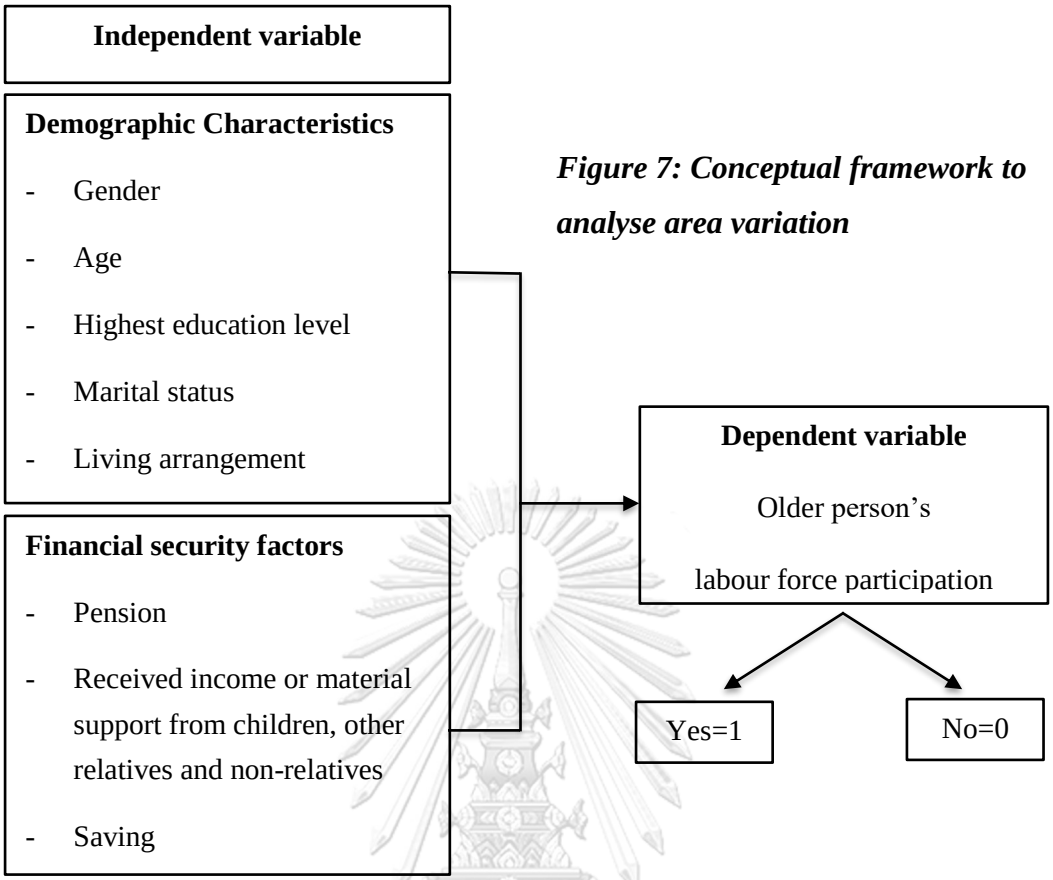


Figure 7: Conceptual framework to analyse area variation

The conceptual framework for this study has two major groups of variables: the independent variables and dependent variables. This study includes two independent variables which are the older persons' demographic characteristics and the factors of financial security. The older persons' demographic characteristics are gender, age, highest education level, marital status, living arrangement, physical health at present time and their current residential place. The factors of financial security include receiving income from pension, receiving income or material support from children, other relatives and non-relatives, and their saving.

The dependent variable in this study is the labour force participation of older persons which is the information whether the respondent worked during the last year preceding the survey. The dummy variable of labor force participation is coded "1" if the respondent reported that he/she worked during the past year (any kind of work for income), and "0" if the respondent reported that he/she didn't work during the past year.

3.2 Method of analysis

Firstly, descriptive analyses are used to provide background information about demographic characteristics and the factors of financial security of older persons. Moreover, this study will identify the descriptive statistics of the labour force participation rate by older persons' demographic characteristics and financial security characteristics separately by gender, and also by area of residence.

This study will then analyze the relationship between older persons' labour force participation and demographics and financial security characteristics. In this section, Logit model is a useful method to analyse the participation behavior (Varol, 2017). Binary Logit model is used if the dependent variable has only two possible outcomes, which are 0 and 1. Therefore, this study will use binary logit model to estimate the factors affecting the labour force participation of Myanmar's older population. The dependent variable in this study is labour force participation of older persons which is also a dichotomous variable (1 means the respondent participates in the labour force; 0 means the respondent does not participate in the labour force). This study wants to investigate how the gender variation affects on older persons' labour force participation by each independent variable, so males and females are analyzed separately. Similar analyses are also conducted separately for rural and urban areas. Moreover, the "z" statistics will be used to assess the significance of association between each of the demographic characteristics and financial security characteristics and labour force participation.

The binary logistic model for this study is written as follows:

$$(Yn = 1|Xn) = Pn = \frac{1}{1 + e^{-z}} = \frac{e^{z}}{1 + e^{z}} = \frac{e^{b0+b1x1+b2x2+\cdots+bnxn}}{1 + e^{b0+b1x1+b2x2+\cdots+bnxn}}$$

The Logit model for this study is written as follows:

$$\log\left(\frac{Pn}{1 - Pn}\right) = b0 + b1x1 + b2x2 + \cdots + bnxn$$

where,

$\boldsymbol{Y}$ is the dependent variable representing older persons' labour force participation, wherein participation equals 1, and no participation equals 0;

$\boldsymbol{b}_0$ is the intercept;

$\boldsymbol{b}_i$ is the coefficient of the independent variable, $\boldsymbol{x}_i$ (i=1 to n);

$\boldsymbol{x}_i$ is the independent variable (representing demographic and financial security factor of older persons) (i=1 to n);

This study also computes marginal effects to show the derivative of the probability that the dependent variable of older persons' labour force participation equals one, with respect to a particular conditioning variable. The marginal effect shows the change in the probability of labour force participation for one unit increase in the independent variable from the baseline, holding other variables constant (T. Giang & Le, 2015). In each independent variable, this study will construct dummy variables of particular information. Among the dummy variables in each independent variable, one dummy variable is assigned as a reference and others will be comparative. A positive coefficient indicates that the comparative dummy variable increases the likelihood of being in the labour force compared to the reference dummy variable. In conversely, a negative coefficient indicates that the comparative dummy variable decreases the likelihood of being in the labour force compared to the reference dummy variable.

3.3 Research hypothesis

On the basis of literature review and conceptual framework, I intend to test the following hypotheses:

(1) The older males are more likely to participate in the labour force than the older females.

(2) The young older persons are more likely to participate in the labour force than the old elderly persons.

(3) The older persons with lower education are more likely to participate in the labour force than the older persons with higher education.

(4) The married older persons are more likely to participate in the labour force than those with other marital status such as widowed/separated/divorced and single.

(5) The older persons who live alone are more likely to participate in the labour force than those with other kinds of living arrangements.

(6) The healthy older persons are more likely to participate in the labour force than the unhealthy older persons.

(7) The rural older persons are more likely to participate in the labour force than the urban older persons.

(8) The older persons who have pension benefit are less likely to participate in the labour force than those who do not have pension benefit.

(9) The older persons who receive income or material support from their children are less likely to participate in the labour force than those who don't.

(10) The older persons who receive income or material support from other relatives or non-relatives are less likely to participate in the labour force than those who don't.

(11) The older persons who have saving are less likely to participate in the labour force than those who have no saving.

3.4 Data source and access

This study utilizes the dataset from the 2012 Survey of Older Persons in Myanmar which is the first survey about older persons in Myanmar and supported by United Nations Population Fund (UNFPA) and Age UK. The survey is conducted by a private survey research team named Myanmar Survey Research in collaboration with HelpAge International. This survey is nationally representative except for Kachin State, due to insecurity reasons. Myanmar is organized with 7 states, 7 regions and one Union territory and the proportion of the population of Kachin State is 3.28 percent of the country's total population (Department of Population, 2015). So, the data from excluded area is assumed not to impact on the national representative of the survey sample. The survey consists of 4080 older people.

3.5 Sample design and coverage

The sample was designed by multi-staged random sampling method. First, 60 sample townships were randomly selected out of over 300 townships. Second, 90 urban wards and 150 rural village tracts were chosen from selected township. Third, households were randomly chosen from the household list provided by the administrators of wards and village tracts. Finally, one single respondent who are over 60 was taken from each marked household, but if there were more eligible older persons, one older person was randomly chosen from among the older persons.

According to the survey team records, the actual prevalence of the two age groups was 50.7 percent in young aged group (aged between 60 and 69) and 49.3 percent in aged group (aged 70 and over), however, the preceding group have 1960 persons which accounts 48 percent and the latter group have 2120 persons which accounts 52 percent of total respondents in the sample. Therefore, in order to adjust the proportion of two age strata which is over-representing in the aged group (aged 70 and over) and to get the adjusted results because of the sample design of interviewing only one respondent in each selected household, this study uses the weights. The interview took about 55 minutes to complete for each person and the data collection was face-to-face interview using close-ended questionnaires (Knodel, 2014). The survey questionnaires are attached in the appendix of this thesis.

3.6 Operationalization of variables

This study attempts to explore the determinants of labour force participation the older persons (the age of 60 years) in Myanmar using the survey of 2012 older people in Myanmar. In this study, the dependent variable is labour force participation and independent variables include demographic characteristics and financial security of older persons which are explained in detail in the following sub-sections.

3.6.1 Dependent variable

In this study, labour force participation is the main dependent variable. In the survey questionnaire, the question of **"Aside from housework, during the last year, did you work to support yourself or your family?"** is the main information for the dependent variable. If

the respondent answers “Yes”, this means the persons is participating in the labour force and “No” means the person is not participating in the labour force.

3.6.2 Independent variables

Gender: Gender is the biological characteristics of a person at the time of birth. The variable will take the form of a dummy variable (1 = male, 0 = female).

Age: Age represents the age of the respondent at the time of survey. In this study, only the older person who are 60 years and over will be considered for a comparative analysis of association between labour force participation and age. The age of older persons will be categorized into three groups (i) 60-69 years as young old; (ii) 70-79 years as older old; and (iii) 80 years and above as oldest old. In this variable, the young group (60-69 years) is the reference.

Highest level of education: This variable is the highest level of education completed by an older person at the time of survey. In the survey questionnaire, the question of “What was the highest level of schooling completed?” is the information for this variable. The education level includes no school, some primary, finished primary, middle school, high school, vocational, college/university, monastic education, still in school, and others education. However, this study re-categorizes the groups into no education which is the reference, monastic education (which is unofficial education that is viewed as below complete primary education but better than incomplete primary[2]) and other education (which may be domestic vocational training such as sewing, embroidery, knitting, tapestry), primary education (including some primary education and completed primary education), lower secondary education (which is similar to middle school), and upper secondary education and higher (including high school, vocational education, and college/university).

Marital status: This variable is current marital status of an older person. This study creates three dummy variables which are married, single and combination of separated/divorced/ widowed. The married group will be defined as base.

[2] Knodel (2014)

Living arrangement: Living arrangement will be re-categorized into five dummy variables. These are living alone, living with spouse but without children (regardless of others), living with spouse and children (regardless of others), living with children but without spouse (regardless of others), living with others (including other relatives or non-relatives but without spouse and children). The children include children of respondents, step child of respondents and children-in-law. Others include grandchild, niece/nephew, parent, parent-in-law, grand parent, sibling/sibling-in-law, other relatives, servant, paid caregiver, and other non-relative. Among these variables, the older persons who live alone will be the reference group.

Physical health at present time: This is the physical health condition of older persons at the time of survey. The survey question asks "How would you rate your physical health at the present time? Would you say it is very good, good, fair, poor or very poor?" In this study, the physical health of older persons will be re-categorized into good and not good by combining very good and good as "good" health condition, and fair, poor and very poor as "not good" health condition.

Residence: It refers to the place or area where the older person resides at the time of survey. These are urban and rural which will take the form of a dummy variable (1 = urban and 0 = rural).

Pension: The dummy variable of pension which is equal to 1 if the older person gets benefit from pension, and 0 otherwise.

Receiving income or material support: This variable represents the situation whether the older person gets cash or other material support from children, other relatives and non-relatives. In the questionnaire "Do you receive income or material support (including food) from any of the following sources?" is the information for this variable. However, in order to have appropriate information for this study, I will create two dummy variables; one for support from children, and the other for support from other relatives or non-relatives.

Saving: The survey question states "Do you have any type of savings such as money, or gold?" If the older person says "Yes" that means he/she has saving and the answer "No" means he/she does not have saving. This information is categorized into a dummy variable of older person's saving.

Table 1 presents the descriptions of the variables.

Table 1: ***Descriptions of the variables***

Variables Name	**Description**	**Measurement Scale**			**Level of Measurement**
Labour Force Participation	During the last year, the respondent worked to support himself/herself or family.	Dummy Variable	Yes	No	Nominal
		Worked	1	0	
Gender	Biological sex of the elderly	Dummy Variable			Nominal
		Male **(ref.)**	1		
		Female	0		
Age	Completed age at last birth of the elderly	Dummy Variable	Yes	No	Ordinal
		60-69 **(ref.)**			
		70-79	1	0	
		80+	1	0	
Highest level of education	The highest level of schooling completed	Dummy Variable	Yes	No	Nominal
		No education **(ref.)**			
		Monastic education and other education	1	0	
		Primary education	1	0	
		Lower secondary	1	0	
		Upper secondary and higher	1	0	

Marital Status	Current marital status of the elderly	Dummy Variable	Yes	No	Nominal
		Married **(ref.)**			
		Widowed/Separated/ Divorced	1	0	
		Single	1	0	
Living arrangement	Living arrangement of elderly respondent	Dummy Variable	Yes	No	Nominal
		Living alone **(ref.)**			
		Living with spouse but no children	1	0	
		Living with spouse and children	1	0	
		Living with children but no spouse	1	0	
		Living with others (other relatives or non-relatives)	1	0	
Physical health at present time	The self-report of respondent at current health situation	Dummy Variable			Nominal
		Good	1		
		Not good **(ref.)**	0		
Residence	The current living place of respondent	Dummy Variable			Nominal
		Urban	1		
		Rural **(ref.)**	0		
Pension	The older person who benefit from pension	Dummy Variable			Nominal
		Yes	1		
		No **(ref.)**	0		
Receiving income or material support from children	The respondent receives income or material support (including food) from their	Dummy Variable			Nominal
		Yes	1		

	children	No **(ref.)**	0	
Receiving income or material support from other relatives or non-relatives	The respondent receives income or material support (including food) from other relatives or non-relatives	Dummy Variable		Nominal
		Yes	1	
		No **(ref.)**	0	
Saving	The savings like money or gold that the respondent has.	Dummy Variable		Nominal
		Yes	1	
		No **(ref.)**	0	

CHAPTER 4
RESULTS AND DISCUSSION

This chapter presents findings from the data analysis according to the methodology explained in Chapter 3. The data used to analyse the results of this study is drawn from the survey of older persons in Myanmar conducted in 2012. The descriptive statistics and rates of labour force participation by older persons' characteristics are calculated by cross tabulation. The determinants of labour force participation among older persons in Myanmar are analysed using binary logistic regression.

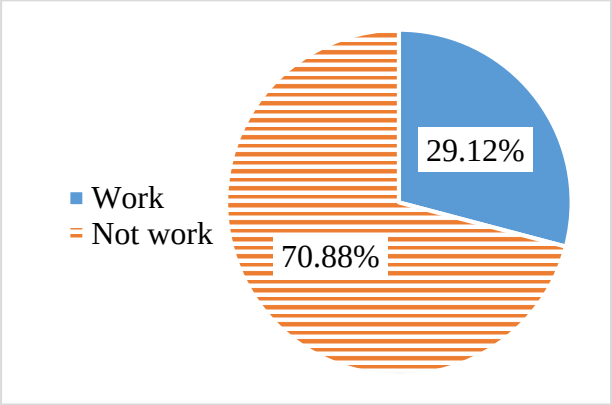
The first section provides percentage distribution of explained variable (older persons' labour force participation) and various explanatory variables such as older persons' demographic characteristics and financial security factors. Moreover, it presents how gender and residence as well as their demographic characteristics and financial security factors affect on the labour force participation of older persons. The second section analyses the binary logistic regression. The results are discussed based on the marginal effects to show the changes in the probability of labour force participation for one unit increase in explanatory variable from the baseline. Moreover, this section provides discussion of the results with analyses and interpretations. The final section provides the summary of this chapter.

4.1 Descriptive statistics

4.1.1 Labour force participation of older persons

According to the 2012 Survey of Older Persons in Myanmar, 29.12 percent of older persons participate in the labour force.

Figure 8: ***The proportion of older persons in labour force***



Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data

The 2012 is the first national survey of older people in Myanmar. Therefore, we cannot analyze the pattern of the older persons' participation in labour force due to the lack of database for preceding years. However, compared with some of ASEAN and bordering countries, the labour force participation rate of Myanmar (29.12 percent in 2012) is lower than that of Thailand (40 percent in 2014) (Knodel, Teerawichitchainan, Prachuabmoh, & Pothisiri, 2015), Vietnam (39.94 percent in 2011) (T. Giang & Le, 2015), and India (37.1 percent in 2011-2012) (Reddy, 2016). Moreover, Myanmar's labor market participation rate of older persons does not reach the global average participation rate which are 47 percent for older males and 23.8 percent for older females. Labour market participation rates of older persons in Myanmar are 41.70 percent for older males and 19.68 percent for older females (ILO, 2011 cited in UNFPA, 2012).

Among those elderly in the labour force, the proportion of older males is 61.4 percent which is significantly higher than older females (38.6 percent). In terms of residential area, for older persons who work, 22.6 percent of elderly labour force are living in urban cities and 77.4 percent are living in rural villages.

Figure 9: ***The working elderly proportioned by gender (Figure: 9A) and by area (Figure: 9B)***

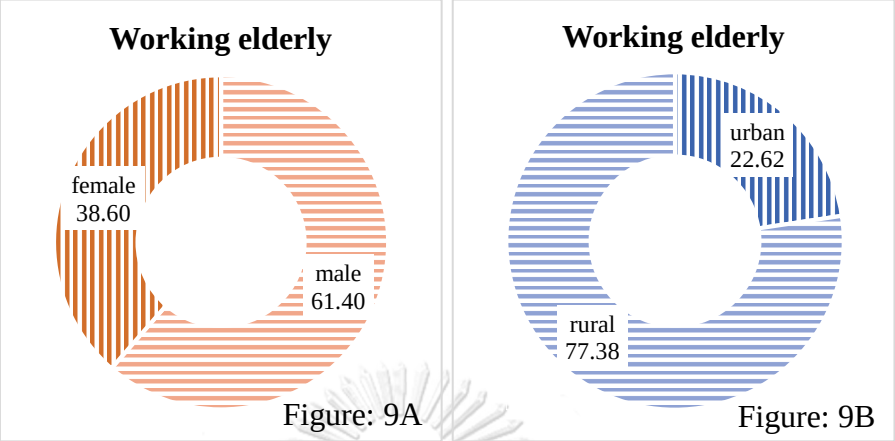


Figure: 9A Figure: 9B

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data

Table 2 shows the percentage distribution of older people in the labour market during the year prior to the 2012 Survey of Older Persons. Myanmar is an agro-based economy such that the majority of older people (52.6 percent) work in agriculture or livestock as farmers followed by own account sales/service worker (22.2 percent) and unskilled labourer in non-agricultural work (13.6 percent). Agriculture is such a big business that the majority of older people work in this sector, however, own account sales or service is another major option for older people who live in cities, in particular older females.

Table 2: ***Percentage distribution of working older persons by type of work***

Types of work	Total	Gender		Area of residence	
		Male	Female	Urban	Rural
Farmer (incl. livestock)	52.60	60.34	40.28	23.95	60.98
Laborer in agricultural	5.05	4.14	6.49	1.18	6.18
Unskilled laborer (non-agricultural)	13.64	13.96	13.12	12.68	13.92

Own-account worker	22.19	13.31	36.31	47.00	14.94
Employee (incl. govt, military, private)	3.04	4.09	1.38	8.48	1.46
Others	3.48	4.15	2.42	6.71	2.53
Total	100	100	100	100	100

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data

4.1.2 Percentage distribution of demographic characteristics and financial security factors

Table 3 presents the percentage distribution of older persons by demographic characteristics and financial security factors. In Myanmar, older females outnumber older males such that over half (57.12 percent) of total respondents are females and only 42.88 percent are males. The mean age of the older population in Myanmar is 71 years with minimum age of 60 years and maximum age of 106 years. About half (50.74 percent) of the older population are in the age group 60-69 years, another 34.04 percent are in the group of 70-79 year, and the rest (15.22 percent) are the oldest population as of age 80 years and over. In terms of education, nearly one quarter (24.21 percent) of older persons have neither formal education nor other life skills education. The majority of older people have primary education and monastic education (30.24 percent and 29.12 percent respectively). The three groups (those with no education, primary education, and monastic education) account for over 80 percent of the total respondents in the sample. A small proportion of older persons has higher education which account for 16.7 percent (lower secondary education accounts for 9.23 percent and upper secondary and higher education accounts for 7.47 percent).

For marital status, 52.98 percent of older persons are widowed or separated or divorced compared to 42.8 percent who are married. The percentage of older persons who never married is only 4.23 percent. The majority of older persons report that they have poor physical health (66.74 percent), while 33.26 percent report that they are in good physical health. The majority of older persons are living with spouses and children or only with children in which the proportion of older persons who live with spouse and children altogether is 34.49 percent and the proportion of older people who live only with children is

43.48 percent. The other types of living arrangement such as living alone, living with spouse without children, and living with others (other relatives or non-relatives) are quite small (below 10 percent in each type). In terms of residential area, the majority of elderly population live in rural areas (69.66 percent) while a small portion (30.34 percent) reside in urban areas.

Regarding income, the vast majority of older population (92.73 percent) have no pension benefits and only a very small proportion (7.27 percent) have pension. Concerning family support, 84.06 percent of older people receive income or support from their children, while 10.82 percent obtain income or support from other relatives and non-relatives. In addition, a large proportion of older people have no saving which accounts for 82.62 percent of total elderly and the remaining 17.38 percent have saving such as money or gold.

Table 3: ***Percentage distribution of older persons by demographic characteristics and financial security factors***

Variable	N	Percent
Respondent	**4080**	
Labour force participation		
Work	1,188	29.12%
Not work	2,892	70.88%
Gender		
Male	1,749	42.88
Female	2,331	57.12
Age		
60-69 years	2,070	50.74
70-79 years	1,389	34.04
80+ years	621	15.22
Highest education level		
No education	977	23.94
Monastic education and other education	1,188	29.12

Primary education	1,234	30.24
Lower secondary education	376	9.23
Upper secondary and higher education	305	7.47
Marital status		
Married	1,746	42.80
Widowed/separated/divorced	2,161	52.98
Single	172	4.23
Physical health		
Good	1,357	33.26
Not good	2,723	66.74
Living arrangement		
Living alone	273	6.70
Living with spouse but no children	333	8.17
Living with spouse and children	1,407	34.48
Living with children but no spouse	1,774	43.48
Living with others (other relatives or non-relatives)	293	7.17
Residence		
Urban	1,238	30.34
Rural	2,842	69.66
Pension		
Yes	297	7.27
No	3,783	92.73
Income or support from children		
Yes	3,430	84.06
No	650	15.94
Income or support from other relatives or non-relatives		
Yes	441	10.82
No	3,639	89.18
Saving		
Yes	709	17.38

No	3,371	82.62

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data

Table 4 shows the percentage distribution of demographic characteristics and financial security factors by gender. The result shows that gender difference matters in the older population. Life expectancy of females is higher than males. Accordingly, we can see the greater proportions of females in older age groups.

Considering education, gender difference in education is found in Myanmar. The proportion of females who have no official education as well as the proportion of those who have primary education constitute over one-third of the all females. On the other hand, nearly half (41 percent) of older males have monastic education followed by primary education (26 percent). The proportion of older males is significantly higher than that of females among the older people who have lower secondary education and upper secondary and higher education. Therefore, the results show that males are more likely to study and have better education than females for those generations.

The relationship between older people's physical health and chorological age is negative such that the larger proportion of females in older age groups results in the greater proportion of unhealthy older females in Myanmar.

The relationship between marital status and living arrangement is revealed in this study.

The majority of older males are married (69 percent) which contribute to the greater number of older males who live with spouses or with both spouses and children. Moreover, those proportions (married males and older males who live with spouses or with both spouses and children) are higher than those of female counterparts. On the contrary, Myanmar is experiencing a rise in female singlehood and female longevity. Therefore, the number of females who are widowed or separated or divorced are larger than other marital status; consequently, the proportion of females who are living with only children (without spouse) are the highest among the older females.

Regarding financial security, particularly, it is observed that elderly males are contributing more in public work than females. Women in Myanmar traditionally prefer to work in the domestic domain such as doing household chores and caring for family members. Therefore, the proportion of older people who obtain income from public pension is higher in the case of males compared to females.

In terms of intergenerational support, there is no significant difference between older males and females receiving assistance from their children. The proportion of older people who receive any support from children on particular gender is not significantly difference between males and females (82 percent for males and 86 percent for females). Therefore, those results reveal that intergenerational support to older people in Myanmar has no gender preference. However, females fare better than males in other financial security factors such as assistance from other relatives or non-relatives (the proportion of females is double that of males), and having saving (19 percent for females and 16 percent for males).

Table 4: ***Percentage distribution of demographic characteristics and financial security factors: gender variation***

Variable	Male	Female
Respondent	**1749**	**2331**
Labour force participation		
Work	41.70%	19.68%
Not work	58.30%	80.32%
Age		
60-69 years	54.69%	47.76%
70-79 years	32.95%	34.86%
80+ years	12.36%	17.37%
Highest education level		
No education	7.49%	36.29%
Monastic education and other education	41.49%	19.83%

Primary education	26.20%	33.28%
Lower secondary education	12.52%	6.75%
Upper secondary and higher education	12.30%	3.85%
Marital status		
Married	69.14%	23.02%
Widowed/separated/divorced	28.65%	71.24%
Single	2.21%	5.74%
Physical health		
Good	39.10%	28.87%
Not good	60.90%	71.13%
Living arrangement		
Living alone	3.71%	8.95%
Living with spouse but no children	12.79%	4.70%
Living with spouse and children	56.29%	18.10%
Living with children but no spouse	23.83%	58.22%
Living with others (other relatives or non-relatives)	3.37%	10.03%
Residence		
Urban	29.04%	31.33%
Rural	70.96%	68.67%
Pension		
Yes	10.04%	5.19%
No	89.96%	94.81%
Income or support from children		
Yes	82.06%	85.56%
No	17.94%	14.44%
Income or support from other relatives or non-relatives		
Yes	7.16%	13.57%
No	92.84%	86.43%
Saving		
Yes	15.85%	18.53%

No	84.15%	81.47%

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data

The results from Table 5 show that there are significant differences between urban and rural older people. It is seen that the majority of older people are living in rural villages (70 percent) as compared to urban cities (30 percent). The results show that the urban area has slightly higher proportion of females compared to the rural area. For age distribution, the rural area has a larger proportion of those in the youngest age group. However, the urban area has a larger proportion of those in the oldest age group[3].

Regarding education, urban-rural differences in education factor is also found in this study. The results reveal that the older people in the urban area have more educational attainment than those in the rural area. The majority of children dropped out of school and joined the farming before completion of primary education (Tin, 2008). For such children, monastic education is more attractive as it is free of charge and also provide learning materials such as textbooks. Moreover, children can study in their leisure time or holidays (Nwe, 2017). Therefore, the older people who have no education or monastic education or primary education are widespread in the rural area and account for 27 percent, 33 percent and 31 percent, respectively. In the urban area, the consequence of better educational access and the prospects of better job opportunities that the proportion of urban older people who have lower secondary education (18 percent) or upper secondary and higher education (19 percent) are noticeably higher than their rural counterparts (5 percent for lower secondary education and 3 percent for upper secondary and higher education).

There is no significant difference between the proportion of marital status by urban and rural areas.

[3] Two possible reasons are that the older old move to urban city where is more advanced medical facilities and follow their children to stay with them, and another possible reason is different life expectancies between urban and rural elderly. However, according to the Myanmar's census results, migration is not common among the older persons as well as life expectancy of older people in urban and in rural areas are quite similar (Department of Population, 2017b). Therefore, the issue of increased proportion of older old in city deserves a future study.

In terms of pensioners, some literatures reveal that the internal migration of retirees is backward to their hometown or urban to suburban or urban to more comfortable place (Uhlenberg, 2009; Wiseman & Roseman, 1979). However, in this study, most of public pensioners are living in the cities as the proportion of those older people are significantly higher in cities (18 percent in urban and 2 percent in rural). This may be because the public pensioners withdraw their retirement pension at Government's Myanma Ecomomic Bank (MEB) which is located in city. Another reason may be that most of the government offices or workplaces are situated in cities, therefore, the retired persons are more likely to live in urban cities where they had worked earlier.

Concerning assistance from children, most of the older persons in both urban and rural receive income or support from their children, 84 percent for both urban and rural areas so that there is no difference between those areas.

According to the religious believe, sharing or donation to other people is good for the present and also for life after death (for instance being born as a better person or in a higher realm after death). Therefore, people usually share some food and materials to neighbouring people especially for the older people who are economically vulnerable, and other relatives. The proportion of older people who received cash support and materials from other relatives and non-relatives is slightly higher in urban cities compared to the rural area. However, those two proportions are quite low (12 percent for urban older people and 10 percent for rural older people).

Likewise, the proportion of older people who have saving is slightly higher in the urban area. As a result, the urban elderly are more secure in financial conditions as they receive more financial and materials support and have more saving than the rural elderly.

Table 5: ***Percentage distribution of demographic characteristics and financial security factors: residence variation***

Variable	Urban	Rural
Respondent	**1238**	**2842**
Labour force participation		
Work	21.71%	32.35%
Not work	78.29%	67.65%
Gender		
Male	41.03%	43.69%
Female	58.97%	56.31%
Age		
60-69 years	48.54%	51.69%
70-79 years	33.77%	34.16%
80+ years	17.69%	14.15%
Highest education level		
No education	16.15%	27.34%
Monastic education and other education	18.66%	33.67%
Primary education	28.87%	30.85%
Lower secondary education	17.79%	5.49%
Upper secondary and higher education	18.54%	2.65%
Marital status		
Married	42.32%	43.00%
Widowed/separated/divorced	53.10%	52.92%
Single	4.58%	4.07%
Physical health		
Good	30.77%	34.34%
Not good	69.23%	65.66%
Living arrangement		
Living alone	4.97%	7.45%
Living with spouse but no children	7.86%	8.31%
Living with spouse and children	34.22%	34.59%
Living with children but no spouse	45.19%	42.73%

Living with others (other relatives or non-relatives)	7.76%	6.92%
Pension		
Yes	18.46%	2.39%
No	81.54%	97.61%
Income or support from children		
Yes	84.20%	83.99%
No	15.80%	16.01%
Income or support from other relatives or non-relatives		
Yes	12.37%	10.14%
No	87.63%	89.86%
Saving		
Yes	18.75%	16.87%
No	81.25%	83.22%

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data

4.1.3 Labour force participation rate by characteristic: gender variation

Gender inequality is a dominant characteristic of the labour market in Myanmar. The proportion of older males in the labour market is higher than older females by all demographic characteristics and factors of financial security. Table 6 presents the percentage of older persons' participation in the labour force with respect to their characteristics and gender. For age groups, there is a significant difference between the proportion of males and females in the labour force. The youngest group has the highest labour force participation rate for both sexes (57.62 percent for males and 32.26 percent for females). Reversely, the oldest group has the lowest labour force participation rate for both genders (8.33 percent for males and 3.51 percent for females).

Concerning educational perspective, the older males have higher labour force participation rate than their female counterparts in all educational levels. The older persons who have finished primary education have the highest labour force participation rate compared to other educational levels for both male and female elderly (50.37 percent for males and 24.98

percent for females). While the participation of older males is over 30 percent, the percentage of older females in the labour force is lower than 20 percent for all educational levels except for primary education.

Turning to marital status, males have higher labour force participation rates than females for all marital status. Among them, the married older males have the highest participation rate. It is found that labour force participation of never married older males is similar to that of ever married older males (48.76 percent of ever married elderly males participate in labour force, and the figure is 43.47 percent for never married elderly males). However, older females' participation in the labour force is opposite to the case of males, for instance, single elderly females have the highest proportion in the labour force (33.61 percent) than other types of marital status such as 26.57 percent of married females and 16.33 percent of widowed or separated or divorced females.

For health characteristic, the older males have larger proportion in the labour market than the older females for both good and bad physical health. The older males who have good physical health have the highest proportion in the labour market (about 59.76 percent). This proportion is significantly higher than any other older persons with any kinds of health status. The older males who have poor physical health have the second highest proportion (30.10 percent). On the other hand, the older females who have good physical health also have higher proportion in the labour market than females with poor physical health (29.11 percent and 15.85 percent, respectively).

Regarding living arrangement of elderly people, the older persons who live with only spouse for both sexes have higher proportion in the labour market than the older persons with any other types of living arrangement, 60.93 percent for older males and 42.59 percent for older females, respectively. The older males who live with both spouse and children have the second highest proportion (46.05 percent) in employment. However, there is only a small difference in the proportions in the labour force between the older males and females who live alone, as well as between the older males and females who live with others (other relatives or non-relatives). The older persons' residence also influences their labour force participation. The older males have greater participation in labour force than the older females in both urban

city and rural village. The older males' participation rate is double the females' in each category. For example, 31.02 percent of urban males participate in the labour market while 15.24 percent of urban females are in the labour market. Moreover, 46.07 percent of rural males participate in the labour market while 21.71 percent of rural females are in the labour market.

The labour force participation rate is quite different between males and females who have no pension benefits. However, the rate is similar between males and females who have pension benefits. The results show that 44.19 percent of older males who do not have public pension continue working while 19.81 percent of older females do. Income or support from children plays an important role contributing to older persons continuation in the labour force. The older persons who do not get support from their children have much higher labour force participation rates than those who do (66.61 percent for males and 38.80 percent for females). Adams, King, and King (1996) reveal that the relationship between work and family are complex and have interactions among them. The labour force participation and emotional and instrumental support from family are negatively related. In other words, lower levels of family support may increase the probability to engage in the labour force for older persons. However, in this study, it is difficult to derive causal relationship between family support and labour force participation of older population as the analysis is cross-sectional.

The older persons whose have saving have higher labour force participation rate compared to those who don't. The proportions are 50.82 percent for older males and 23.29 percent for older females. The result shows that males have higher proportion in the labour force although they have saving. Some factors such as males' proportion and elderly biological age shape the relationship between labour force participation and saving in this study. In detail, we observed higher proportion of older males in labour force although they have saving because males are more likely to participate in the labour market. Among the older males with saving, half of them participate in the labour market. In terms of biological age, among the older persons who have saving, over half (53.48 percent) are young elderly (age between 60 to 69), which could explain the finding that those who have saving are more likely to participate in the labour market. However, according to the finding from Pettinger (2017), working and saving are positively related in working-age periods, people can more save over their income. However, the rich people (who have saving) prefer to retire at old age.

Therefore, based on the result in this study, the relationship between saving and labour force participation of older people is inconsistent with life-cycle theory or previous literatures (Coile, 2015; Pettinger, 2017).

Table 6: ***Labour force participation rate by gender***

Variable	Male	Female
Number of respondents in the labour force	**729**	**459**
Labour force participation		
Work	41.70	19.68
Not work	58.30	80.32
Age		
60-69 years	57.62	32.26
70-79 years	27.80	10.50
80+ years	8.33	3.51
Highest education level		
No education and others	46.61	16.30
Monastic education and other education	37.24	16.93
Primary education	50.37	24.98
Lower secondary education	43.08	19.72
Upper secondary and higher education	33.91	19.89
Marital status		
Married	48.76	26.57
Widowed/separated/divorced	24.52	16.33
Single	43.47	33.61
Physical health		
Good	59.76	29.11
Not good	30.10	15.85
Living arrangement		
Living alone	37.36	36.84
Living with spouse but no children	60.93	42.59

Living with spouse and children	46.05	22.25
Living with children but no spouse	23.48	12.84
Living with others (other relatives or non-relatives)	29.72	28.73
Residence		
Urban	31.02	15.24
Rural	46.07	21.71
Pension		
Yes	19.41	17.29
No	44.19	19.81
Income or support from children		
Yes	36.25	16.45
No	66.61	38.80
Income or support from other relatives or non-relatives		
Yes	18.79	17.53
No	43.47	20.02
Saving		
Yes	50.82	23.29
No	39.98	18.86

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data

4.1.4 Labour force participation rate by characteristic: residential variation

Residential variation is also influential on older persons' participation in the labour market. The proportion of older people in the labour force is higher for those in the rural area compared to urban area for all demographic characteristics and financial security factors. Table 7 presents the labour force participation rates of older people with respect to their characteristics and residence. For gender perspective, the rural older people have higher labour force participation rate than the urban older ones. In those figures, 46.07 percent of rural males versus 31.02 percent of urban males are in the labour market. Likewise, the females' results show that 21.71 percent of rural females versus 15.24 percent of urban

females are in the labour market. For age, the different labour force participation rate between rural and urban among older people aged 60-69 are higher than other age groups.

For all educational attainments, rural older people have higher labour force rate than urban older persons. The labour force participation rates of rural older people in all educational levels are over 30 percent except for “no education” level. The results show that the older persons who have lower secondary education or who have upper secondary and higher education have higher proportions in the labour market than other older persons with any level of educational attainment. This phenomenon is related with the gender imbalance and higher proportion of young people in these education levels. The majority of the rural elderly who study lower secondary or upper secondary are males (64 percent for lower secondary and 83 percent upper secondary) and younger elderly aged between 60 and 69 (6 percent for lower secondary and 78 percent for upper secondary). Those two characteristics of males and younger age encourage the older people to work more than their counterparts so that the labour force participation rate of elderly with those characteristics are higher. However, most of them are working in the agriculture so the results show that the older people lived in villages are working in labour intensive work although they have appropriate education attainment.

Residential variation also significantly affects on labour force participation of older people with different marital status. As the results show, 47.28 percent of older married people in rural areas participate in the labour force, while the corresponding figure is 29.49 percent in the urban area. For those who are single, labour force participation rate of older people living in both rural and urban are high; accounting for 38.22 percent and 30.92 percent respectively. For health condition, the participation rates in labour force are different and depend on area. In terms of ratios, for the rural area, 48.04 percent of healthy older persons work. On the other hand, for the urban area, 35.66 percent of healthy older persons work. Similarly for the older persons’ living arrangement characteristics, the older people who live only with spouse or who live with both spouse and children have different labour force participation rates based on different residential areas. These two factors have higher proportion in work than other kinds of living arrangement. Among the older people who live only with spouse, for those in the rural area, 59.20 percent, and for those in urban areas, 44.49 percent, work. Likewise,

among the older working people who live with both spouse and children, 44.47 percent of those in the rural area work while 26.01 percent of those in the urban area work.

Similar to older persons' demographic characteristics, older persons in the rural areas have greater participation in the labour market for all financial security factors. The labour force participation of rural older persons are higher than those live in urban whether they have public pension or not. For these results, between the rural and urban older persons who have no pensions benefits, the former have higher proportion in labour market than the latter (32.39 percent for rural and 23.25 percent for urban). For the older persons who do not receive support from children, 56.42 percent of rural older people and 42.47 percent of urban older people contribute to the labour market. Similarly, for the rural older persons who have not been supported from other relatives, 33.84 percent work and the corresponding figure for urban older persons is 22.60 percent. The older persons who have saved money or gold are participating in labour force more. The labour force participation rate of rural older persons with saving is 38.86 percent and those of urban older persons with saving is only 24.18 percent.

Table 7: ***Labour force participation rate by residence***

Variable	Urban	Rural
Number of respondents in the labour force	**269**	**919**
Labour force participation		
Work	21.71	32.35
Not work	78.29	67.65
Gender		
Male	31.02	46.07
Female	15.24	21.71
Age		
60-69 years	33.28	48.38
70-79 years	14.97	18.85
80+ years	3.03	6.37
Highest education level		

No education	15.31	21.67
Monastic education and other education	17.86	32.11
Primary education	25.05	38.23
Lower secondary education	21.90	49.41
Upper secondary and higher education	25.80	41.90
Marital status		
Married	29.49	47.28
Widowed/separated /divorced	14.72	19.76
Single	30.93	38.22
Physical health		
Good	35.66	48.04
Not good	15.52	24.14
Living arrangement		
Living alone	31.18	38.65
Living with spouse but no children	44.49	59.20
Living with spouse and children	26.01	44.47
Living with children but no spouse	12.62	16.59
Living with others (other relatives or non-relatives)	26.58	30.08
Pension		
Yes	14.92	30.72
No	23.25	32.39
Income or support from children		
Yes	17.82	27.76
No	42.47	56.42
Income or support from other relatives or non-relatives		
Yes	15.44	19.18
No	22.60	33.84
Saving		
Yes	24.18	38.86
No	21.14	31.04

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data

4.2 Logistic regression results and discussions

In this section, the results of the logistics regression analysis will be presented. This study reports the marginal effects of various variables on the likelihood of older person's participation in the labour force. Moreover, some discussions will be presented.

4.2.1 Gender variation and labour force participation

Table 8 illustrates the results of the logistic regressions analysing males' and females' labour force participation.

The results show that age is reversely related to older persons' labour force participation. When the people get old, they are less likely to participate in the labour force. For example, males aged 70-79 are 23 percent and males over 80 are 38 percent less likely to participate in the labour force compared to males who are 60-69. Similarly, for older females, those aged 70-79 are 14 percent and those over 80 are 18 percent less likely to participate in the labour force than those aged 60-69. The probabilities of decreased labour force participation among the older males are greater than in the case of older females. For both males and females, the results are statistically significant at 99 percent confidence level (p=0.000).

Labour force participation decreases when people get older for both genders due to their health conditions (Adhikari et al., 2011; T. L. Giang & Nguyen, 2016). When the vast majority of farming is cultivated by traditional methods which demand much physical strength, older people who live in rural areas withdraw significantly from labour market when they get old.

The educational attainment of older people is negatively associated with their labour force participation. The results are statistically significant for two levels of education; (a) older males' monastic education and (b) older males' upper secondary and higher education. For

these two levels of education, the older males who have monastic education are 12 percent and who have upper secondary and higher education are 15 percent less likely to work compared to the non-educated older males. Both results are statistically significant at 95 percent confidence level (p=0.024 and p=0.011 respectively).

These results are consistent with the studies in India and Thailand (Keeratipongpaiboon, 2012; Reddy, 2016). Illiterate older people are more likely to work in the informal works which are not secure, unsafe, have no retirement benefits and do not require workers to have good education.

The relationship between marital status of older people and labour force participation is complex. Males who are widowed or separated or divorced or single are more likely to work compared to married males although the results are not statistically significant. On the other hand, females who are widowed or separated or divorced or single are less likely to work compared to married females. However, the results are only statistically significant for the result of the never-married females. For the never-married older females, they are 10 percent less likely to continue to work than the ever-married older females. The result is statistically significant at 95 percent confidence level (p=0.033).

Physical health conditions have strong correlation with labour force participation for both older males and females. An older male of good physical health has 30 percent higher probability of engaging in the labour market, compared to an older male with bad physical health. The corresponding figure is 8 percent for females. The results are strongly statistically significant at 99 percent confident level. The p values for both results are 0.000.

Teerawichitchainan and Knodel (2015) reveal that poverty and poor health are prevalent in the country. According to the World Bank's World Development Indicators database, in Myanmar, the government's expenditure allocates 4.95 percent of GDP for health in 2015 which is lower than the average of East Asia and Pacific region (6.77 percent). Myanmar's health strategy (2014-2018) does not include health care for geriatric population or long-term care specifically, and there are only a few health policies and less budget for the health care of

older population (Han, 2012). Consequently, only one-third (33.26 percent) of older people report that they have good physical health based on this dataset.

Theoretically, health can have both negative and positive relationship with labour force participation. People who have poor health condition may need to work more to earn salary for required health care services. Therefore, poor health of older people leads to more labor force participation (Cai & Kalb, 2006). On the other hand, poor health reduces the labour force participation rate when the nature of work demands good physical conditions. Nevertheless, most empirical studies prove that good physical health has positive relationship with labour force participation (Cai & Kalb, 2006).

The result in this study also shows positive relationship between good physical health and labour force participation. Teerawichitchainan and Knodel (2015) find that the poor older people reported worse self-assessed health, less sensory impairment, and lower functional limitations than the older people who are better off economically in Myanmar. The results in this study suggest that the poor health condition of older people is one of the main determinants of low labour force participation rate in Myanmar.

The types of living arrangement show complex interaction with labour force participation. For the older males, the older people who live with spouse without children or live with spouse together with children are more likely to work compared to older people who live alone. The elderly male who live with children without spouse and who live with others (other relatives or non-relatives) are less likely to work compared to older people who live alone. However, the results are not statistically significant. On the other hand, the older females who live alone have greater probability of working than any other type of living arrangement. Statistically, the older females who live with spouse are 10 percent (statistically significant at 95 percent confidence level), who live together with spouse and children are 16 percent (strongly statistically significant at 99 percent confidence level), who live with children but no spouses are 18 percent (strongly statistically significant at 99 percent confidence level), who live with others (other relatives or non-relatives) are 5 percent (statistically significant at 95 percent confidence level) less likely to participate in the labour force than the older females who live alone.

The residential conditions of older people are also related to their participation in employment. The results show that labor force participation of older males and females who live in villages increase 9 percent and 4 percent respectively. The figure for elderly male is statistically significant at 99 percent confidence level and the elderly female's result is statistically significant at 95 percent confidence level (p=0.007 and p=0.014 respectively)

The main driver of older people entering into the labour market is internal migration of young population who move from rural villages to urban cities to seek better opportunities. Therefore, the age distribution of rural villages is changed and the changing to ageing population in rural villages is happening more quickly than the whole population. Delta region and dry zone, which are mostly rural areas, face labour shortage of young people to work in farms. Therefore, the older people are substituted for young people for farming (Teerawichitchainan & Knodel, 2017).

This study indicates that older people receiving pension benefits or support from children, other relatives and non-relatives are less likely to work, while the older people who have saving are more likely to work. There is significant differences in the decision to work between older men and women.

The financial security of older people are negatively associated with participation in the labour market. Firstly, the older males who have public pensions are 25 percent less likely to work compared to those who do not have public pensions. It is statistically significant at 99 percent confidence level. Older females who have public pension are less likely to continue in labour force but the result is not statistically significant.

The support from children is a significant factor of labour force participation for the older people. The labor force participation of older males who receive support from children are decreased by 41 percent and that of female counterparts are decreased by 17 percent compared to their counterparts who are not supported. Both regression results are strongly and statistically significant at 99 percent confidence level (p=0.000 for both results).

Similarly, the older persons who are supported by other relatives or non-relatives are less likely to engage in the labour force. The elderly people who are supported by relatives or non-relatives are less likely to work by about 30 percent for males and 9 percent for females compared to those who are not supported. The results are also highly statistically significant at 99 percent confidence level (p=0.000 for both results).

Prevalence of filial respect and support for parents is the context of South East Asian counties (Asis et al., 1995). According to filial responsibility, children are the important factor to provide support (which include caring, social connection, financial and material) to their parents (Knodel & Pothisiri, 2015) and some people also care for other relatives and neighbours especially the older people. Those filial responsibility is related to influence of Theravada Buddhist in the countries. The children prefer their parents to rest from working or to do religious work if they can support them. Therefore, the result in this study is in line with previous literature that support of children is negatively associated with older people's labour force participation (G. S. Ling & Fernandez, 2010).

The older males who have saving are 7 percent more likely to work compared to those who do not have saving. It is quite statistically significant at 90 percent confidence level (p=0.085).

The results of pseudo R-square of this model are 0.2643 for the older males and 0.1828 for the older females. Therefore, the results indicate that the conceptual framework by gender (model) better predicts the outcomes of older males than older females. Moreover, the p values (both male and female) are less than 0.001 (Prob > chi2= 0.0000) showing that the models are well-fitting and statistically significant.

Table 8: ***Marginal effects on labour force participation: gender variation***

Independent variables	**Male**		**Female**	
	dy/dy	**SE**	**dy/dx**	**SE**

Age				
60-69 years	(Ref.)		(Ref.)	
70-79 years	-0.2303***	.03814	-0.1367***	.01385
80+ years	-0.3808***	.07384	-0.1761***	.0118
Highest education level				
No education	(Ref.)		(Ref.)	
Monastic and other education	-0.1225**	.05416	-0.0033	.02054
Primary education	-0.0725	.05515	0.0255	.01807
Lower secondary education	-0.0535	.06242	0.0092	.0321
Upper secondary and higher edu;	-0.1544**	.06067	-0.0249	.03504
Marital status				
Married	(Ref.)		(Ref.)	
Widowed/separated/divorced	0.9885	2.05851	-0.1163	.15627
Single	0.6943	3.01072	-0.1045**	.04955
Physical health				
Good=1	0.2956***	.03346	0.0787***	.01741
Living arrangement				
Living alone	(Ref.)		(Ref.)	
Living with spouse but no children	0.9138	6.33187	-0.1044**	.04715
Living with spouse and children	0.9960	1.11067	-0.1623***	.0527
Living with children but no spouse	-0.1021	.07955	-0.1799***	.02861
Living with others	-0.0701	.11679	-0.0470**	.02367
Residence				
Urban=1	-0.0946***	.03497	-0.0380**	.01556
Pension				
Having=1	-0.2530***	.05539	-0.0359	.02825
Income or support from children				
Received=1	-0.4129***	.03947	-0.1725***	.03848
Income or support from other relatives or non-relatives				
Received=1	-0.2995***	.0668	-0.0936***	.0164

Saving				
Having=1	0.0670*	.03889	0.0178	.01858
Number of observations	**1742**		**2338**	
Pseudo R^2	**0.2643**		**0.1828**	

Notes: ***, **, * denote statistically significant coefficients less than or at the 1, 5 and 10 percent significance level, respectively.

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data.

4.2.2 Residential variation and labour force participation

Table 9 illustrates the results of the logistic regression comparing between older persons' labour force participation in urban and rural areas.

The results show that males are more likely to participate in the labour force than females in both urban and rural areas. The results show larger magnitude in the case of rural area. Older males in rural area are 19 percent and older males in urban area are 14 percent more likely to participate in the labour force than their female counterparts. Both of these results are strongly statistically significant at 99 percent confidence level (p=0.000).

This result is similar to the case of urban India and Thailand. Generally, the responsibilities of women in household are particularly to perform the domestic work, to care for young grandchild and in some cases, women are working in home-based economy. However, they do not earn any income or they are not counted as those who work in formal economic sector (Adhikari et al., 2011; Chayovan, 2005; Klasen & Pieters, 2015).

As described in the previous section, age is negatively related to older persons' labour force participation regardless of gender and residential area. Moreover, the probabilities to depart from labour force for rural older people are higher than urban people. For the rural area, those aged 70-79 are 21 percent and those aged over 80 are 28 percent less likely to participate in the labour force than those who are 60-69. Among the urban older people, the people who are

70-79 are 11 percent and who are over 80 are 19 percent less likely to participate in the labour force than the older persons who are 60-69. All the results are strongly statistically significant at 99 percent confidence level (p=0.000).

The relationships between older persons' educational attainments and labour force participation are different by area of residence only for those with lower secondary education and higher level of education. For those in the urban area, education is not correlated with labour force participation. The rural older people who have lower secondary education are 9 percent more likely and who have upper secondary and higher education are 9 percent less likely to participate in the labour force compared to those who are uneducated. The results are statistically significant at 90 percent and 95 percent confidence level respectively (p=0.056 and p=0.038).

For the relationship between older people' marital status and labour force participation, the results are not statistically significant for both urban and rural areas.

The older persons' health condition is significantly associated with labour force participation, regardless of their residential areas. The healthy elderly who live in urban area are 13 percent and those live in rural are 19 percent more likely to work than those who are unhealthy. Both results are strongly statistically significant at 99 percent confidence level (p=0.000).

For the older persons' living arrangement, the elderly people who live with children (without spouse) are less likely to participate in the labour force than those who live alone. In comparison, the magnitude of the effect in the rural area is larger than the urban area (23 percent for rural elderly and 10 percent for urban elderly). These two results are statistically significant at 99 percent confidence level and 95 percent confidence level, respectively (p=0.018 and p=0.000). Furthermore, the older people who live with others (other relatives or non-relatives) in rural area are less likely (9 percent) to work than the older people who live alone. The result is statistically significant at 95 percent confidence level (p=0.029).

Except from saving which is positively associated with labour force participation, the other financial security factors are negatively associated with labour force participation for both rural and urban areas, and the results are statistically significant. The results appear similar between urban and rural elderly in the decision making regarding whether or not to work.

The older people who have income from pension are less likely to work than those who do not have pension, in which both the urban and rural people show equal probability of 10 percent each. However, the result of urban is strongly statistically significant at 99 percent confidence level and the result of rural is statistically significant at 95 percent confidence level (p=0.000 and p=0.016).

Likewise, the older people who receive support from children or other relatives or non-relatives are less likely to continue in labour market than those who do not, regardless of differences in residence. Older population who get financial or material support from their children in both cities and villages are less likely (30 percent each) to continue in the labour market. Besides, the elderly communities who get income or material support from other relatives or non-relatives are less likely to join in the labor market (13 percent for urban and 17 percent for rural areas). All of these statistics are strongly and statistically significant at 99 percent confidence level (p=0.000).

Finally, the saving factor is positively related to labour force participation for all older people, however, the results are statistically significant for the rural area only. The results show that the rural elderly who have saving are 5 percent more likely to continue in labour market. The result is statistically significant at 90 percent confidence level (p=0.068). The relationship between older persons' labour force participation and saving are opposite to recent literatures in both the analyses of gender difference and area difference (Coile, 2015; Pettinger, 2017). This study finds that only 17.28 percent of total older people have saving. Among the older people who have saving, 16.74 percent report that their saving is sufficient while 83.26 percent report that their saving is not sufficient to cover the needs that may arise in the future. Those results show that only 2.89% of total older population have sufficient saving while 14.39% of total older population have insufficient saving. Moreover, among the older people who have saving, 53.48 percent of older people are aged between 60 and 69. The results in

this study suggests that the older people' characteristic of young age is encouraging the older people to participate more in the labour market. The finding that the older people who have saving are more likely to work can be partly explained by the fact that the majority of older people (among the older people who have saving) report that their saving is not sufficient to use in their remaining life, and most of them are young that they can participate in the labour market.

Finally, the results of pseudo R-square of this model are 0.2376 for the urban elderly and 0.2513 for the rural elderly. Therefore, the results indicate that the conceptual framework by area (model) better predicts the outcomes of rural elderly than urban elderly. Moreover, the p values (both urban and rural) are less than 0.001 (Prob> chi2= 0.0000) indicating that the model is well-fitting and statistically significant.

Table 9: ***Marginal effects on labour force participation: residential variation***

Independent variables	**Urban**		**Rural**	
	dy/dx	**SE**	**dy/dx**	**SE**
Gender				
Male=1	0.1438***	.02818	0.1914***	.02265
Age				
60-69 years	(Ref.)		(Ref.)	
70-79 years	-0.1101***	.01918	-0.2090***	.01722
80+ years	-0.1923***	.01643	-0.2801***	.0148
Highest education level				
No education	(Ref.)		(Ref.)	
Monastic and other education	-0.0232	.03403	-0.0296	.02662
Primary education	0.0310	.03511	0.0019	.02616
Lower secondary education	-0.0387	.03178	0.0943*	.05044
Upper secondary and higher edu;	-0.0323	.03398	-0.0923**	.04347
Marital status				
Married	(Ref.)		(Ref.)	

Widowed/separated/divorced	0.0497	.16228	-0.0798	.29697
Single	-0.0061	.16682	-0.1390	.17726
Physical health				
Good=1	0.1294***	.0258	0.1907***	.02075
Living arrangement				
Living alone	(Ref.)		(Ref.)	
Living with spouse but no children	0.0032	.17099	-0.0905	.23179
Living with spouse and children	-0.0547	.15065	-0.1937	.24477
Living with children but no spouse	-0.1022**	.04306	-0.226***	.03334
Living with others	-0.0197	.05028	-0.0902**	.0411
Pension				
Having=1	-0.1030***	.01917	-0.1020**	.04238
Income or support from children				
Received=1	-0.3090***	.05759	-0.3084***	.03747
Income or support from other relatives or non-relatives				
Received=1	-0.1341***	.01872	-0.1734***	.02455
Saving				
Having=1	0.0143	.02612	0.0467*	.02552
Number of observations	**1241**		**2839**	
Pseudo R^2	**0.2376**		**0.2513**	

Notes: ***, **, * denote statistically significant coefficients less than or at the 1, 5 and 10 percent significance level, respectively.

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data.

4.3 Summary of this chapter

To summarize, there are a number of factors which influence the labour force participation of older people. This study explores the factors (such as older persons' demographic characteristics and financial security factors) that influence the labour force participation of older persons in Myanmar. Among those influencing factors, demographic characteristics such as gender, age, educational attainment, physical health, living arrangement, living place

and financial security factors such as public pension, support from children, other relatives and non-relatives, and saving are strongly related to labour force participation of older people.

Moreover, most of the results are consistent with the hypotheses in this study except for saving factor. The older males are more likely to participate in the labour force than the older females who live in cities or villages. The young elderly are more likely to participate in the labour force than old elderly regardless of gender and residence. The hypothesis on the relationship between education and labour force participation is only consistent for the older males and the rural older people such that the older persons with lower education are more likely to participate in labour force than the older persons with higher education. For the hypothesis on the relationship between marital status and labour force participation, this is only consistent for the older females such that the ever-married females are less likely to participate in the labour force than never-married females. The result of the relationship between physical health and labour force participation is in line with the hypothesis that the healthy older persons are more likely to participate in the labour force than the unhealthy older persons regardless of gender and residence. For the living arrangement factor, only the case of older females is in line with the hypothesis that the older persons who live alone are more likely to participate in the labour force than those with other types of living arrangements. Not only the older males but also the older females who live in the rural area are more likely to participate in labour force than their counterparts who live in the urban area.

All the financial security factors in this study are in line with the hypotheses except for saving factor. For those hypotheses, the older persons with public pension, and those who receive income or materials from children, other relatives, and non-relatives are less likely to participate in the labour force than those who do not. However, there is inconsistency with the hypothesis in this study that saving is positively related with labour force participation. There is only a small proportion of older persons with saving (17 percent) and they may feel that their saving is not sufficient to cover everything they need in their remaining life, so they might still want to continue working.

In conclusion, according to the survey of older persons in Myanmar, the labour force participation rate of older persons is quite low which is lower than other neighbouring countries. Over half of older people are engaged in the agriculture work in which most of them are males and live in the rural area. The labour force participation of older people is influenced by their demographic characteristics and conditions of their income security. The main findings in this study are that the older males, the healthy elderly, the older people who live in rural area are more likely to participate in the labour force, on the other hand, the older people who receive any kinds of support are less likely to participate in the labour force regardless of gender and residential area. The findings also show that the differences in terms of gender and residential area impact on how demographic characteristics and conditions of financial security are correlated with older persons' participation in the labour market.

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusion of the thesis and provides some policy recommendations to improve labour engagement for older people in Myanmar. The first section describes the conclusion of this study. The second section provides policy implications and recommendations. Finally, the third section provides limitations and future research directions.

5.1 Conclusion

The main objectives of the study are to explore the situation of labour force participation among older persons in Myanmar and to investigate the demographic characteristics and financial security factors that influence the labor force participation of older persons in Myanmar. This study uses the national representative dataset from the 2012 Survey of Older Persons in Myanmar which is the latest survey focusing on older population. The survey consists of 4080 older people aged over 60. To investigate the proportions of older persons belonging to different demographic characteristics and financial security factors, and the prevalence of each characteristic in the labour market, this study applies descriptive statistics with cross-tabulation. Furthermore, this study undertakes binary logistic regression to reveal the relationship between labour force participation and its influencing factors. The results in this study reveal that about 29 percent of older people are participating in the labour force, and various explanatory variables of demographic characteristics and financial security factors are associated with labour force participation of older population.

The older people's demographic characteristics such as gender, age, educational attainment, marital status, health, living arrangement, and living place affect on older persons' labour force participation. The older people's financial security factors such as pension benefit, supports from children, other relatives (for instance- parent/ parent-in-law, sibling/ sibling-in-law and niece/ nephew) or non-relatives (for instance, paid caregiver), and saving influence on participation in the labour force. This study also finds gender difference and residence difference in elderly labour market.

From gender perspective, the older males who live in rural area, received non-formal education, and have good health and saving are more likely to work. Meanwhile, those who have pension benefits, receive supports from children, other relatives or non-relatives are less likely to work. On the other hand, the older females who are younger, married, healthy, live alone and live in rural areas are more likely to work while those who get income from children, other relatives or non-relatives are less likely to work. Therefore, the results show that marital status and living arrangement are not influential for the older males' labour force participation when public pension and saving do not matter for the older females' labour force participation.

From residence perspective, urban older people who are male, younger, who have good health, and live alone are more likely to work and those who have public pension, who receive supports from children, other relatives or non-relatives are less likely to work. On the other hand, the rural older people who are male, younger, who have lower secondary education, have good health, live alone and have saving are more likely to work and those who have upper secondary and higher education, have public pension, and receive financial assistance from children, other relatives or non-relatives are less likely to work. The analyses show that education, marital status and saving do not matter for the urban elderly' labour force participation and marital status does not matter for the rural elderly' labour force participation.

The summary of findings of the relationship between older persons' labour force participation and their demographic characteristics and financial security factors from this study are shown in the following table.

Table 10: ***Summary table of the relationship between older persons' labour force participation and each independent variable***

Independent variables	Male	Female	Urban	Rural
Gender				
Male=1	N/A	N/A	(+)***	(+)***
Age				

60-69 years	(Ref.)	(Ref.)	(Ref.)	(Ref.)
70-79 years	(-)***	(-)***	(-)***	(-)***
80+ years	(-)***	(-)***	(-)***	(-)***
Highest education level				
No education	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Monastic and other education	(-)**	No sig;	No sig;	No sig;
Primary education	No sig;	No sig;	No sig;	No sig;
Lower secondary education	No sig;	No sig;	No sig;	(+)*
Upper secondary and higher education	(-)**	No sig;	No sig;	(-)**
Marital status				
Married	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Widowed/separated/divorced	No sig;	No sig;	No sig;	No sig;
Single	No sig;	(-)**	No sig;	No sig;
Physical health				
Good=1	(+)***	(+)***	(+)***	(+)***
Living arrangement				
Living alone	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Living with spouse but no children	No sig;	(-)**	No sig;	No sig;
Living with spouse and children	No sig;	(-)***	No sig;	No sig;
Living with children but no spouse	No sig;	(-)***	(-)**	(-)***
Living with others	No sig;	(-)**	No sig;	(-)**
Residence				
Urban=1	(-)***	(-)**	N/A	N/A
Pension				
Having=1	(-)***	No sig;	(-)***	(-)**
Income or support from children				
Received=1	(-)***	(-)***	(-)***	(-)***
Income or support from other relatives or non-relatives				
Received=1	(-)***	(-)***	(-)***	(-)***
Saving				

Having=1	(+)*	No sig;	No sig;	(+)*

Notes: ***, **, * denote coefficients less than or at the 1, 5 and 10 percent significance levels, respectively.

(+) means positive relationship with labour force participation.

(-) means negative relationship with labour force participation.

No sig; means no statistically significant relationship with labour force participation.

Source: Author's calculations using the 2012 Survey of Older Persons in Myanmar using weighted data.

This study would like to highlight that the labour force participation rate of older people in Myanmar is very low for a poor and developing country. This situation may be explained by many reasons. This study reveals some influencing factors of older persons' labour force participation. Among the older persons' demographic characteristics, the factors such as gender, age, health condition, residential place are significantly related to participation in the labour force. Those influencing factors are similar with other developing or some neighbouring countries. Moreover, this study finds that the intergenerational support from working-age generation to the old generation is prevalent, and the intergenerational support is significantly related to older persons' participation in the labour force as well. According to the findings, the study highlights some policy recommendations to the government.

5.2 Theories and their implications in Myanmar

Theoretically, the results in this study are consistent with theories which are illustrated in chapter 2. In terms of productive ageing, the older people's demographic characteristics influence the productive behaviors of older persons (Morrow-Howell & Wang, 2013). According to productive engagement, educational attainment is the human capital investment and it is important for older persons' engagement in the labour force. Moreover, gender difference and residence difference also provide different opportunities for older people' participation in the labour force. Those phenomena are also observed in Myanmar.

In terms of life-cycle theory, the older people are vulnerable because the many do not work and thus do not earn any income. In many cases, pension benefits and savings are important for daily expenditure, and those who have pensions and savings confident that they have sufficient income for the rest of their lives, and are less likely to work. In Myanmar, the older persons with public pension have lower probability of engaging in the labour market, which is consistent with the theory. However, the results in the paper show that older people with savings are more likely to work. This situation is opposite with life-cycle theory, however, the majority of older people reported that their saving is not sufficient for their future. Therefore, they work in the labour market which is consistent with the literature revealed by Cameron and Cobb-Clark (2002).

In terms of intergenerational solidarity, function (financial and nonfinancial exchanges) element is significantly pronounced among Myanmar people. Financial exchange, intergenerational support and filial responsibility are widespread in the country. A high proportion of older people receive financial assistance and material support from their children, and those supports are strongly influential on the parent's decision whether or not to work. Therefore, the relationship between intergenerational solidarity particularly functional exchange and labour force participation of older people are significant in Myanmar.

5.3 Policy implications and recommendations

This section will provide some policies initiated by globally and in Myanmar which target older persons and development. Moreover, this section will show some deficiencies in adapted policies on ageing population in Myanmar and provide some recommendations to improve socioeconomic situations of older people that are related to labour force participation.

Among the policies of the Madrid Plan of Action, engagement of older people in social and economic development is one of the actions to urgently focus on. Moreover, to sustain the development of all people's segments, the 2030 Agenda for Sustainable Development Goals was adapted, which includes the topics such as ending poverty, promoting health and well-being, gender equality, promoting employment and decent work, reducing inequality (United Nations Economic and Social Commission for Asia and the Pacific, 2017).

Myanmar is facing a significant demographic change in which ageing population is one of the main characteristics. In the last few years, more extensive highlight on ageing in Myanmar has occurred. Myanmar adopted the National Plan of Action on Ageing in 2014 and enacted the elderly law in 2016 which focuses on health and well-being, social pensions, older persons' care and prevention of discrimination and abuse.

Similar to other Asia and Pacific countries, Myanmar developed National Action Plan on Ageing which focuses on (1) work and labour; (2) healthcare; (3) social protection; (4) Education knowledge training; and (5) Emergency response and disasters under the section of older persons and development. In terms of work and labour, saving awareness and incentive tax relief on saving, promoting employment for older people through providing job training and job opportunities, micro-finance services for older people to start own business, community income generating projects for older people, incentive for companies/employer to hire or assign older people (Williamson, 2015).

The Myanmar Older People Law (2016) promotes older persons' earning opportunities by (1) creating part-time job opportunities and the jobs which can be performed by older people, (2) investing in livelihoods of older population, (3) providing vocational and professional training for older population, and (4) adapting appropriate tax reducing and exemption schemes for the employers who give job opportunities to elderly people.

According to the World Bank, Myanmar is a lower-middle income country and 32.1 percent of the population live below the national poverty line in 2015. The government is burdened with many political and economic issues and reducing poverty is one of urgent issues to solve. Therefore, this study highlights a few important key messages that might be useful for reducing poverty among older population. Furthermore, it provides policy recommendations to make older people more financially secure in their later life as well as to improve the quality of life.

The main recommendation of this study is to encourage the productive ageing society among older population. For Myanmar, the proportion of older people in the labour force is relatively low compared to other ASEAN countries, there is room for policy intervention in this area. Promoting productive ageing is one of the effective ways to reduce poverty of older people. For instance, to increase labour force participation of older people, Thailand promoted the productive ageing in the 2nd National Plan for Older Persons (coverage from 2002 to 2011). As a Consequence, the economic activity among older persons increases significantly in both 2011 and 2014 compared to 1994 and 2002 (Knodel et al., 2015).

According to the official documents, older people are encouraged to participate in labour market. However, the law and policy are mediocre and we cannot see significant opportunities for older people to earn regularly or to engage in the labour force. Only enacting the law may not be enough for Myanmar to become strongly productive ageing society. Therefore, the government is required to consider other aspects such as (1) Society Level, (2) Family, and (3) Individual. For the society level, organizations and communities are also important to construct productive ageing mechanism because they can attract people from different societies using their assets while the government lack resources to promote productive ageing. In terms of the family, they directly impact on older people as the family can encourage older people who desire to work and make it convenient for them to involve in the labour market. They should support, and encourage older people to have productive engagement in the labour market. Individuals are the most important factor for productive ageing. Productive ageing encourages older people to have more positive self-esteem and positive life during their later life (Mui, 2010; Peng & Fei, 2013). Therefore, the people in each level (such as policy-making level, society level, family level, individual level) should collaborate to become strongly productive ageing society or to have more participation in labour force for the older population.

Secondly, this study found strong relationship between health condition and labour force participation. Although the healthy elderly are more likely to participate in the labour market, a small proportion of healthy older people is found in Myanmar. Furthermore, among the older people who are outside of labour market, 77 percent of older people, reported that they stopped working due to the health reasons. Those results may alarm the government to promote geriatric healthcare and long-term healthcare of its population. Myanmar National

Health Policy targets the entire population to access the basic health services. However, elderly health care is one of the programs under the National Health Policy (2017-2021). Therefore, the government should focus more on elderly healthcare to become healthy ageing society and also focus on long-term health care of young population. Moreover, the government should emphasize on the concept of healthy ageing and active ageing to improve the quality of life of older population which is more widespread in developed countries.

Thirdly, this study also shows how gender difference in labour force participation of older people could be interpreted by demographic characteristics and financial security factors. The gender discrimination is found not only among older people but also the working age population. The result in this study finds that older women are less likely to participate in the labour market than older men. Likewise, Myanmar had 33.9 million working age population in which 46 percent are males and 54 percent are females in 2015. However, the labour force participation rate for males was 80 percent, considerably higher than that of females by 52 percent (Ministry of Labour Employment and Social Security & Central Statistical Organization, 2015).

It is related to gender inequality in the labour market, however, these gender relations are hindered by cultural or religious norms and this aspect is difficult to bring to the public agenda. In Myanmar, work in the house and care for household members are the responsibilities of women, and conversely, working outside or paid jobs are duties of men (Thein, 2015). These traditional gender roles contribute to the gender difference in labour force participation especially in the rural areas (Department of Population, 2017a). The other explanation for the higher unemployment rate of women in Myanmar is that men and women have unequal access to employment opportunities, and not that women a lack opportunities (Department of Population, 2017a).

Other concerns for women are the longevity and inadequate pension benefits. Those concerns are basic for the high proportion of older females have lack financial security. Therefore, the government should create more accessible job opportunities for females to encourage women's participation in the labor force instead of working in the home and take responsibility in family matters. Gender equality among older population is a key determinant

to succeed in several sustainable development goals such as ending poverty, healthy life and well-being of all ages. Moreover, SDG Goal 8 suggests that increasing women's labour force participation generates opportunities for additional economic growth as well as help with the situation of shrinking working-age population.

Fourthly, geographic location significantly impacts on labour engagement of older people. The results in this study shows that the older people in rural area are more likely to be economically active regardless of other characteristics. However, the common work for older people in rural is labour intensive (59 percent are farmers and 13 percent are unskilled labour) such that it is hardship for older people. Moreover, this study reveals that the older people who have some secondary education are doing agricultural work. It can be seen that the government policy is not adequate to create less physically demanding working environment for older people. Therefore, the government should encourage technology-based agriculture to make work more comfortable for older population. Unlike to rural older population, the older people in urban areas are less likely to participate in the labour market. Therefore, the government should create job opportunities for the older people who have desire and are able to work in the urban areas.

Fifthly, Myanmar has an immense working age population because of demographic transition (lower mortality rate and remaining high birth rate) in the recent decade. The consequence of the first demographic dividend, the large share of working age population earns income and can support the ageing population. Therefore, the majority of older people receive financial and materials assistance from their children. Those working age population will make a transition to ageing population in the near future, however they will live with fewer working age population because of decreased fertility. Therefore, the government needs to start to consider demographic transition of increased older population. The government should encourage the working age population to save more to cover their future life. The greater saving can lead to successful second demographic dividend. In other word, the economic benefit for the greater proportion of elderly people will become the second demographic dividend.

Finally, the saving in working-age period is not enough for the future living cost at retirement age. Therefore, we observe that the older people are participating in the labour force although they have saving. The result in this study shows that saving is positively related to labour force participation of older population which is not consistent with life-cycle theory. The main reason for insufficient saving is low income. The minimum wage for Myanmar worker is MMK[4] 4800 per day which is the lowest compared to other countries in Southeast Asia. The report on Myanmar Labour Force Survey (2015) finds that the average wage per day for all employees is 4,760 MMK. At the national level the average monthly income of the monthly wage earner is 124,100 MMK, out of which the share of basic pay is 109,700 MMK. The government should consider raising the minimum wage for its population by adapting appropriate economic policies in order to enable working-age population to save more. However, there are some possible economic consequences arising from the minimum wage. The government should learn from other countries how they provide social security and what is appropriate for Myanmar. For a low or middle-income country (LMIC), deducting from the income for income tax or some saving programmes may make it more difficult for workers with low wage. Therefore, the government should emphasize economic development of the whole country followed by adapting appropriate social security programme or National Saving Fund.

5.4 Limitation and future research directions

This study has some limitations due to the use of secondary data of the Survey of Older Persons. Data in this study is cross-sectional so that it is difficult to derive causal relationship between some factors. Moreover, Myanmar highlights older population after conducting the Survey of Older Persons (2012). Nation Plan of Action on Ageing (2014) and Elderly People Law (2016) are a few years later than the survey. Some demographic and socioeconomic situations of older people may have changed because of those laws and policies. Panel data would be the best information to examine how those laws and policies affect on ageing society. Therefore, this study would like to recommend to the government to conduct Survey of Older Persons as panel data.

[4] MMK means Myanmar Kyat (Myanmar currency) and which is equivalent to 0.000655 American Dollar (the average rate of 2019). Source://https://fx-rate.net/USD/MMK/#calculator

According to the life-cycle theory and previous literatures, when the older people have saving, they are less likely to participate in labour force. In this study, the older people who have saving are more likely to work which is opposite with the theory and previous literatures. Most of the older people who have saving (for example, some cash or gold) reported that the amount of saving is not sufficient for the remaining life. Therefore, future research should focus on more details about saving.

This research explores the determinants of labour force participation among older persons using quantitative research methodology. The factors associated with labour force participation in this study are measurable. However, people may have some reasons behind the continuity in labour force at retirement age which are related to their feeling on working. For example, some older people continue to work although they are rich. They feel that working make meaningful leisure time and also it will help to improve their mental health. Therefore, this study would like to suggest future work on labour force participation of older people to also include qualitative research to understand other mental situations of older persons in relation to the decision whether or not to work.

Finally, this study would like to suggest some areas for future studies that will be related with this study. These suggested studies will reveal other aspects of factors influencing on labour force participation of older population such as (1) the relationship between poverty and older persons' labour force participation; and (2) the relationship between young people's migration (rural-urban) and older persons' labour force participation.

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