THE CAUSAL RELATIONSHIP IN FINANCIAL LITERACY, SELF-EFFICACY, FINANCIAL PLANNING MOTIVATION, RISK IN FINANCIAL PLANNING AND RETIREMENT FINANCIAL PLANNING AMONG PEOPLE IN THE NORTHEASTERN REGION OF THAILAND IN THE CONTEXT OF AN AGEING SOCIETY

Lanliya Samsuwan

A Dissertation Submitted in Partial
Fulfillment of the Requirements for the Degree of
Doctor of Public Administration
School of Public Administration
National Institute of Development Administration
2019

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ABSTRACT

Title of Dissertation	THE CAUSAL RELATIONSHIP IN FINANCIAL LITERACY, SELF-EFFICACY, FINANCIAL PLANNING MOTIVATION, RISK IN FINANCIAL PLANNING AND RETIREMENT FINANCIAL PLANNING AMONG PEOPLE IN THE NORTHEASTERN REGION OF THAILAND IN THE CONTEXT OF AN AGEING SOCIETY
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Degree	Doctor of Public Administration
Year	2019

This study objectives are 1) to examine the causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand through empirical data performed by confirmatory factor analysis, 2) to analyze causal relationship of financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand by structural equation modelling, and 3) to present policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning targeted at people living in the northeastern region of Thailand. Mixed methods research is adopted.

For quantitative research approach, the samples are drawn from the results of survey of financial literacy carried out by the Bank of Thailand. According to the 2016 survey, the provinces with the lowest financial literacy includes Buriram, Loei, Nakhon Phanom, Udon Thani, and Surin. Proportional sampling is utilized by selecting the working population aged 25 – 59 years. Then, accidental sampling is applied to obtain 460 samples.

For qualitative research method, focus group is conducted with 9 experts to review the draft of policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning intended for people living in the northeast of Thailand.

The results of confirmatory factor analysis and structured equation modelling find

that most factor loadings of observed variables are greater than 0.40 with the statistical significance at the 0.01 level. The smallest values of factor loadings of observed variables that belong to each latent variable includes financial knowledge (financial literacy), responsibility (self-efficacy), direction and goals (financial planning motivation), return on investment (risk in financial planning), and supporting factors (retirement financial planning). For the causal relationship of the factors influencing retirement planning, it is found that risk in financial planning, financial literacy, and financial motivation planning has direct and indirect effects with the total effects of 0.19, 0.36, and 0.45, respectively. Self-efficacy is the construct that has the direct effect of 0.53. According to the results of total effect, it is obvious that self-efficacy is the construct that has the largest effect on retirement planning, followed by financial planning motivation, financial literacy, and risk in financial planning, respectively. These results are in line with the results of focus group by 9 financial experts, it is obvious that self-efficacy is the construct that has the largest effect on retirement planning. They agreed that a rising number of senior citizens may not cause any problems to the country's economy in case they are promoted and supported in an appropriate manner. The government should promote self-confidence among people and awareness of retirement planning. It was an issue that lived near them, and within 15 years, Thailand would become "a super aged society". Raising an awareness of retirement planning among all sectors of the society must be done to make individuals realize its importance and get themselves prepared and promote financial knowledge and formulate an education policy on financial behavior. Positive financial behavior influences savings and financial planning at a high level. For the future research should adopt the experiment research approach and in-depth interview method to gain an insight into the applicable method and process of retirement planning and should focus on reproductive policy. It could increase the population of children which will serve as the future workforce. If the government has attractive and supportive measures, such problems could be fixed in the long term.

ACKNOWLEDGEMENTS

Upon the completion of a doctoral dissertation, I am grateful to many individuals for their assistance and contributions that encouraged me to start and persevere in it. Without them, this dissertation would not have been successful.

First, I would like to express my sincere gratitude to my advisor, Associate Professor Dr. Montree Socatiyanurak for his thoughtful comments and recommendations on this dissertation. His support and guidance on the dissertation writing process were not only helpful but inspired me with new passion. I would not have achieved it without him.

In addition to my advisor, my gratitude goes to honorable committees, Associate Professor Dr. Gamolporn Sonsri and Associate Professor Dr. Kasemsarn Chotchakornpant for their guidance on dissertation writing process. Their discussions, ideas, and comments were invaluable.

Then, my special thanks for invaluable assistance during my doctoral study are with all lecturers of National Institute of Development Administration who provided me with knowledge as well as showing me their efforts and patience. Moreover, I am thankful for all DPA 8 classmates (Doctor of Public Administration Program 8), along with the Graduate School of Public Administration for their assistance and supports during my study and dissertation writing process. Without them, this doctoral dissertation would not have been accomplished.

All respondents who devoted their time to fill in the questionnaire and all participants in focus group interviews are highly appreciated. Their information was beneficial to this dissertation.

Last but not least, I would like to acknowledge my debt to my parents, Karoon and Sopit; my sister, Kanitthakarn; and my friends, Nawaporn, Rakphong, Thanawan, Vipa, and Kanyapak for their unconditional supports during my intense academic year. Without their supports, this doctoral dissertation would not have been possible.

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June 2020

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CHAPTER 1
INTRODUCTION

1.1 Background of Research Problems

With advancements in science and technology, the structure of the Thai population has changed and entered an era of an ageing society. Such change has been triggered by advanced medical development along with dietetics leading to increased life expectancy. Economic conditions, lifestyles, and attitudes of new generations toward delayed marriages along with the emergence of more one-child families and infertility has caused a sharp drop in the birth rate. Also, there is a growing trend of single status as well as an increased divorce rate, producing a rising ageing index and decreasing potential support ratio (Khuanuphong, 2012; Kilenthong, Chitmanirot, Chantharawongphaisan, & Pawinwat, 2012; Ngamyan & Phaophu, 2012; Utsantachai, 2009; P. Wongboonsin, 2015)

Information from the Situation of the Thai Elderly 2005 Report and the United Nations (UN) indicates that Thailand has a growing number of populations aged over 60 years. In 1950, the elderly population accounted for 5 percent of the total population. In 1970, the elderly represented 4.9 percent of the total population. This increased by 10.5 percent in 2005. With these figures, it can be said that Thailand has become an ageing society and the proportion of the elderly rose to 15.8 percent in 2015 and 17 percent in 2017, respectively (National Committee on Ageing Society of Thailand, Office of Welfare Promotion, 2006; United Nations, 2015, 2017). The Office of the National Economic and Social Development Board estimate that Thailand will become a complete aged society by 2021. Thai population aged over 60 years is expected to increase by 14.1 million or account for 21 percent of the total population and, by 2033, the elderly population will rise by 18.7 percent or more than 18.7 million. This represents 29 percent of total population. Consequently, Thailand will become an aged society by 2033. In other words, the country will be a complete aged society in the next 15 years (Office of the Civil Service Commission, 2018).

While the proportion of the Thai ageing population has increased continuously, 50 percent of working population did not make any preparedness for

their retirement as well as financial planning after retirement. Most of the working population has an inactive attitudes toward their retirement (Khuanuphong, 2012).

This is in line with the results found in a study entitled "Preparedness for Retirement Planning of Formal Workers Aged Between 40 – 60 Years" conducted by the Research Institute for Policy Evaluation and Design, the University of the Thai Chamber of Commerce (Kilenthong et al., 2012). The results show that the Thai people start plan for retirement at the age of 42 years. The priority for savings is for children's education and inheritance, followed by savings for retirement. The respondents placed the importance of savings for retirement when they are close to the age of 60 years rather than at the younger age. The results also reflect the unreliable preparedness for retirement and errors in financial planning that do not cover the actual expenses after retirement. Such errors are due to the late start for retirement planning. Respondents began plan for retirement when they are 42 years old, which is considered late compared to the results of other countries. Another error is that respondents began retirement planning with over-confidence. Individuals who never made retirement planning are overconfident that their quality of life after retirement will remain unchanged or better than their current quality of living. The third error is the lack of financial knowledge when retirement planning. For example, respondents will invest in high-risk assets when they are getting older. They did not take inflation rates against future expenses into consideration. The fourth error is underestimated expense after retirement. The income replacement ratio is only 34 percent which is very low compared to the 70 percent-income replacement ratio; 70 percent is the preferred minimum value for financial planning so that retired people can maintain their quality of life into their retirement. The fifth error is an underestimated life expectancy. Women tend to underestimate their life expectancy and thus use their savings before their death. This is known as a longevity risk. The sixth error is that people saved too little. Analyzed by financial models which excludes house or real estate, 86 percent of the samples did not have enough money after their retirement. When house and real estate are includes in the financial model, the results find that only 28 percent of the samples have enough money after their retirement. The last error is early retirement: 28 percent of the respondents say that they want an early retirement. However, people who want an early retirement did not

have enough money to meet their expenses after retirement. To fix such problems, early retired people should delay their retirement by 1 year. This will mean, consequently, they will not face the problems of not having enough money after their retirement.

The ageing labor survey finds that one-third of ageing Thai people are poor: 16 percent of them had a monthly income of 833 baht and 17 percent of them had a monthly income of 1,666 baht. These two groups of ageing people cannot stop working. More ageing people still need to work even in retirement. They do not want to become the burdens of their children. The survey also indicates that ageing people do not have enough savings to be spent although their employers offered them retirement savings programs. As a result, they need to rely on their children and assistance from the government (Foundation of Thai Gerontology Research and Development institute, 2007). Furthermore, economic conditions of ageing people are far from stable; 75 – 80 percent of retired people are worried about their decreasing savings, burdens of their children, poverty, the need to spend money, and fragile health. They are afraid of not having people to take care of them. Compared to the previous years, 73 percent of retired respondent indicated that their income decreased, and 45 percent stated that they had to be financially dependent upon their children (Phromphak, 2013).

A study looking at measurements of the financial situations of Thai people found from national savings accounts in 2011 developed by the Office of the National Economic and Social Development Board (NESDB) that the Thai population faced problems of income deficit in all age groups of 20,575 baht per person. Overall, the country has an average deficit of 1,060.7 million baht in 2009. The measurement of financial situations among Thai people is a project that will be used to determine the direction of reducing inequality that fits Thai society under the changing structure of the Thai population (Wongboonsin et al., 2014). The study forecasts that the average income deficit of Thai population will increase to 1,428.1 million baht by 2024. Throughout all ages of population, the income deficit will be 1.3 trillion baht, and by 2040 the deficit will rise to 1.8 trillion baht. Although the working population has an income surplus, they cannot compensate or balance the deficit throughout their life. It can be said that all ages of Thai people, will have an average income deficit of about

27,000 baht, which reflects the problems of financial stability. Such problems are caused by a high level of household debts while savings rates is low.

This corresponds to studies on households not ready to make a financial decision on retirement. Policy makers expect people and households to have a quality of life and safety after their retirement. Most employees in America who are about to retire also had limited saving (Atkinson, McKay, Kempson, & Collard, 2006; Lusardi, 2003, 2004; Lusardi & Mitchell, 2007; OECD, 2005; Rooij, Antonides, & De Groot, 2008).

Lusardi (2003) found that retirement is highly associated with wealth among American family members who are close to their retirement. In 2017, Lusardi and Mitchell confirms that the idea of retirement will lead to a wealthier life after income and education are controlled. Other directions of relationship are that rich households will be probably more reasonable when they consider money to be spent after retirement rather than only about retirement.

Lusardi and Mitchell (2008) from RAND American Life Panel (ALP) also find that most households do not have a foundation of financial knowledge. The results from the survey also show that a level of education is highly correlated with financial knowledge. Female respondents and respondents with a low level of education had financial knowledge at the lowest level. More importantly, family with a good financial knowledge is more likely plan for retirement even if economic characteristics, large-sized society, education, and income are controlled.

When talking about the basic factors of living, people tended to think of 4 basic needs. These 4 basic needs include food, clothes, residence, and medicine. In the modern era, to get these 4 basic needs, people require money. It is a medium of exchange and they are necessary for living, as money allows people to get these basic needs. Therefore, financial knowledge and personal financial management plays an important role in life after retirement since they serve as for of financial security for retired people to live to a good quality of life. Retirement planning is concerned with people aged over 60 years; consequently, young people ignore to make an effective retirement plan. The thought is far from them, and there is a large number of people who cannot enter retirement. Moreover, a lot of people do not get themselves prepared for their retirement thinking that it is a tradition that their children and

grandsons should take care of them. Whatever the reason is, it is inevitable that when retirement comes, individuals still need money. After retirement, people also have daily expenses, including the costs of medical treatment while the ability to earn an income is reduced. The need for money and the ability to earn it go in an opposite direction. Consequently, to have a happy life after retirement depend mainly on individuals' ability to determine it.

Such situations are consistent with the surveys. The results from the surveys carried out by the Stock Exchange of Thailand (SET) reveal that most Thai people fail to achieve their financial planning goals, as they do not get themselves prepared for incomes to be spent after their retirement. One of the factors that Thai people fail on is a lack of financial knowledge, including the information about financial products and financial management. These problems occur not only in daily-wage workers but also in employees who work for public and private organizations. They lack both financial knowledge and financial discipline. Additionally, the Bank of Thailand report the results of its 2013 financial literacy survey which demonstrate that Thai people have an average score of financial literacy of 58.5 percent out of the total of 22 scores. Thailand's average score is lower than these of 14 countries participating in the survey in the OECD. The average score of these 14 countries is 62.3 percent. The score of correct answers that the Thai people received sit almost the bottom among the 14 countries. Over 30 percent of Thai people have a low level of financial knowledge. At a regional and provincial level, the northeastern people have the lowest level of financial literacy similar to the 2016 survey indicating that the northeastern population had the lowest level of financial literacy compared to these of other regions of Thailand.

In terms of economic conditions and incomes, population and areas in the northeastern region represent one-third of the total areas and population of the country. However, their income accounts for one- tenth of the country or 11.2 percent. Most northeastern people are farmers and it is the poorest region of Thailand. The average income of northeastern people is lower than people living in Bangkok. On average, households in Bangkok have an income of 42,379.83 baht per month. Furthermore, the average income of northeastern people is the lowest of the country. Thailand's households have an average income of 18,849.7 baht per month. The

National Statistical Office of Thailand under the Ministry of Digital Economy and Society conduct at household socio-economic survey every two years. The results from the 2017 household socio-economic sample survey shows that the northeastern population have an average household income of 19,802.36 baht per month, behind the north population with the lowest of average income of the country, the population in Bangkok have an average household income of 45,707.31 baht per month. The average household income of the country is 23,839.77 baht per month. In addition to the lowest income per household of the country, northeastern people also have high average household debt at 178,439.06 baht per month, behind Bangkok. The population in Bangkok have the highest level of average debt per household at 202,699.85 baht/month. With the stated problems, many households in Thailand are confronting increased debts; at the same time, their savings for emergencies is limited. In addition, Thai people's saving rates are relatively low, which affects the quality of life of population after their retirement. Inevitably, the government will have to bear the costs of treating the poor elderly population which became the long-term burdens of the government (National Statistical Office of Thailand, 2017b).

Therefore, this research anticipates to propose policy recommendations to maintain the quality of life of aging population, including the stability of an ageing society and financial security and freedom. It will help the Thai population prepare themselves for retirement, reducing the inequality of life after retirement. It is recommended that individuals engage in financial planning as early as possible since it may prohibit them from get into trouble when they retire, leading to increased wellbeing into retirement.

1.2 Significance of the Research

This research intends to explore the causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement planning among people in the northeastern region of Thailand in the context of an ageing society. High financial literacy is a foundation that promotes economic stability and expansion in a continually sustainable manner. In addition, it will help to overcome possible challenges steadily. These challenges include household financial fragility, ageing society, and financial inequality. Recently, Thai people have begun to

load up on debt at a younger age, and their repayments are not made at the due date, which demonstrates a low level of financial literacy. With a lack of financial literacy, the country's economy cannot develop in a sustainable mannery. Thus, this research realizes the importance of retirement planning which will lead to the maintenance of living conditions and the increased stability of an ageing society, and financial freedom among senior citizens in an efficient manner. Retirement planning helps reduce the inequality of quality of life among ageing population and lightens the burdens of the government to set aside budgets for the poor, elderly people.

1.3 Research Questions

This section addresses the research questions to explore the causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society. The research questions are areas follows:

1) What kind of characteristics do financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning have among people living in the northeastern region of Thailand in the context of an ageing society? What are their components?

2) Does the proposed model of the causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society fit the empirical data?

3) What should be the policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning be among people living in the northeastern region of Thailand in the context of an ageing society?

1.4 Research Objectives

The study entitled "The Causal Relationship in Financial Literacy, Self-Efficacy, Financial Planning Motivation, Risk in financial planning and retirement financial planning among People in the Northeastern Region of Thailand in the Context of an Ageing Society" had the following research objectives.

1) To examine the causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society through empirical data performed by confirmatory factor analysis.

2) To analyze causal relationship of financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society by structural equation modelling, and

3) To present policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning targeted at people living in the northeastern region of Thailand in the context of an ageing society

1.5 Research Scope

In this section, research scope is explained and consists of three scopes: target population, scope of the topic, and scope of time.

Target population

Phase 1: The study of the causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society divided the target population into two groups.

1.1.1 Preliminary study: documents, principles, concepts, theories, and previous studies related to financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement financial planning are reviewed to derive the components of financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning.

1.1.2 Concepts, theories, and previous studies in relation to financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement financial planning are applied to define the question items that will be appeared in a questionnaire about financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement financial planning. The

questionnaire is used to collect the required data afterwards. The population in this research is targeted as the following.

1.1.2.1 Population

According to the 2016 survey of financial literacy conducted by the Bank of Thailand (BOT), the Thai population with a low level of financial literacy is Generation Z. The survey reveals that Generation Z lacks a foundation of financial knowledge. The group does not realize the importance of setting the long-term financial goal. Instead, once they earn an income, Generation Z will spend it. They do not think about savings and when they do, it will be inappropriate. Furthermore, they do not compare prices before making purchases as well showing a lack of self-restraint. Based on the results from the 2016 survey, the population of this research will be generation Y and over (people who are born before 1997 or aged over 23 years). Therefore, the population will be working population aged between 25 and 59 years living in certain provinces in the northeastern region of Thailand. This research does not cover all provinces in the northeast of Thailand or the whole country. With reference to the 2016 survey of financial literacy by the Bank of Thailand, the results show that people living in the northeastern region have the lowest financial literacy on average. The provinces in the northeastern region with the lowest financial literacy is Buriram, Loei, Nakhon Phanom, Udon Thani, and Surin with the total of 3,933,522 population (National Statistical Office of Thailand, 2017a).

1.1.2.2 Samples

The samples employed in this research are workers aged between 25 and 59 years who live in the northeastern region of Thailand. These samples live in some provinces in the northeast of Thailand. This research does not cover all provinces of the northeast. The samples are drawn from the results of survey of financial literacy carried out by the Bank of Thailand. According to the 2016 survey, the provinces with the lowest financial literacy includes Buriram, Loei, Nakhon Phanom, Udon Thani, and Surin. An appropriate size of samples is taken into consideration along with the structural equation modelling (SEM). The number of samples suitable for this research is based on (Hair, Anderson, Tatham, & Black, 1995). Hair et al. (1995) who suggests that an appropriate number should range between 200 and 300. Moreover, Boomsma (1983) added that the suitable sample

size is 400. Comrey & Lee (1992) and Hair et al. (1995) also suggest that a proper samples sizes should be 10 – 20 times greater than the observed variables of a study. In this research, there are 46 observed variables; therefore, an appropriate sample size is 460 which is derived from multiplying 46 observed variables by 10. In total, 460 samples are deemed to be the minimum size that could be appropriately analyzed by structural equation modelling. As a result, the minimum sample size in this research is 460. Probability sampling is also adopted and multi-stage random sampling applied. First, proportional sampling is utilized by selecting the working population aged 25 – 59 years. Subsequently, accidental sampling is applied to obtain 460 samples.

Phase 2: the policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society are made.

The focus group was selected and carried out with 9 experts (Anderson, 1990; Denscombe, 2007; Morgan, 1997; Patton, 2002; Ritchie & Lewis, 2003; Stewart & Shamdasani, 1990) to review the draft of the policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement financial planning among people in the northeast of Thailand in the context of an ageing society. The criteria used for selection of the experts were obtained from Gilmore and Cambell (1996) suggesting that the number of members in the focus group should be 6 – 12 persons or 6 – 9 persons, which corresponded to the suggestions by Grudens-Schuck, Allen, and Larson (2004). Morgan & Scannell (1998) stated that the size of focus group should be 6 – 10 persons.

2. Scope of the topic:

2.1 Financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning are the constructs that will be analyzed by first order confirmatory and the confirmatory factor analysis will be the second order confirmatory to review the construct validity of the model by the LISREL statistical program.

2.2 The model fit of causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement

financial planning among people in the northeastern region of Thailand in the context of an ageing society is analyzed by the structural equation modelling (SEM) to test the fit between theoretical model and empirical model. Also, the relationships among causal variables including direct effects and indirect effects are analyzed.

2.3 Policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society are made.

3. Scope of time

3.1 Phase 1: The causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society is studied and the model fit is analyzed in July 2019 until October 2019 with the total of 4 months.

3.2 Phase 2: Policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society was completed in December 2019 with the total of 2 months.

1.6 Definition of Terms

Ageing society is explained by the United Nations as countries with population aged over 60 years old which represented more than 10 percent or over 65 years which accounted for more than 7 percent of their total population. In such cases, these countries will be considered ageing society. They will become aged society when their population aged over 60 years represented more than 20 percent or over 65 years accounted for more than 14 percent of their total population, the countries will be considered super aged society when the population aged over 60 years and the group represented more than 28 percent. When there is population aged over 65 years, the group accounted for more than 20 percent of all people (Petroff, 2014; K. Wongboonsin & Wongboonsin, 2015).

Financial literacy is defined as individuals' awareness, understanding, expertise, attitude, and behavior that allowed them to make an appropriate financial

decision, leading to healthy financial habits. In this research, financial literacy is referenced to the principles explained by the Organization for Economic Cooperation and Development (OECD). It includes three components as follows:

1. Financial knowledge is an understanding toward financial concepts. Such understanding could be applied to making an effective decision.

2. Financial behavior is concerned with behavior related to financial management, financial decision making, borrowing, savings, and income and expenses planning.

3. Financial attitudes is described as idea, savings, and usage of finances.

Self-efficacy is a success factor of individuals when they has a high level of their perceived-self efficacy. Such individuals perceived that more complicated jobs are the challenges rather than the risks or things that they should avoid. They will be determined to achieve their job and have a high desire of achievement. Moreover, individuals will be determined to work longer than these who has a low level of perceived-self efficacy. These with low level of perceived-self efficacy tended to be hesitant or give up when they faced the problems or undesired situations (Bandura, 1997; Gresham, Evans, & Elliott, 1988).

Retirement planning is a preparedness for financial freedom of individuals to have a happy life after retirement. In other words, it is the living conditions similar to that during employment (Gordon, 2001). Retirement planning must be prepared in the long run. People who wanted a happy life after their retirement need to make a carefully financial planning (Atchley, 1994). Leedy & Wynbrandt (1987) suggested that individuals should get themselves prepared for their retirement planning as early as the age of 30 years.

Risk in financial planning is defined as the possible risks that will affect individuals' financial stability. Therefore, when people planned in response to any potential risks, their life after retirement will be prosperous and stable, including financial freedom (Atchley, 1994; Leedy & Wynbrandt, 1987).

Financial planning motivation is a kind of motivation to perform a behavior in question. It also depended on an individual's desire to achieve a goal, explained by Locke (1991). The goal is set by the individual to be accomplished by a defined time.

Financial planning motivation helps promote the behavior in question with the focus on the desired goal and allowed individuals to find a way to achieve their goals.

1.8 Chapter Summary

This chapter reflects the importance of Thailand's ageing society that need to be studied, since its population is not aware of their financial preparedness. Many families in the country face increased debt while their savings for emergencies are limited. More importantly, individuals do not have enough money to spend after their retirement. In general, people possess inertia and procrastination, which result in an avoidance of complicated planning or decision making. This research expects that the working-age population realize the importance of financial planning for retirement, and should begin to do it immediately. Otherwise, they will confront the situation of not having enough money for retirement. The following chapter is literature review from previous studies. It includes financial literacy, self-efficacy, financial planning motivation, risk in financial planning for retirement, and retirement financial planning based on the conceptual framework.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

Relevant concepts, theories and studies in this study are presented in 7 ordered parts.

Part 1 Situation of Elderly Population

Part 2 Concept of Retirement Planning

Part 3 Concept of Financial Literacy

Part 4 Concept of Self- Efficacy

Part 5 Concept of Motivation

Part 6 Concept of Risk

Part 7 Chapter Summary

2.2 Situation of Elderly Population

Definition of elderly population

In the Western context, an ‘elderly population’ in most developed countries is defined as people age 65 years and over. This is different from Thailand and Asian countries where ‘elderly’ means people aged 60 years and over. In Thailand, the Older Persons Act, B.E. 2546, prescribes ‘Older persons’ as people who have attained the age of at least 60 years and who hold Thai nationality (Ministry of Social Development and Human Security, 2004). According to Thailand’s 1999 Royal Institute Dictionary, old persons are people in old age or in their aging years. In the same dictionary, old means old age and in state of decay. Additionally, old persons are called senior citizens. Each country defines an ‘aging population’ differently varying by age, by birth, society, culture and physical status. Under the UK’s Friendly Societies Act, old age means any age after 50. In most countries, any age after 60 or 65 years is the beginning of aging and the retirement age (Roebuck, 1979).

Classification of age in different periods and countries illustrates social class differences and functional abilities in relation to the working population, not political and economic situations. The definition of aging is often related to the retirement age

and females are affected more than males. The definition relies on changes in living and physical functioning. Therefore, the retirement age of women is 45-55 years and men is 55-75 years (Thane, 1978). Nonetheless, the United Nations agrees with 60 years and over as referring to an "aging population" (World Health Organization, 2000).

Global elderly population

Nearly all countries in the present are confronting increasing numbers of an aging population. In 1950, the portion of the population aged 60 and up accounted for 205 million persons globally. Three countries have an aging population of over 10 million; China with 42 million, and India and USA, with 20 million per country. The global number of aging populations will reach 606 million in the next 50 years. According to the United Nations (2002), there are 12 countries with more than 10 million an aging population in 2000. Of these countries, five had over 20 million people, namely China (129 million), India (77 million), USA (46 million), Japan (30 million) and Russia (27 million). In the World Population Ageing 2015 (United Nations, 2015), the global number of an aging population in 2015 was 901 million or 12 percent of global population projected to climb to 962 million in 2017 (United Nations, 2017). As projected, the global an aging population would increase by 3.26 percent annually. The greatest percentage of this population will remain in Europe, with 24 percent. In 2030 and 2050, the global an aging population will be 1.4 and 2.1 billion respectively (Table 2.1).

Table 2. 1 Proportion of elderly population in every region globally in 2000-2050

	Proportion of population aged 60 years and over (%)				Change (%)	
	2000	2015	2030	2050	2000-2015	2015-2030
World	9.9	12.3	16.5	21.5	2.3	4.2
Africa	5.2	5.4	6.3	8.9	0.2	0.8
Asia	8.6	11.6	17.2	24.6	3.0	5.6
Europe	20.3	23.9	29.6	34.2	3.6	5.7
Latin America and the Caribbean	8.1	11.2	16.8	25.5	3.1	5.6
Oceania	13.4	16.5	20.2	23.3	3.1	3.7
Northern America	16.2	20.8	26.4	28.3	4.6	5.6

Source: United Nations, 2015b.

The rising numbers of elderly populations goes together with the longer life expectancy. These two factors influence the population's structural change to turn Thailand into an aging society. In 2015, the global life expectancy was 71.4 years old (73.8 years for female and 69.1 years for male). The life expectancy increased by five years between 2000-2015. A fast increase happened since 1960, except in 1990 in Africa where the life expectancy dropped due to the AIDS epidemic and in Eastern Europe after the collapse of the Soviet Union. In Africa from 2000, life expectancy rose as a result of the antiretroviral treatment for HIV/AIDS patients and quality of life improvements in child survival (World Health Organization, 2016). The CIA World Factbook, 2015 reported that, Monaco is the county with the longest life expectancy (89.52 years) and Chad, in Central Africa, is the country with the shortest life expectancy. Thailand's life expectancy is 74.43 years. The countries ranked second to fifth longest life expectancy are Japan (8 9 . 5 2 years), Singapore (84.68 years), the Macao Special Administrative Region (84.51 years) and San Marino (83.24 years). The interesting point from the CIA's findings is that, most countries with the long-life expectancy, longer than the global life expectancy, are in Asia.

There is a calculation of life expectancy at 60, implying people aged 60 are expect to continue living at the stable death rate. Practically, the death rate is unpredictable and varies by country. According to Global AgeWatch Index 2015, in Japan, life expectancy at 60 years is calculated at 26 years. In Sierra Leone in Western Africa, the life expectancy at 60 years is calculated at 13 years. In Thailand, it is 21 years when life expectancy remains at 60 years. Thai people will live until age 81, longer than the country's life expectancy of 74.43 years and the global life expectancy of 71.4 years.

In USA, the calculation is made at 65 years. In 1900-1902, the life expectancy rose by 11.9 years and then by 19.1 years in 2010. American population aged 80 years could live for 5.3-9.1 years longer in the same period (Arias, 2014). Based on the US Census in 1980 – 2010, population aged 90 grew double compared with the population aged 65-89 in the same period (He & Muenchrath, 2011). Population aged 100 years and beyond increased to 65.8 percent (Meyer, 2012). In 2012, the American population's life expectancy at 65 years is calculated at 19.3 years, meaning the population would live long until 84.3 (Exner, 2014).

In the past two centuries, global population has the longer life expectancy that proved the tremendous success of humankind. If tracing back to the ancient time, the human's life expectancy ended at 25 years (National Research Council (US) Committee on Population, 1997). Starting from early 20th century, human's life expectancy doubled to 50 years, particularly in industrialized countries. Unlike in developing and underdeveloped countries in Africa where the life expectancy stayed below 40. Figure 2.1-2.2 is a comparison of life expectancy in countries. The rapid increases of life expectancy took place in all parts of the world. In the 19th century, industrialized countries such as European and North American countries experienced the longer life expectancy. Other countries in other parts of the world still has the low life expectancy. These phenomena reiterated the unequal living standard and health care system between developed and developing countries. After many decades, inequalities were lessened and the global life expectancy increased many folds, without the life expectancy lower than in the past in any country (Roser, 2016).

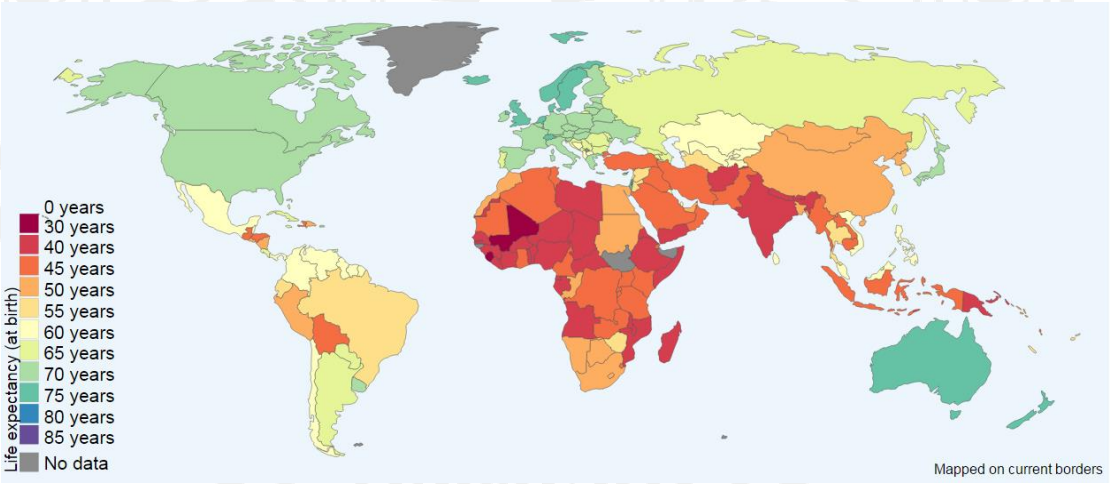


Figure 2. 1 Life expectancy in countries in 1955

Source: Roser, 2016.

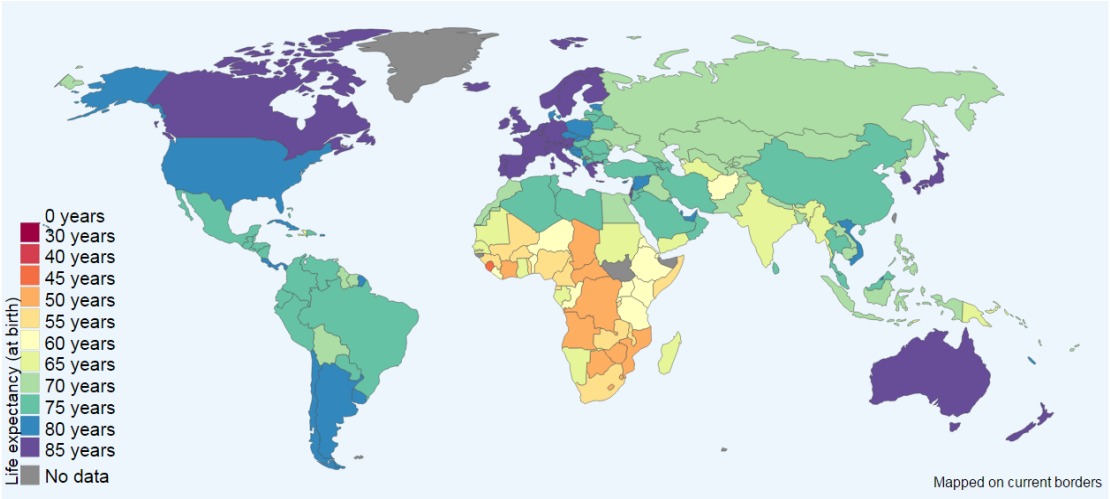


Figure 2. 2 Life expectancy in countries in 2013

Source: Roser, 2016.

In the post-World War II era, Year 1946-1964 is the baby boom era, the number of children and youth grew enormously (Wiens, A.E., 1999). Consequently, countries ran the birth control campaign in the same time as economic hardship that prompted people to produce less children or prolong pregnancy. In addition to this, advances in medical technology extended people's lifespan, reduced mortality rates and increased the number of aging populations in nearly all countries. All these mentioned and the lower birth rate were factors to population's structural change and, thus, being an aging society. Partially, public policies in certain period such as the birth control policy during the economic crisis also contributed towards an aging society. Having more children might imply the more burdens and obstacles to the country development. China is a good example that implemented the family planning policy that later resulted in the dramatic decrease in birth rate. New births fell sharply but moving the country to become an aging society as well.

Globally, social and cultural changes somewhat caused less marriage among women, more divorces and less births. People in teen years were low in number while aging people grew. Survey of Health, Ageing, and Retirement in Europe says that 10 percent of people aged 50 years and over in Europe have no child (Börsch-Supan, Brandt, Hank, & Schroder, 2011), or 5-15 percent in each country (Hank & Wagner, 2013).

European demographers were aware of the reduction of European population in some countries with lowest-low fertility such as Belarus, Bulgaria, Romania, Serbia and Ukraine that experienced the unceasingly lower fertility in the past two decades (Kohler, Billari, & Ortega, 2002). Their population reduced by one million (Kinsella & He, 2009). Between 2008 and 2015, four countries, namely South Africa, Italy, Spain and Czech (He, Goodkind, & Kowa, 2016) that previously has been expect to experience the higher fertility faced the lower fertility instead. At present, the percentages of fertility in these countries are 2.31, 1.43, 1.49 and 1.45 percent respectively, lower than the worldwide fertility of 2.42 percent. Niger, located south of the Sahara in Western Africa, has the highest fertility rate, 6.62 percent. Singapore has the lowest fertility rate, 0.82 percent and Thailand has the fertility rate of 1.51 percent (CIA World Factbook, 2016).

Fertility rate means the number of live births in women over a specific length of time and area. Figure 2.3 and 2.4 show the total fertility rates in countries in 1955 and 2015. According to the United Nations, in 2005-2010, the average birth rate globally is 2.5 children and 80 percent of the world population lived in countries where women has less than three children. The comparison of total fertility rates in Year 1955 and Year 2015 makes clear that the countries with existing low fertility rates still experience the slightly lower fertility rates. On the contrary, countries with high fertility rates in the past experience a sharp fertility decline (Roser, 2016a).

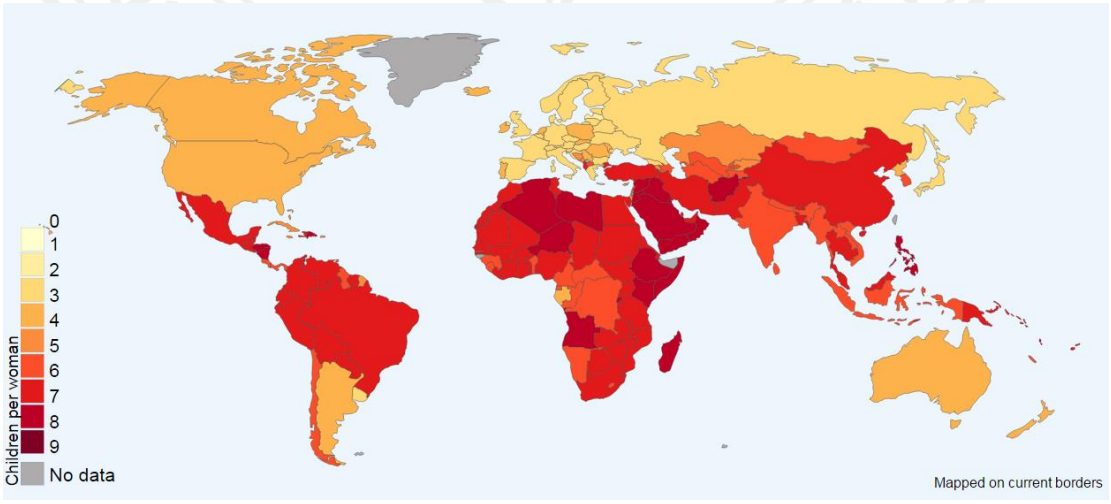


Figure 2. 3 Total fertility rate in countries in 1955

Source: Roser, 2016a.

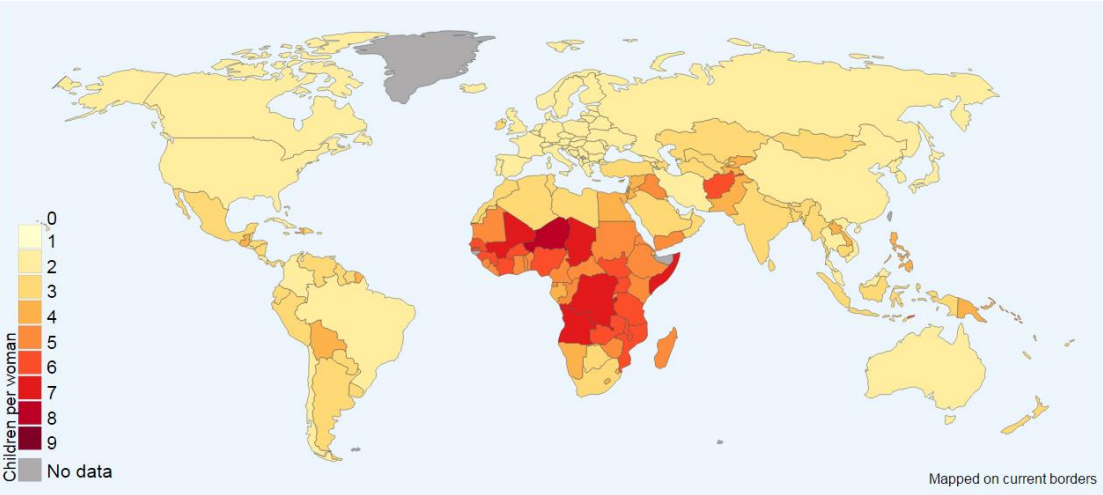


Figure 2. 4 Total fertility rate in countries in 2015
Source: Roser, 2016a.

All previously mentioned, the global population structure has shifted, from child –dominant population to aging populations. Countries in almost all parts of the world will experience the substantially growing number of populations from aged 60 between 2017 and 2050. Countries in Europe passed through many decades to become aging societies. Unlike in Asia and Latin America, countries has the much faster changes while Sub-Saharan countries in Africa has the slow changes (Bongaarts, 2008). The United Nations' World Population Aging, 2017, projected the rapid growth of an aging population in 2050. African countries will have the growth higher than 220 percent, followed by Latin American and Caribbean countries that will have more than 160 percent. Asian countries will have over 130 percent. Completely different from European countries, their an aging population will grow by 35 percent as these countries has already experienced the very high number of an aging population (United Nations, 2017) as seen in Table 2.2.

Table 2. 2 Distribution of population aged 60 years and over in regions in 2015 and 2017-2050

	Population aged 60 years and over (million persons)			Change (%)	Distribution of elderly population (%)	
	2015	2017	2050	2017-2050	2017	2050
World	900.9	962.3	2080.5	116.2	100.0	100.0
Africa	64.4	68.7	225.8	228.5	7.1	10.9
Asia	508.0	549.2	1273.2	131.8	57.1	61.2
Europe	176.5	183.0	247.2	35.1	19.0	11.9
Northern America	74.6	78.4	122.8	56.7	8.1	5.9
Latin America-Caribbean	70.9	76.0	198.2	160.7	7.9	9.5
Oceania	6.5	6.9	13.3	92.6	0.7	0.6

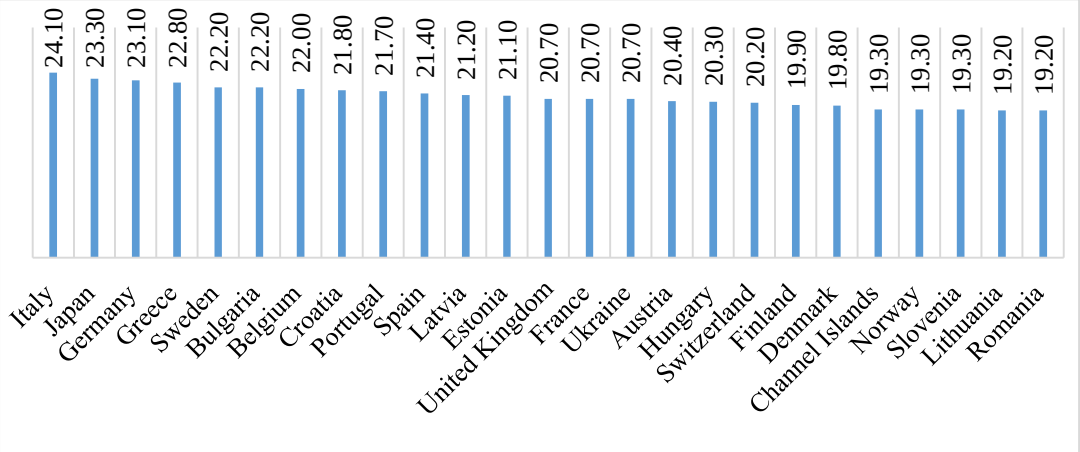
Source: United Nations, 2015b, 2017.

The United Nations defines “aging society” as one in which more than 10 percent of the population is 60 years or older or more than 7 percent of the population is 65 years or older. An aged society means a society in which more than 20 percent of population is 60 years or older or more than 14 percent of population is 65 years or older. A super-aged society means a society in which more than 28 percent of population is 60 years or older or more than 20 percent of population aged from 65 (Petroff, 2014; K. Wongboonsin & Wongboonsin, 2015).

Graph 2.1 presents that, in 2000, Italy ranked top of the world with population aged from 60 years, 24.1 percent of population. Italy already become an aged society. 17 countries are aged societies, namely Japan, Germany, Greece, Sweden, Bulgaria, Belgium, Croatia, Portuguese, Spain, Latvia, Estonia, UK, France, Ukraine, Austria, Hungary and Switzerland. Japan is the only non-European country. United Arab Emirates has the least aging population, just 1.7 percent of population. In the same year, 53 countries also become aging societies including 23 European countries and others in different continents. In Africa, only Seychelles is counted in, 10.4 percent of the population. In Asia, aging societies are Georgia, Armenia, Hong Kong, Israel, Taiwan, South Korea, Kazakhstan, Singapore and Lebanon. The percentages of an aging population were 18.4, 15.1, 14.8, 13.3, 11.9, 11.2, 11.2, 10.7 and 10.4 percent respectively. Singapore is the only ASEAN country among them. Thailand in the

same year has an aging population of 9.9 percent of population, meaning Thailand did not become an aging society at that time. However, it will become sooner. Finally, Thailand become an aging society in 2005 (K. Wongboonsin & Wongboonsin, 2015).

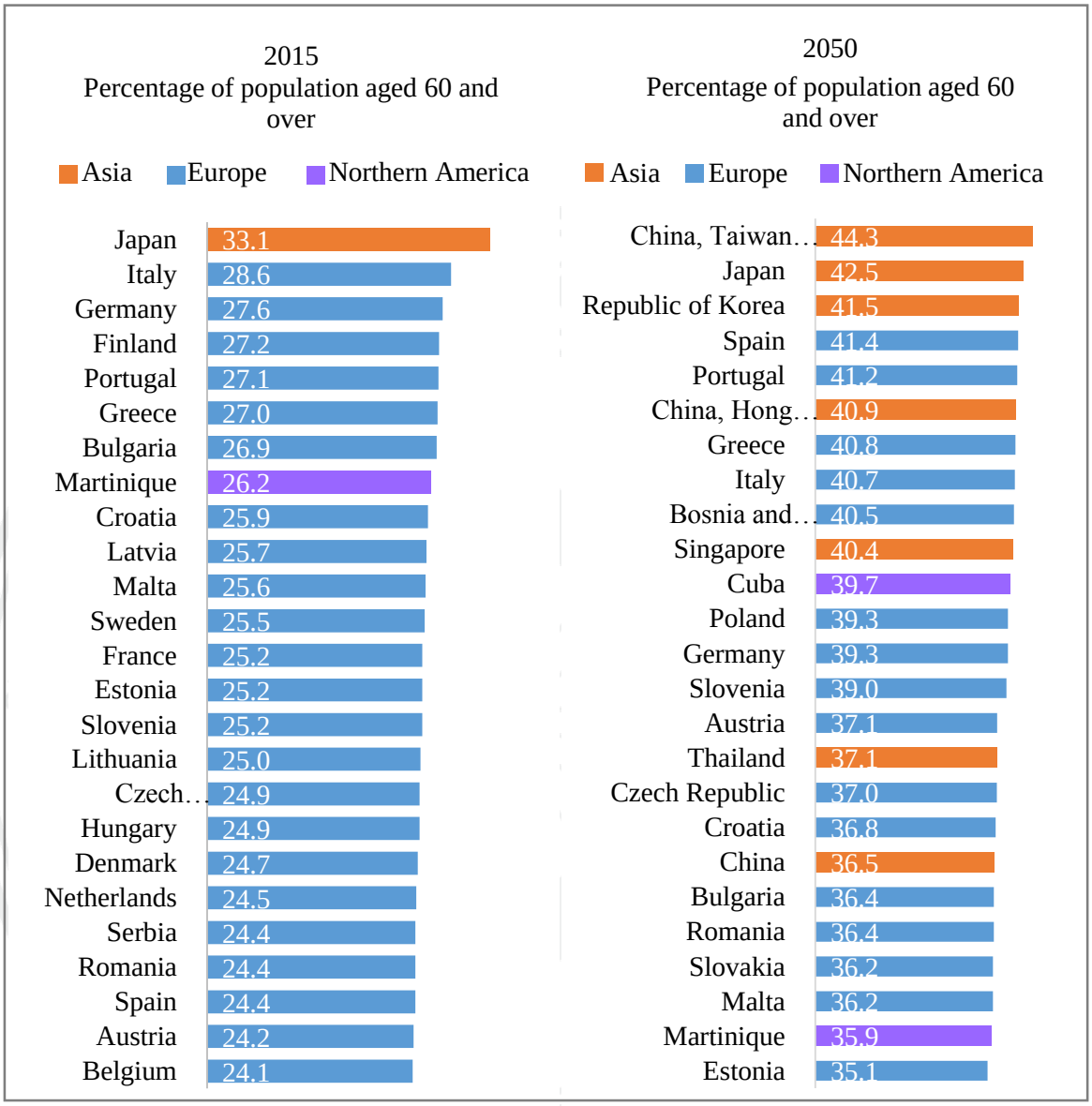
Graph 2. 1 Top 25 countries with people aged 60 years and over in 2000



Source: United Nations, 2015b.

Japan in 2015 has population aged 60 years and older, 33.1 percent of population, ranked first of the countries with the high number of this population group. United Arab Emirates and Qatar has the least number of aging population, merely 2.3 percent of total population. Graph 2.2 presents the top 25 countries with high proportion of aging populations. 22 countries are in Europe. Germany and Italy has always stayed at the top for many years (Kinsella & He, 2009). In Asia, Hong Kong ranked first, with an aging population sharing 21.7 percent of total population and transforming Hong Kong into an aged society. Following Hong Kong were Georgia (19.3 percent), Taiwan (18.6 percent), South Korea (18.5 percent), Singapore (17.9 percent), Israel and Thailand (15.8 percent), China (15.2 percent), Macao (14.8 percent), Sri Lanka (13.9 percent), North Korea (12.5 percent), Lebanon (11.5 percent), Turkey (11.2 percent), Kazakhstan (10.7 percent), Vietnam (10.3 percent) and Azerbaijan (10.0 percent). These countries have already been turned into aging societies (United Nations, 2015).

Graph 2. 2 Top 25 countries with people aged 60 years and over in 2015 and 2050



Source: United Nations, 2015b.

In 2017, the high number of population aged 60 years and over or 33.4 percent still placed Japan in the first, followed by Italy, Germany, Portuguese, Finland, Bulgaria, Croatia, Greece, Slovenia and Latvia or 29.4, 28.0, 27.9, 27.8, 27.7, 26.8, 26.5, 26.3 and 26.2 percent respectively. In this year, Japan, Germany and Italy finally become super-aged societies with over 28 percent representing an aging population (United Nations, 2017). In total, 48 countries, mostly in Europe, with over 20 percent, become aged societies. In Asia, aged societies includes Hong Kong, Taiwan and

South Korea or 23.5, 20.2 and 20.1 percent respectively. None of ASEAN countries become aged societies, but aging societies including Singapore, Thailand and Vietnam or 19.5, 16.9 and 11.1 percent respectively.

The United Nations provided a forecast in 2015, that Taiwan or the Republic of China will replace Japan in 2050 with 44.3 percent representing an aging population. Japan will rank the second with 42.5 percent representing an aging population. Graph 2.2 illustrates Asia has at considerably growing aging population. Korea, Hong Kong, Singapore, Thailand and China (41.5, 40.9, 40.4, 37.1 and 36.5 percent respectively) are climbing up to be among top 25 countries with the high number of populations aged 60 and beyond. In Europe, Germany and Italy are reducing their aging populations. Finland, formerly ranked fourth (27.2 percent) in 2015, will rank 42nd (32.4 percent). The greatest shares of an aging population in Europe will come from Spain and Portuguese or 41.4 and 41.2 percent respectively (United Nations, 2015). The United Nations gave a forecast again in 2017 for the percentage of an aging population in 2050. Still, Japan will come first with an aging population accounted for 42.4 percent, then Spain, Portuguese, Greece, South Korea, Taiwan, Hong Kong, Italy, Singapore and Poland or 41.9, 41.7, 41.6, 41.6, 41.3, 40.6, 40.3, 40.1 and 39.5 percent respectively (United Nations, 2017).

By 2050 as forecasted by the World Health Organization, the global elderly population will grow more than three folds and the number will almost reach 2,000 million worldwide. 33 countries will have elderly population of over 10 million. Five countries will experience over 50 million, namely China (437 million), India (324 million), USA (107 million), Indonesia (70 million) and Brazil (58 million) (United Nations, 2002). These forecasted numbers are similar to these from the World Population Ageing Report 2017. Globally, there will be an aging population 962,263,000 in 2017. In total, 19 countries will have an aging population of over 10 million. Three countries will have this population of over 50 million, namely China (228 million), India (125 million) and USA (69 million). In 2050, the world will have an aging population 2,080,459,000 including 42 countries with more than 10 million and five countries with more than 50 million, namely China (478 million), India (316 million), USA (108 million), Brazil (68 million) and Indonesia (61 million).

Countries evolve into aging societies at miscellaneous speeds. Developed countries like France, Sweden, Australia and USA took 115, 85, 73 and 69 years respectively (He et al., 2016; Kinsella & Gist, 1995; Phromphak, 2013). Australia evolved into an aging society in 1950 (Theisiri, 2008). England and Wales took 107 years for the percentage of an aging population to increase from 7 percent to 14 percent (Jitapunkul & Bunnag, 1998). These nations were well prepared to shift their socio-economic structure to be aging societies accordingly. On the other hand, Japan, a developed country in Asia, took only 25 years between 1970-1995 to become an aging society. An aging population accounted for 14.5 percent in 1995 (He et al., 2016). Singapore has 17 years to become an aging society (Theisiri, 2008). As for other developing countries, the speed of evolving into an aging society is much faster. China, Chile, Brazil, Thailand and Colombia took 23, 26, 21, 21 and 22 years respectively (He et al., 2016; Phromphak, 2013; Theisiri, 2008; United Nations, 2015). The shorter period directly related to improper preparations in these countries. In the situation when the working age population hugely decreases in number and turning into aging population, and the labor market gets shrinking, organizations need replacement workers. For aging people, they find it hard to change their saving behaviors. Health care may soar that people no longer invest their money in stocks and properties. The government may manage the public debt poorly. All countries inevitably encounter these problems regarding aging population.

Thailand's elderly situation

Table 2.3 details the number of the total population and elderly population in Thailand in 1950-2100 based on the Situation of the Thai Elderly Report in 2005 and the United Nations' findings. The elderly population aged 60 and older continued to rise from 5.0 percent of population in 1950, 4.9 percent in 1970 and 10.5 percent in 2005, giving Thailand the status of aging society this year. United Nations reported in 2015 that the Thai elderly population accounts for 15.8 percent of population and will continue to grow.

Table 2. 3 Total population and elderly population in Thailand in 1950-2100

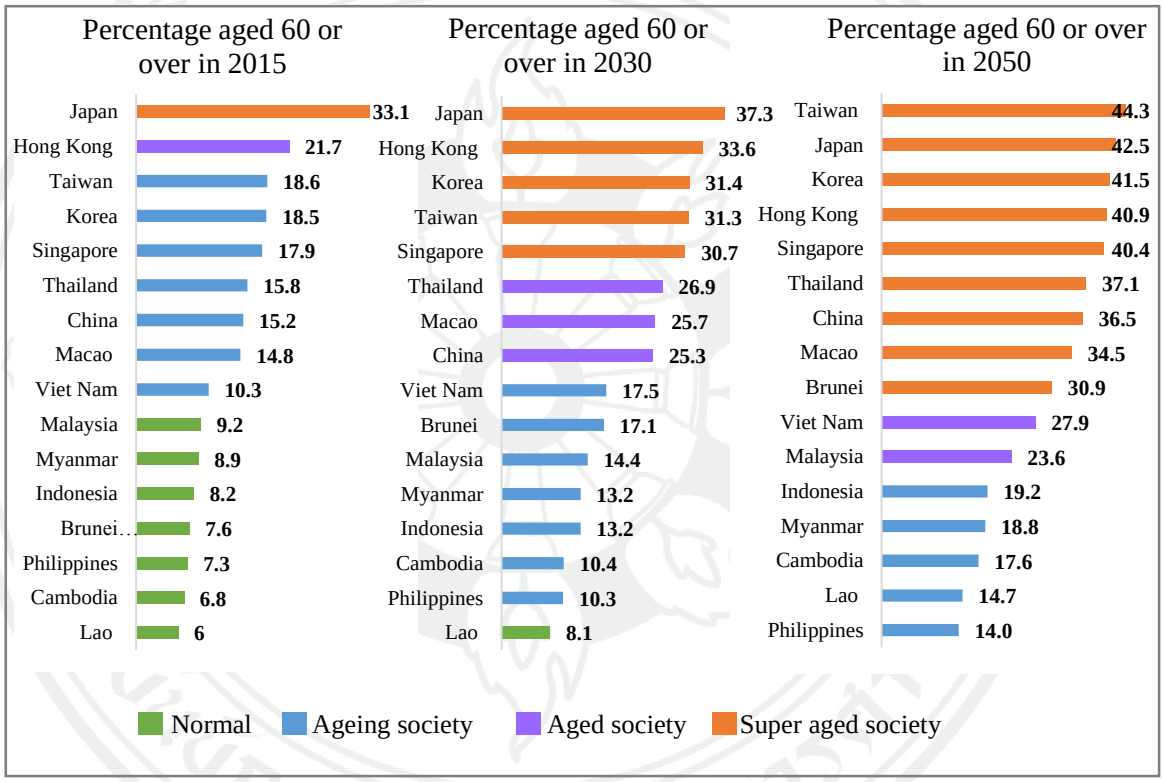
Year	Total population (Thousand persons)	population aged 60 years and over		population aged 80 years and over	
		Number (Thousand persons)	Percent	Number (Thousand persons)	Percent
1950	19,626	991	5.0	81	0.4
1955	22,759	1,087	4.8	81	0.4
1960	26,603	1,272	4.8	81	0.3
1965	31,209	1,498	4.8	93	0.3
1970	36,257	1,772	4.9	104	0.3
1975	41,292	2,072	5.0	118	0.3
1980	46,334	2,406	5.2	147	0.3
1985	50,612	2,821	5.6	179	0.4
1990	54,639	3,432	6.3	217	0.4
1995	58,336	4,441	7.6	274	0.5
2000	61,438	5,704	9.3	400	0.7
2005	64,233	6,718	10.5	543	0.8
2010	66,785	8,032	12.0	751	1.1
2015	67,959	10,731	15.8	1,427	2.1
2030	68,250	18,355	26.9	2,259	3.3
2050	62,452	22,795	36.5	6,182	9.9
2100	41,604	16,808	40.4	6,573	15.8

Source: National Committee on Ageing Society of Thailand, Office of Welfare Promotion, 2006; United Nations, 2015a; K. Wongboonsin & Wongboonsin, 2015.

Office of the National Economic and Social Development Board (NESDB) projects that Thailand will become an aged society in the next two years (2021). Population aged 60 years and over will be 14.1 million or 21.0 percent of population. In 2033, the number will rise to 18.7 million or 29.0 percent of population, turning Thailand into a super-aged society this year. Simultaneously, population aged under 15 years will shrink, from 19.0 percent in 2013 to 14.0 percent in 2033. The number

of elderly populations will double in the next 25 years, to 20.5 million or 32.1 percent in 2040 (Photnukun, 2016) and 36.5 percent in 2050 (United Nations, 2015). In another word, Thailand will enter the era of "super aged society" in less than 20 years, too short for preparations. Other ASEAN countries will also fall into the same situation as Thailand. Some differences may be the numbers of year and the severity of changes.

Graph 2. 3 Percentage of elderly population in ASEAN in 2015, 2030 and 2050



Source: United Nations, 2015b.

In ASEAN region, Thailand rank the second after Singapore being an aging society. Graph 2.3 shows Singapore as an aging society since 1999 with 3,229,681 population including 330,831 population aged 60 years and over or 10.24 percent of population (Singapore Department of Statistics, 2016). This region faces the similar aging situation as in other countries in the world. Laos undergoes the transformation at the slowest pace, with an aging population of 6.0 percent only in the present time. By 2030 as predicted by United Nations, Laos will be the only one ASEAN nation

that will not enter the aging society (United Nations, 2015). The report World Population Ageing 2017 forecasted Laos will become an aging society in 2050, following other ASEAN nations. In Laos, an aging population will account for 16.1 percent, slightly higher than the Philippines with the smallest number of an aging population in ASEAN, just 14.2 percent. Nonetheless, by 2050, all 10 ASEAN countries will be aging societies (United Nations, 2017).

In Thailand during the First National Economic and Social Development Plan (1961-1966), the birth rate accounted to 3 percent and the total fertility rate is 6.3 percent. The plan aimed to reduce the population growth in accordance with the socio-economic structural change, promoting regional growth and narrowing the income gap (Wongboonsin, 2015). In the Third National Economic and Social Development Plan (1972-1976), the first population policy is released and, after this, population policies were implemented in the next plans. During the Seventh Plan (1992-1996), population distribution and rural to urban migration were emphasized. Then in the Ninth Plan (2002-2006), the population policy is diverted to the proper family size. The Tenth Plan (2007-2011) has the core population policy on maintaining the total fertility rate of not less than 11.8 percent (Wongboonsin, 2015). The Eleventh Plan (2012-2016) coincided with the rural to urban migration that contributed to urbanization. This plan set clear the structural change, proper population distribution, more births and maintenance of the total fertility rate of not less than 1.6 (Office of the National Economic and Social Development Board, 2011).

The population plan launched in 1970 resulted in a constant birth decline and later children population shrinking despite an attempt to maintain the total fertility rate of 1.6. In 1964-1965, the rate declined from 6.3 to 1.62 in 2005-2010 and 1.58 in 2010. Thailand has been adopting the Twelfth Plan (2017-2021). However, the rate in 2017 stayed at 1.59 lower than the replacement level. In 2036, the rate will go down by an expected 1.35 (Office of the Prime Minister of Thailand, 2016).

The total fertility rate lower than replacement level fertility refers to the fertility of a woman over her lifetime to give birth to children to replace one generation or herself and the spouse. A total fertility rate of about 2.05-2.1 represents the replacement fertility. The rate of slightly above 2 is an ideal situation when the child dies before reaching the reproductive age and being a parent. There is a

significant difference between the fertility rate of 2.1 and 1.59, meaning 0.51 births lower than the replacement. The wider difference means the higher percentage of elderly persons if compared to other age groups. The continuing fertility rate lower than the replacement goes in the same direction of marital status situation. Thai population is likely to be single and get divorced increasingly. If married, people are prone to marry late, thus giving birth to the first child in old age. Another trend is a lower number of children per family. Women's employment is also blamed for the low fertility rate. More women work outside the home and more families prefer non-family childcare. As commonly seen today, working hours and child rearing burdens instill an idea of childlessness into families. These factors contribute to the less fertility rate, which coincides with the longer life expectancy owing to medical advancement. All these mentioned are related to the continuously higher proportion of elderly population (Wongboonsin, Surasiengsunk, Pejaranonda, Metranon, & Limskul, 2005).

Because of the considerably and rapidly lower births in many past years, Thailand's working-age and child population have decreased while elderly population has increased at a fast speed. According to Office of the Prime Minister of Thailand (2016), the proportion of child population, working age population and an aging population were 20.5, 67.6 and 11.9 percent respectively in 2010, then shifted to 18.3, 66.9 and 14.8 percent in 2016.

The country's economic growth, the lowered working-age population directly affects the country's production capacity. The less working age population implies the more health care requirement, the country is increasingly burdened with the dependent population and more resources will be allocated for health care. Therefore, some of resources are not available for economic purposes such as production, consumption and investment. As a result of this, the country cannot spend more on goods and services together with the decreasing GDP and competitiveness. GDP per capita may shrink, meaning the population's lower standard of living. An aging society, aside from change of population structure, brings out the widen income gap. This occurs to aging people who lack sufficient income. Further subsidies to this population group may be limited because of their growing proportion and longer life

expectancy. The overall problems in the future inevitably concern the human development and social security.

Table 2. 4 Thailand's population structure in 1950-2050

Year	Population proportion			Dependency ratio		
	Child	Working age	Aging	Total	Child	Aging
1950	42.1	52.8	5.0	83.0	77.0	6.0
1955	42.2	52.8	5.0	83.0	77.0	6.0
1960	43.6	51.2	5.1	88.0	82.0	6.0
1965	44.8	50.0	5.2	93.0	86.0	6.0
1970	44.4	50.2	5.4	92.0	85.0	7.0
1975	42.6	51.9	5.6	86.0	79.0	7.0
1980	39.4	54.8	5.8	76.0	70.0	7.0
1985	34.4	59.4	6.3	63.0	56.0	7.0
1990	30.0	62.6	7.4	53.0	46.0	7.0
1995	27.3	64.2	8.5	49.0	41.0	8.0
2000	25.1	65.2	9.6	46.0	37.0	9.0
2005	22.9	66.8	10.2	43.0	33.0	10.0
2010	21.5	67.0	11.5	41.0	30.0	11.0
2015	20.7	65.6	13.7	42.0	29.0	12.0
2020	20.0	63.6	16.4	44.0	29.0	15.0
2025	19.3	61.6	19.1	48.0	29.0	19.0
2030	18.6	59.9	21.6	51.0	28.0	23.0
2035	18.0	58.5	23.4	54.0	28.0	27.0
2040	17.7	57.7	24.7	57.0	28.0	29.0
2045	17.5	56.9	25.6	59.0	28.0	31.0
2050	17.3	56.4	26.4	60.0	28.0	32.0

Source: United Nations, 2009.

In demographic term, children and elderly persons are dependency population. The dependency ratio is correlated with the economic growth. If the number of working-age population grows higher and becomes the majority when compared with

the old-age dependency ratio, it is the period when a demographic dividend occurs and the country can reap economic opportunities. Table 2.4 shows the projection of Thailand's population structure in 2015-2050. The economic prosperity driven by working age population already came to an end. The highest proportion of working age people happened in 2010, at 67 percent of total population. From this point, this population began to drop to 65.6 percent in 2015 and will be 56.4 percent in 2050 (United Nations, 2009). 45.1 million working population or 66.5 percent in 2015 will reduce to 35.2 million or 55.1 percent in 2040. In 2050, the number will be 31.3 million or 50.2 percent. In 2100, only 19.2 million will represent the working age population or 46.3 percent (United Nations, 2015).

The United Nations (2009) estimated Thailand's old age population proportion would share 13.7 percent of total population and jump to 26.4 percent in 2050. The dependency ratio will peak in 2050 at 32 persons per 100 working age individuals. From 2010, the dependency rate rose to 42 persons per 100 working age individuals in 2015 and to 60 persons per 100 working age individuals in 2050. As estimated by the United Nations, the proportion of old age population of 17.9 percent would go higher to 47.0 percent in 2050 and 56.2 percent in 2100.

At present, the elderly population is higher than the past estimation. Thus, the dependency ratio grows. This trend goes against the proportion of working age population who plays an important role in economic production. Elderly population is considered dependency. This signifies the government should design a long-term plan to support this population to be more self-reliant economically and part of economic development. It is true that workers hold increasing potentials and abilities to give the elderly care. However, the shrinking number of workers affects the country's production and economic growth. Among ASEAN countries, Thailand's labor productivity goes slow and labors' incomes are barely enough for consumption expenses. This means scarce saving is threatening working age individuals, even for their future and their young and old dependents who spend income more than earning. Hence, an income deficit, poverty, economic insecurity and debt are commonly found among most Thais. At household and individual levels, poverty derives from various factors such as unemployment, overspending, climate change, consumption behavior, debt to gambling and laziness.

According to Office of the National Economic and Social Development Board, the poverty line measures the minimum standard of living. The poverty line is calculated by taking the cost or expenses of living of an individual at household level. The expenses include food and other necessities for living. The poverty line has unit in baht/person/month. If a person's expense on consumption per month does not surpass the poverty line, the person is considered poor (Office of the National Economic and Social Development Board, 2014). When categorizing by age group, poor children under 15 years and poor elderly aged 60 years and over outnumber the poor working-age population. When comparing the poor from all three age groups in 2000-2013, their numbers reduced because the working age population's income did not compensate the consumption expenses of child and elderly population. The higher proportion of elderly would yield the higher income deficit (Office of the National Economic and Social Development Board, 2013). Wongboonsin et al. (2014) report the similar findings. Table 5 presents households' financial security based on the study on 2011 National Saving by Office of the National Economic and Social Development Board. The study sought methods to tackle inequality under the changing population structure in Thailand. The study found the income deficit of 20,575 baht per person remained at all ages. At national level, the income deficit is calculated at 1,060.7 billion baht in 2009. The study estimated that the deficit would reach 1,428.1 billion baht in 2040. By basing on a lifetime, the deficit will be about 1.3 trillion baht and rise to 1.8 trillion baht. Notwithstanding the working-age's surplus, it would not be enough to compensate the deficit in their lifetime.

Table 2. 5 Pattern of income and consumption per person by age range in 2009 and 2040

	2009				2040			
	Total	0-24	25-59	60 +	Total	0-24	25-59	60 +
Income deficit (Consumption - income)	1,060,727	1,605,860	-916,850	371,716	1,428,127	1,210,834	-793,498	1,010,791
Consumption	5,329,079	1,970,883	2,798,760	559,435	5,332,216	1,485,532	2,462,043	1,384,641
Proportion (%)	100.0	37.0	52.5	10.5	100.0	27.9	46.2	26.0
Income	4,268,352	365,023	3,715,610	187,719	3,904,090	274,698	3,255,541	373,850
Proportion (%)	100.0	8.6	87.1	4.4	100.0	7.0	83.4	9.6

Source: Wongboonsin et al, 2014.

In one's lifetime, about 27,000 baht is the deficit. People's life expectancy increase implies an increase of expense on consumption and health care. The National Statistical Office and its Household Socio-Economic Survey confirms the elderly's major source of income is their children. This income decreased from 54.1 percent in 1994 to 40.1 percent in 2011. In the same years, the elderly with their own income grew from 31.5 percent to 35.1 percent. These with saving, interest and rent as major sources of income were very minimal (lower than 3 percent of total population). The summary in this section reaffirms households' financial instability from soaring debt and small saving.

With an increasing proportion of ageing population around the globe along with longer life expectancy, relevant expenses and costs were in the same direction. Inevitably, the governments of each country must bear these expenses and costs which includes medical treatment, welfare spending, and pension. Therefore, such countries must plan in response to potential impacts caused by changing environment. For example, policy on life security should take an issue about how to increase people's wealth when their life expectancy is longer into consideration. Also, the governments must ensure that people could maintain their financial stability after being retired. Financial freedom among retired population must be well-planned, which helps bridge the gap of inequality of quality of life after retirement and ease the government's burdens on welfare spending for the poor elders.

2.3 Concept of Retirement Planning

Fundamental concept of retirement

"To retire" in an English dictionary is translated into Thai as "เกษียณอายุ" (gasiian aa-yoo) meaning withdrawal, withdrawing oneself from a society or from any occupation. Bunyahotara (1994) gave a definition of "เกษียณ" (gasiian) as termination, deterioration, withdrawal from a society, colleagues and working hour life.

Retirement is a social process regarding occupation that requires an employed person to retire from the job at a specified age or, in other words, from an environment to the new one such as withdrawing oneself as an employee to be free from any assignment (Chen-oprom, 1991). As said by Burnside (1998) and Atchley

(1994), retirement is an occupational life cycle at the lowest point of employment, responsibilities and job opportunities. A retired person earns a pension as an income without working. Retirement, hence, is a social role that replaces a person according to right, duty and relationship to others. Retirement is a process for a person to prepare life for new things, adjustment and even social isolation after retirement.

To sum up, retirement is a state of a person to leave from the full-time job at the age specified by the employer. People retire at 55-70 normally, depending on the country's development. Sweden and Denmark set 70 years as the official retirement age while USA sets 65 years. In Indonesia, Malaysia and African countries, 55 years is the retirement age. In Thailand that abides by the resolution of the World Assembly on Aging, all male and female employees retire at 60 and are called elderly persons. Nonetheless, retirement also depends upon the career and organizational regulations.

Impacts from retirement

The coincidence of retirement with aging causes a retiree to have two status, as a retiree and an aging person. Multiple impacts fall on the retiree's life.

1. Physical aspects

A retiree inescapably undergoes physical deteriorations, for example neurological decay, sight problems, hearing loss and orthopedic impairment. There are theories related to biological aging, the autoimmunity theory and the immune system theory. According to these theories, aging parallels the less and less immunization and the body begins to destroy own cells. In this stage, the body's resistance to diseases weakens, easily getting sick and severe symptoms. Without proper health care knowledge, the elderly's health can be worsened dramatically.

2. Mental health

Retirement affects daily activities. Retirees lose positions, power, honor and usual socialization and are called the elderly and disabled. Happening at the same time, the loss of love ones is common, like death of spouses, friends and same-age relatives. The family relationship gets distanced as children have their own family and move out. Family members live in different places and meet other less. Failure to adjust to these changes leads retirees to the feel of uselessness and worthlessness.

Many elderly persons are stressed, depressed, paranoid, disappointed, isolated and dissatisfied with the current life, and may think of suicide finally (Manit, 1999).

3. Social aspects

Retirement is not far from withdrawal from a social life. Elderly persons mostly stay home, less socialization with friends and the outside world. The previous prestige fades away completely. Many people feel useless, disrespected, isolated and lonely. If the post-retirement role cannot substitute the old role, mental health will start to grow inside.

4. Economic aspects

Despite less expenses after retirement, a shrinking income may be a great problem to these who still have burdens. Normally, older persons have common expenses related to health decay.

Retirement phase

As explained by Atchley (1994), retirement is the process of changes faced by a person. Retirement has six phases

1. Pre-retirement phase has two sub- phases, namely remote phase and near phase. The first one is for a soon-to-be retiree. Worry over retirement does not exist yet. In time of the near phase, the soon-to-be retiree starts to worry of getting aging and over income, health and job loss. In this phase, if well prepared, the retiree will feel no worry or be slightly worried, but with positive attitudes towards retirement.

2. Honeymoon phase allows a retiree to be happy, take some rest, be free and do as desired. This phase may finish less than one year or take up to five years.

3. Disenchantment phase is the period when a retiree is under a great deal stress and loneliness, has no friend, easily gets irritated, feels unsatisfied with many things and cannot cope with changes.

4. Reorientation phase is the period when a retiree adjusts himself to everyday life.

5. Stabilization phase is the period a retiree understands the roles and can adjust himself to changes, getting familiar with the post-retirement living.

6. Termination phase refers to the period of non-self-reliance and the terminal stage.

The retirement phase varies by individual and their pre-retirement preparation. The well prepared can adjust oneself and pass the stressful phases into the reorientation phase rapidly.

Retirement Planning

The goal of retirement planning is success and a happy life (Kimmel, Price, & Walker, 1978), or wellness as said by Othakanont (2011). Bunyahotara (1994) categorizes an individual's life stage into three stages, childhood, adulthood and late adulthood. The last stage is known as the golden age if an individual carefully prepare for it. Retirement planning is vital like planning a child's education and adult's career.

To design a plan for quality retirement, one should consider physical and social conditions including physical and mental health, relationship with others, time management, living place, new lifestyle and changing financial status (Rikers & Myers, 1990). The plan needs continuation in order to avoid any crisis at the terminal stage.

Academics suggest proper preparation periods prior to retirement. Bunyahotara (1994) proposes 10 years before retirement. For Singharerk and Siriwong (2017), 10-20 years are good before retirement. Similar to Rattanakorn (1979), he encourages government staff to prepare early since 40. Leedy and Wynbrandt (1987) prefer earlier preparation, from age 30.

Boonnag (2006) points out that early preparation since young age by having proper behaviors, namely self-support, self-reliance and self-sufficiency is greatly important for retirees to live with the good quality of life. They can have freedom and dignity, able to help themselves, families and the society for long years before being non-self-reliant and disabled. Preparation should take place from the pregnancy stage. Pocharoen (2008) adds that people should be hard-working in school years and keep learning. Job opportunities will open for them. In working years, they must be determined, honest and have good performance that will create self-esteem. Saving should be started, not overspending and being infatuated with power and position. People should stay healthy physically and mentally. When the retirement arrives, they can adjust themselves to the post-employment life and aging conditions and begin a new happy life as retirees.

Atchley (1994) introduces two stages of retirement preparation

1. Remote phase: Retirement seems far away for many people. Indeed, an early preparation is possible before and during working years. What to be prepared includes:

1.1 Finance that needs long-term planning, especially important for people who wish a happy life after retirement

1.2 Leisure time that also needs skills to be developed and practiced in young ages

1.3 Health care, meaning that a person should be healthy since young. If having poor health since younger years, health in retirement years will be worsening.

2. Near phase: People think about how closer the retirement is. They may witness their spouse and colleagues retiring. They should prepare:

1.1 Mentally, they should accept social rules and not worry over retirement excessively.

1.2 Attitudes towards retirement should be positive if they prepare early.

Mostly, organizations organize pre-retirement activities in the last year before retirement. They can only help workers mentally and to develop good attitudes, not financial matters, living and health that require long years of preparation.

Factor to retirement preparation

There are potential factors to retirement preparation detailed next.

1. Sex is a factor that influences different roles of persons. In Thai society, men are leaders and heads of the family. In terms of retirement as found by Manoonpatrachai (2001), sex is associated with retirement preparation economically. Males' average score of economic preparation is higher than females. Wimonchatwetee (2000) also confirms female workers in low positions are very much less prepared to retire. Opposite to Pothipakkhee (2007), females have retirement preparation more than males. Chuanchaisitt (2009) says different sexes and retirement preparation do not have a significant relationship.

2. Age is mentioned in Erikson's theory of eight ages of life and the development task thereof. Age is important and an increasing age is related to

people's differences. If a person has proper development at every increasing age, the person is prepared for the next increasing ages. Aging is the last stage of the human life. People with increasing years of age and age-appropriate development tend to prepare for retirement than people of younger ages (Mueangthai, 1998). Generally, people with increasing ages have longer working years that return them the higher salary. They have opportunities for retirement planning more than younger people.

Wimonchatwetee (2000) finds age is related to pre-aging practices. Older people obtain the preparation scores higher than younger people. Evan et al. (Chuanchaisitt, 2009; Mueangthai, 1998; Wimonchatwetee, 2000) also find retirement preparation is associated with people with retirement drawing closer. People who are approaching the age of retirement plan for retirement more than people whose retirement still seems remote.

3. Marital status is a factor to living in terms of belief, feeling, perception and age-related practice. Normally, married people have more responsibilities, particularly for family members. Most married need more life security and some materials that demonstrate their social status such as houses, cars and properties (Thawisin, 1995). Namphut (1993) and Thawisin (1995) reveal married couples that still living together are likely to prepare for retirement more than the single, widowed and divorced.

In the study of Manoonpatrachai (2001), the marital status has a relationship with retirement preparation. Single persons gain the highest scores on economic and health preparation. Married persons gain the highest scores for mental preparation. Boonrodchoo (1997) says married persons experience the better retirement than single persons.

4. Health condition refers to the presence of perfect health. A healthy person shows no sign of any disease and can live based on capacity (Orem, 1985 cited in Witthayachokkitikun, 1991). Perception of health condition associates with health promotion activities. Most healthy aging persons tend to carry out exercises greater than unhealthy aging persons (Tantiwattanasathien, 1991; Weitzel & Waller, 1990). Manoonpatrachai (2001) reveals that the health condition has a relationship with pre-retirement planning in economic, health, physical and mental aspects. Not different

from the studies of Siriphanit (2008), healthy older persons have retirement preparation more than the unhealthy with statistical significance.

5. Education is considered a fundamental factor to human behaviors. Education gives knowledge to people and change their behaviors. According to Fonthongmongkol (1995), education have an influence over occupation, income, health, values and attitudes. As studied by Thawisin (1995), Fillenbaum (1971) and McPherson & Guppy (1979), the education level is associated to preparation for aging. Also insisted by Thamkittikun (2007) and Wimonchatwetee (2000), people with higher education have retirement planning more than these with lower education. Differently found by Chuanchaisitt (2009) and Witwongkangwan (2007), different education is not associated to the retirement preparation.

6. Income and adequate income are indicators of economic and social status of a person and assess supports from family members and the society. An adequate income for living enables a person to do activities such as health care, saving, investment and hobbies. Wimonchatwetee (2000) made a study and found a monthly income has a connection with pre-retirement practices. Similar to Fillenbaum (1971) and McPherson & Guppy (1979), people with high income have the better preparation than these with lower income. Manoonpatrachai (2001) sees a connection between a monthly income and the retirement preparation in economic, health and mental aspects.

7. Information about retirement preparation is a factor. According to Albert Bandura's social learning theory, human's learning process is complicated (Bandura, 1977). This concerns human behaviors that are learned through modeling mainly. There are two types of modeling. Live model involves in an actual individual or a living thing. Symbolic model involves in alphabets, words, pictures and others. People learn by modeling about what to do, then select the model a proper behavior. Models, often described as information providers, influence learning.

Information access about retirement planning makes a person learn about the role after retirement. Knowing information contributes to positive attitudes and proper behaviors. How to access information:

1. People in nearly retirement age should prepare by learning from documents, books, TV, radio and other sources or even talking with retirees.

2. Employers should organize workshops on retirement preparation.

3. Public and private organizations should disseminate knowledge on retirement preparation. Thawisin (1995), Mueangthai (1998) and Chuanchaisitt (2009) agree that information access contributes to retirement preparation positively. People having high level of information access tend to prepare more than these with lower level of the same.

8. Attitude is defined by Ajzen and Fishbein (1980) as a preparation state that influences the determination actions and behaviors of an individual. Kendler (1974) defines it as an individual's preparation to behave towards social stimulus or tendency to behave in a way that opposes to or promote some experiences or ideologies.

Attitude is composed of three components. The cognitive component is knowledge, understanding and thought of a person that vary by each person. Affective component concerns emotional stimulants to have certain knowledge, understanding and through. Emotion may be positive or negative. Behavioral component is referred to an intention to behave according to the thought and feeling. An attitude should be measured by all three components together because it is made of them. If a person carries a good attitude, the person tends to have more activities than persons with bad attitudes. Wongkunchorn (1994) finds the attitudes towards the elderly club has a positive relationship with the elderly's participation in the club's activities.

Wimonchatwetee (2000) conducted a study on retirement preparation among university staff. The overall score of the attitudes towards retirement and preparation is good and related to retirement preparation positively with a statistical significance at $p < .001$. If having good attitudes towards retirement and relevant preparation, this promotes the pre-retirement practices. Permanent employees often face problems from low income, lower education and non-pension retirement. This group therefore has a poor attitudes towards retirement and relevant preparation. Chuanchaisitt (2009) and Manoonpatrachai (2001) report the attitude to retirement preparation has a positive relationship with pre-retirement practices.

Concepts and theories on financial goal setting

Every person sets their financial goals variously, based on five goals (Gordon, 2001).

1. Prevention of risk by investing in funds for emergencies and purchasing insurances for life, health, accident, home and car

2. Financial security for oneself and family is extended to having one's own family and new family members, education and purchasing houses, cars and other necessities.

3. Decent living that follows the second goal, meaning that people may feel necessity for vacation, leisure, entertainment, more houses and cars.

4. Financial freedom and happy retirement means having a satisfactory retirement and living at the same standard as in the working life.

5. Systematizing and allocating assets are for wealth creation for oneself, family and children.

In the Life Cycle Financial Planning, the personal financial life cycle has two levels.

Level 1 Protecting and accumulating wealth

Level 2 Distributing wealth

In the life cycle, needs in each life stage overlap among each other. The status or pattern of lifestyle of each person affects their financial status and needs, which vary by the following factors.

1. Marital status including single, married, divorced and separated

2. Financial status including employed, unemployed and not working

3. Age

4. Number of family members

5. Economic condition including interest rate and employment

6. Education

7. Health

According to Inlakorn (2005), a person's life cycle in each life stage varies according to status, earning ability, expense and responsibility. These influence financial needs and goals of the person in different life stages. The person should design their financial plan based on the life stage. The financial goal has two terms.

1. Short term financial goals are the goals a person can achieve within a short period, less than one year. For example, the person may save money for electric appliances and vacation.

2. Long term financial goals are for the next 5-20 years. A person needs years to collect money to achieve the goals, such as for retirement, children's education and such like. These long-term goals are changeable through situations, maybe economic fluctuation and income change.

As said by Mathur and Mathur (1984), the occupation influences income that influences different lifestyles of persons. Compared with people earning low income, people with good jobs that allow high income, wealthy lifestyles and higher financial goals. However, regardless of high or low income, everyone should set their own financial goal in order to guide financial planning.

Concepts and theories on personal financial management

Gitman and Joehnk (2005) introduce five aspects of personal financial management

1. Management of cash and liquid assets

A liquid asset is cash and other assets that may readily be converted into cash at a reasonable price. These assets can be deposits, current accounts and short-term investments. A person needs to have enough liquid assets for everyday living to prevent being short of money. In fact, financial difficulties can happen to every family if not well prepared. These will affect family members of course. Cash should be reserved in all families. Nonetheless, the reserved may be useless unless being saved in bank or invested into short-term bond funds.

2. Credit management

Credit is a loan, most often short-term one approved by a financial institution for a borrower to use for any purchases that cost higher than the cash in hand. Generally understood, credit is considered beneficial if the borrower is short of money. A credit increases liquidity for the borrower. On the other hand, a poorly managed credit brings about overspending, inflation and higher cost of credit.

3. Life and health insurance management

Life insurance emerges as a human life is worth. It is true that anything can happen to life and assets, and thus losses are brought to oneself and family members. Everybody realizes about the same threats and trusts life assurance companies to keep their money. In each life insurance, the loss of everyone is shared with others. Life

insurance generates financial returns such as the saving plan program that benefits tax reduction. Health insurance reduces risks to health. People can lose money or have less income because of diseases, accidents and even assaults. Following these are expenses and income loss because of inability to work. Savings may be lessened to zero. Health insurance is a prevention of the aforementioned happenings.

4. Investment management

Investment is the usage of available assets to gain a return in a certain period. Investment has two patterns; tangible and intangible investments. Financial investment means an investor puts the money for a purchase of securities that will generate income. Every purchase is dealt in money market. The objective of financial investment is to achieve financial returns, maybe interest, dividend, stock profit and other benefits. In other words, financial investment expects financial returns.

5. Financial planning for retirement and asset management

Age 55-60 or higher is the period when an employee leaves the job. Retirement is the end of working life that has produced full benefits. The retirement age of persons depends on the occupation and rules of employers. There is one thing for sure, everybody cannot avoid retirement. It is essential for them to prepare early to avoid financial and mental difficulties. In planning, there are things in consideration, for example source of income after retirement, saving for retirement and financial status forecast.

In personal financial management, asset management is a momentous business. Most people work hard throughout their life just to reach goals. Many workers accumulate assets during working years for wealth, families and children. Generally, the value of these assets increases and will be allocated to heirs fairly. It is essential for retirees to learn about making a will and mandate a trustee. These actions are appropriate and effective financial management that also prevent disagreement among family members.

In the Life Cycle Financial Planning, Gordon (2001) writes that good financial management forms a pyramid. He recommends how to balance a person’s finance, beginning with basic financial needs and management of income and expense. These stay at the bottom of the pyramid, implying the solid financial foundation. At the pyramid’s top, it is wealth distribution or the final goal of personal financial

management. Every decision in each step is powerful for the next decisions. To exemplify, if not having good income-expense management, the person may face credit problems from unpaid loan. Their money will be complicated in the higher steps of the pyramid. Therefore, the person needs to assess the strategy and then revise goals from time to time.

Theories on personal financial management

Hallman and Rosenbloom (2000) mention personal financial planning is planning for managing personal finances in compliance with the financial goals of a person. Most people make use of multiple financial tools, before reaching their goals, such as stocks, bonds, funds, insurances, bonuses, money market, saving accounts, pension, personal loans, properties and others.

Practical personal financial planning includes investment in corporate bonds or other properties that yield fix benefits, shares and others such as life insurance with a saving program.

Inlakorn (2005) says personal financial planning makes a person to forecast what will happen in the future and design the relevant plan. There are five steps of financial planning.

Step 1 Assessing financial situation of oneself at present

The person should assess the income, expenses, assets, debts and savings. This means the person should write the personal financial statement that includes a balance sheet, income and expense statement.

Step 2 Setting financial goal

If having a financial goal, the person can decide what to do to achieve the goal. This step is equivalent to a walk that requires the destination. When setting the goal, the person should identify what exactly is need, perhaps a car, how much for it? And when to buy it? More importantly, the goal should be feasible, meaning that the financial goal should go with the person's financial status.

Step 3 Identifying and assessing choices

This step concerns determining possible choices in order to achieve the financial goal. The person should consider risks from each choice, then select the best choice that meets the person's financial status and economic situation at present. This

step requires information from sources for the person to consider and assess choices. Information may be books, journals, websites and recommendations from experts, tax planners and financial advisors.

Step 4 Developing and implementing financial plan

After choosing choices, next is developing the financial plan. The person develops and identifies how to implement the financial plan. The plan will be unachievable unless it is implemented. To implement the plan, the person needs to contact other people such as life insurance agents and brokers for investment in assets, opening bank accounts and other transactions.

Step 5 Monitoring and revising plan

Financial planning is endless. After implementation, the person should monitor whether the plan is good or practical. If not, revision is a must. The person's financial plan always receives impacts from economic slump and social situations, even from the person's career promotion. The person, hence, needs to review the plan and revise it regularly.

Component of retirement financial planning

1. Supakitvanitchkul (2015) investigated saving behaviors and financial management before retirement: Case study of Silapakorn University staff, at Sanamchan Campus, Nakhon Pathom. There were 327 target participants that went through the stratified sampling. The research tool is the questionnaire asking saving behaviors and financial management before retirement. The content validity is 1.00. The questionnaire shows the reliability at 0.93. Data collected were analyzed using Chi-Square, T-test and F-test (ANOVA). The statistical significance is set at 0.05.

1. Personal factors that influenced saving behavior were sex, age, marital status, highest education level, number of family member, number of children, number of dependent in care, type of staff, affiliation, income and expense per month.

2. Personal factors that influenced financial management were marital status, highest education level, number of family member, type of staff, affiliation and income per month. Factors not powerful for financial management are sex, age, number of children, number of family members in care and expense per month.

3. Saving behaviors consisting of saving rate, saving pattern, saving objective, saving option, saving period, sources of saving and financial retirement management did not affect financial management.

2. Hamanee (2013) studied the pattern and factors to saving of households in Bangkok. This study explored the economic status, incomes, expenses, debts, properties, saving patterns, saving objectives, trend of saving and factors to saving. The study adopted the multi-stage sampling technique to select 400 participants earning income and living in Bangkok. Data were analyzed by statistics including percentage, mean and F-test. Most participants were married females aged 37 with bachelor's degree. They are employees for companies and has household income of 296,082 baht per year. Their household annual expenses accounted for 245,686 baht. Most has savings deposited at commercial banks. The purposes of saving were for retirement or health security. Influential factors to saving were income, socialization saving, extra expenses, educational saving and occupational advancement.

3. Komolpetch (2011) did research into saving behaviors of staff of Nakhon Ratchasima College. This study found saving behaviors and patterns and analyzed factors to saving. Questionnaire is the research tool to collect data from 218 staff. Female respondents outnumbered males. Most respondents are in 26-30, single and holding bachelor's degree. Most received 18,649 baht income per month. Their family earned 49,000 baht per month averagely. When asking about saving behaviors and patterns, most reported debts about 20 percent of income and kept 10 percent of income as saving. Saving after payment is popular. They has savings in bank accounts. Health treatment purpose become the major purpose of saving. The most important factor to saving options are the return rates, risk of financial institution and satisfaction of services provided by the financial institution.

4. Arjareeyawut (2011) studied the meaning, pattern and process of saving of officers of Thai Customs at Kong Toey Office, Bangkok. This qualitative study adopted the grounded theory and selected the study site that met the study's objectives. In-depth interview with 20 civil servants, government employees, permanent and temporary employees. The meanings of saving given by them were the saving plan and for retirement, saving some income for life uncertainty, saving together with investment for return and saving as security for themselves and family.

Saving came in two forms, involuntary saving required by the government organization and saving based on their need. They also has different saving processes, namely planned saving and unplanned saving.

5. Chitviriyawat (2009)conducted research on debt and saving of rubber farmers in Toong Tam Sao, Hat Yai District of Songkhla. The search is aimed at finding out economic and social situations of farmers, their debts and savings, and relevant factors to debts and savings. 120 farmers who could provide quality data were selected by the accidental sampling technique. Descriptive statistics benefited data description. Most farmers were married males aged 41-50 with elementary education. Most owned about 19 Rai of real estate per household. Within this owned property, 17 Rai is reserved for rubber trees approximately. Also, households reserved 13 Rai as tapping zone. Their average income is 60,707 baht, higher than expenses. The most preferable saving pattern is saving in credit unions, for health purpose and children's education.

6. Rueksantad (2011) made a comparative study of saving behaviors between company employees and civil servants in Bangkok. Most studied people were single female aged 20-30 and having no dependent in care. Company staff earned 20,001-25,000 baht and has expenses of 10,001-15,000 baht per month. Civil servants earned 15,001-20,000 baht and paid less than 10,000 baht per month. However, both groups reported no saving plan. They did not fix how much the monthly saving should be. The average saving per month ranged from 1,000 to 5,000 baht. The purpose of saving is for contingency and the popular mode of saving is saving deposit. The trend of saving looked good while the most powerful factor for saving is income.

Table 2. 6 Component of retirement financial planning

Component of retirement financial planning	Supakitvanitchkul (2015)	Hamanee (2013)	Komolpetch (2011)	Arjareeyawut (2011)	Chitviriyawat (2009)	Rueksantad (2011)	Frequency
1. Pull factors	✓	✓	✓	✓	✓	✓	6
2. Push factors	✓	✓	✓	✓	✓	✓	6
3. Supporting factors	✓	✓	✓	✓	✓	✓	6
Total	3	3	3	3	3	3	

Table 2.6 demonstrates the components of retirement financial planning. There are three theoretical components selected into the model (frequency of 5 at minimum). All components are added into the conceptual framework.

Component 1 Retirement financial planning associated with pull factors

Component 2 Retirement financial planning associated with push factors

Component 3 Retirement financial planning associated with supporting factors

Figure 2.5 is the model of retirement financial planning that incorporates the above three components

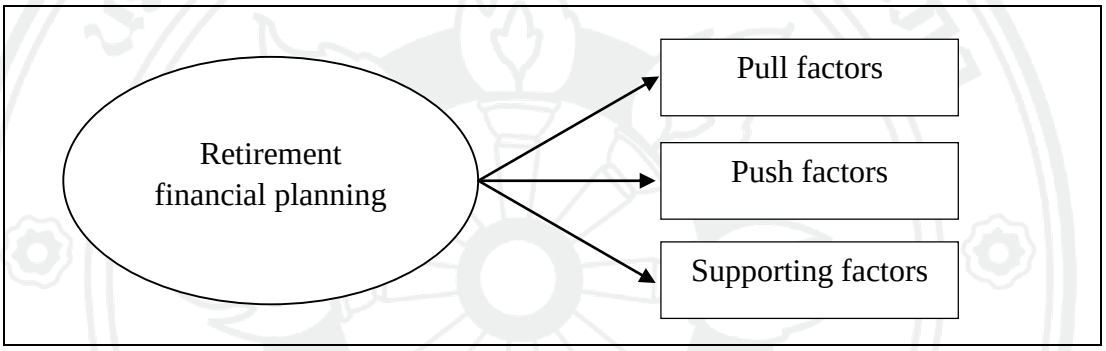


Figure 2. 5 Model of retirement financial planning

2.4 Concept of Financial Literacy

Defined by the Organization for Economic Cooperation and Development (OECD), financial literacy refers to an awareness, understanding, expertise, attitude, and behavior that enabled individuals to make a proper decision financially. In the end, it will lead to individuals' financial health.

The Bank of Thailand (2013) stated that financial literacy is an understanding, expertise, attitude, and behavior that individuals sought for financial information demonstrated through financial behavior. The development of financial literacy concepts is explored by the Financial Services Authority (FSA) measuring financial literacy (Kempson, Collard, & Moore, 2005). Financial factors showing financial literacy based on the conceptual framework developed by Financial Services Authority are financial understanding, financial expertise, financial attitudes, and financial confidence. These factors are influenced by experience and environment which includes personality and selfness. Financial literacy could be measured through

human behavior. Moreover, the Organization for Economic Cooperation and Development (2004) redefined the definition of financial literacy in a universal fashion and determined financial literacy measurement. A full score of financial literacy is 22, and it has to be related to the financial literacy measurement defined by the Organization for Economic Cooperation and Development which is complied with that of the Financial Services Authority (FSA).

Financial literacy is abstract. It is intangible like intelligence and personality and could not be directly measured. It must be done through variables or determinants indicating characteristics of financial literacy. These variables or determinants were studied and reflected in the conceptual framework introduced by the Financial Services Authority of the United Kingdom (Financial Services Authority, 2005). The objectives of the study are to examine and survey a level of financial literacy among people living in the United Kingdom. The first financial literacy survey is carried out in 2004 and its report is published in 2006. The Financial Services Authority defined the conceptual framework of financial literacy as the factors influencing people's financial skills. These financial skills includes understanding, expertise, and attitude and confidence. Also, these three factors were influenced by individuals' experience and environment including their personality. Therefore, financial literacy is reflected and measured through human behavior. Its conceptual framework is illustrates in Figure 2.6.

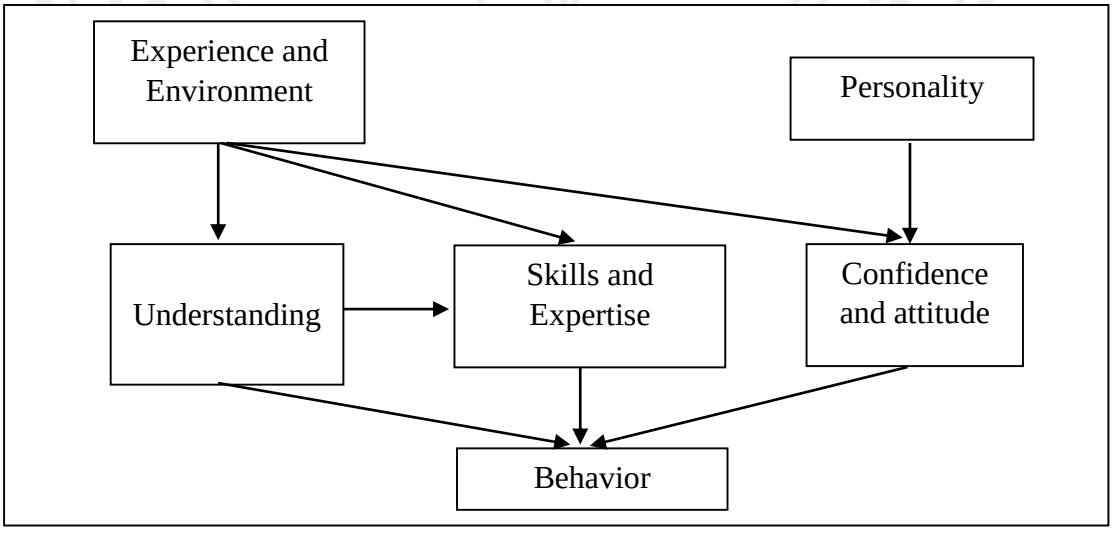


Figure 2. 6 Conceptual Framework for Measuring Financial literacy

Source: Financial Services Authority, 2005.

A study conducted by the Organization for Economic Cooperation and Development or OECD (2012) measured financial literacy. It is designed as survey, and questionnaire is a research instrument for data collection. The study covered three financial skills: financial attitudes, financial behavior, and financial knowledge. The results from the financial literacy survey reveal that all three financial skills affected financial being and financial health. Moreover, demographic factors, for example, sex, age, income, and education has relationships with the respondents' financial skills. Such results were in line with a research conducted by the Bank of Thailand (2013). The research investigated financial literacy among Thai people throughout the country. It is found from the research that average financial literacy among Thai people is 58.8 out of the total score of 22. In addition, attribute of general financial knowledge is below average score. Demographic factors were also correlated with financial literacy. The respondents with a low level of education and income along with low-paid jobs received the score of financial literacy lower than other groups. It can be stated that financial knowledge could improve individuals' financial behavior.

The results from Thailand's 2016 financial literacy survey show that average financial literacy is 61 percent. Attribute that received the lowest score of financial literacy is financial knowledge at 48.6 percent. Financial behavior is 62.2 percent and financial attitudes is 76 percent. Overall, Thailand's financial literacy is much better than in 2013 and equal to 2015. Nonetheless, the score of financial behavior attribute decreased. For example, the respondents did not set any long-term financial goals, ignoring personal financial management, not making repayments on due date, and not carefully comparing the prices prior to purchases. On the contrary, financial attitudes among Thai people is improved when compared to the previous survey.

Component of financial literacy

This study examines concepts, theories and relevant studies in order to determine components, definition and indicators of studied variables. By examining these mentioned, the researcher synthesizes and determines components of financial literacy presented next.

1. Financial Services Authority or FSA (2005) captures a set of components of financial literacy in the report "Measuring financial capability: An exploratory study". They are financial attitudes, financial behavior and financial knowledge.

2. Rooij, Lusardi, & Alessie (2007) studied the relationship between involvement in capital market and level of financial literacy, and decision making and ordinary shareholding. The study used Probit Model. This study reveal financial attitudes, financial behavior and financial knowledge at low level would result in the potential for less investment in ordinary shares or funds.

3. Delavande, Rohwedder and Willis (2008) developed a theory and economic model using Merton Model. There is a hypothesis that a person could access full perfectly information and make rational decision. People have different levels of financial literacy as revealed by the Human Capital Framework. Different financial literacy influenced involvement in capital market, retirement saving and the higher risk-free return rate. Components of financial literacy includes financial attitudes (FNA), financial behavior (FNB), financial knowledge (FNK) and financial knowledge with risk and return (FNR).

4. Gaurav and Singh (2012) studied financial literacy and calculation ability of farmers in rural India. They has financial literacy at low level including financial attitudes, financial behavior and financial knowledge. The literacy level is measured through financial attitudes and knowledge about debt. However, they has the high level of calculation as measured by mathematical method and the probability theory. Education and financial experience affected the level of calculation ability, which also influenced the level of financial literacy.

5. Almenberg and Dreber (2012) wrote in paper "Gender, Stock Market Participation and Financial Literacy" the summary of financial literacy. They made a sampling of 1,300 Swedes and found females are involved in capital market less than males. Financial literacy formed from financial attitudes, financial behavior and financial knowledge found in females is less than males.

6. Calcagno and Monticone (2013) and their paper "Financial Literacy and the Demand for Financial Advice" summarized the components of financial literacy. Three levels of financial literacy, namely financial attitudes, financial behavior and financial knowledge that remained low did not imply poor results of financial decision

making as long as the decision is guided by a financial expert. Formal financial guidance related to financial literacy more than informal one. Financial literacy increased the probability of more consultation on investment.

7. Ravikumar, Sivakumar, Jawaharlal, Venkatesa and Sureshkumar (2013) assessed the financial literacy in jasmine farmers in Tamilnadu, India. The factors powerful for financial attitudes, financial behavior and financial knowledge in farmers were age, education, experience, income, size of owned property, number of years and times of transaction at bank and bank account.

8. Balloch, Nicolae and Philip (2015) studied sociability, financial literacy and confidence in capital market and their influence on involvement in capital market using Probit Model and Multiple Regression Model. Financial literacy including financial attitudes, financial behavior and financial knowledge is significant statistically to an involvement in capital market. The sample group's financial behavior also influenced the level of involvement in capital market.

9. OECD (2015) used a survey and questionnaire to measure the level of financial literacy in three aspects, namely financial attitudes, financial behavior and financial knowledge.

10. Akoto, Appiah and Turkson (2017) examined the financial literacy of cocoa farmers in Ghana and found farmers living in urban areas carrying financial attitudes, financial behavior and financial knowledge more than these living in rural parts (with low financial literacy level of 40.96 percent) . Living area, age and education were significant to financial literacy statistically.

11. Hasibuan, Lubis and Walad (2018) developed an accounting module aimed at strengthening financial literacy consisting of financial attitudes, financial behavior and financial knowledge. The module is constructed for oil palm farmers in Indonesia. The module is verified by experts in economics, education media and agricultural accounting. Five parts made up the model: Fundamental knowledge in agricultural accounting; Fundamental accounting; Agricultural break-even point; Calculation for opportunity cost in agriculture and; financial management for oil palm farm.

12. Zakić, Kovacevic and Damnjanovic (2017) analyzed the level and significance of financial literacy of farmers in Serbia. Financial attitudes,

financial behavior and financial knowledge of farmers stayed at low level. Education and age play a significant role in financial literacy.

13. Kiriwan (2015) investigated the relationship between level of financial literacy and saving for retirement. The measurement of financial literacy levels encompasses financial attitudes, financial behavior and financial knowledge. Personal factors determined the sample group's different financial literacy. The higher level of financial literacy increased saving opportunities for retirement. Most of sampled people lack financial literacy.

14. Bank of Thailand (2016) conducted a survey on Thai financial literacy in 2015 and summarized that financial literacy is made of financial attitudes (FNA), financial behavior (FNB), and financial knowledge (FNK). On average, Thai people's financial literacy remained at 61.0 percent. Thais were weakest in financial knowledge, just 48.6 percent, then behavior and attitude or 62.2 and 76.0 percent respectively. However, from 2013 to 2016, Thai people's financial literacy improved, except financial behavior that fell. Many Thais failed to set long-term goals, were deficient in careful financial management, settled bills after deadline and made unwise purchases. The population groups that received low scores in financial literacy were young people aged 10-19, old people aged 80-99, these with low education and household income and non-employed people. When looking inside each region, the lowest scores in financial literacy existed in the Northeastern and Central regions. The highest scores belong to Bangkok and vicinity and Southern Region.

15. Warawichanee (2017) examined the status of financial knowledge and financial wellbeing. She also made an analysis of relationship between financial knowledge and financial wellbeing of employees in the financial industry in Thailand. She has staff of Siam Commercial Bank PLC as case studies and finalized the components of financial literacy that includes financial attitudes, financial behavior and financial knowledge.

16. Thammanitayakul and Meungsan (2017) built a model for personal financial management of Thai navy officers. This study intended to study influential factors to successful financial strengthening of Thai navy officers. It tried to search for factors influencing successful financial strengthening and influence of factors on successful financial strengthening and develop a model for personal financial

management of Thai navy officers. The study found financial attitudes, financial knowledge, financial behavior, self-sufficiency economy principle and achieving financial strengthening directly and positively influencing personal financial management. They also indirectly and positively influenced successful financial strengthening with 0.01 statistical significance.

17. Paukmongkol (2017) examined the level of financial knowledge and made a comparative study to find differences of level of financial knowledge of farmers in Pathum Thani Province. In this study, financial knowledge has three groups, namely financial attitudes, financial knowledge and financial behavior. Most farmers gave correct answers to questions about financial knowledge, but calculation for compound interest. Over half of them answered wrongly. When asked about financial behavior, most farmers show careless financial management. They has no saving, in preference to loan when short of money. In addition, they expressed the good attitudes toward spending rather than saving. Their overall financial knowledge is moderate.

18. Auepiyachut (2017) made a study on financial knowledge: Indicator and impact on saving behavior of housewife group. The study presented three components of financial literacy, namely financial attitudes, financial knowledge and financial behavior. Most participants has low level of financial knowledge, moderate level of financial behavior and positive financial attitudes. Population characteristics influenced the level of financial literacy while increasing financial literacy caused increasing saving behavior.

19. Benyasriawat (2018) and his study on financial management: Financial behavior, attitude and knowledge of employees having less than 5-year work experience. Major findings confirms that participants were aware of safety especially lending money to others. They highly agreed with being hard working as the key to success. With regard to financial knowledge, most gave six correct answers from ten questions.

20. Lakkanawanit and Dungtripop (2018) summarized three components of financial literacy that includes financial attitudes, financial knowledge and financial behavior. They measured the financial literacy of rice farmers along the Pak Phanang River Basin. Most farmers have moderate financial literacy. Their financial

knowledge remained moderately as they could give answers to easy questions only. However, their financial behavior stayed at high level because of good financial behaviors. The only weakness is the absence of record accounting. The level of financial attitudes is neither high nor low. The attitude that gave the highest score is satisfaction with their financial status despite low monthly income.

Table 2. 7 Component of financial literacy

	Component of financial literacy			
	Financial knowledge	Financial behavior	Financial attitudes	Financial knowledge with risk and return
FSA (2005)	✓	✓	✓	
Van Rooji et al., (2007)	✓	✓	✓	
Delavande et al., (2008)	✓	✓	✓	✓
Gaurav & Singh (2012)	✓	✓	✓	
Almenberg & Dreber (2012)	✓	✓	✓	
Calcagno & Monticone, (2013)	✓	✓	✓	
Ravikumar et al., (2013)	✓	✓	✓	
Adnan et al., (2014)	✓	✓	✓	
OECD (2015)	✓	✓	✓	
Akoto (2017)	✓	✓	✓	
Hasibuan et al., (2017)	✓	✓	✓	
Zakic et al., (2017)	✓	✓	✓	
Kiriwan (2015)	✓	✓	✓	
Bank of Thailand (2016)	✓	✓	✓	
Warawichanee (2017)	✓	✓	✓	
Thammanitayakul & Meungsan (2017)	✓	✓	✓	
Paukmongkol (2017)	✓	✓	✓	
Auepiyachut (2017)	✓	✓	✓	
Benyasriawat (2018)	✓	✓	✓	
Lakkanawanit & Dungtripop (2018)	✓	✓	✓	
Frequency	20	20	20	1

Table 2.7 shows the synthesis of components of financial literacy. There are four theoretical components. This study applies the frequency of components used by scholars (frequency of at least 20). Therefore, just three components are further explored.

Component 1 Financial knowledge

Component 2 Financial behavior

Component 3 Financial attitudes

Figure 2.7 presents the model of financial literacy

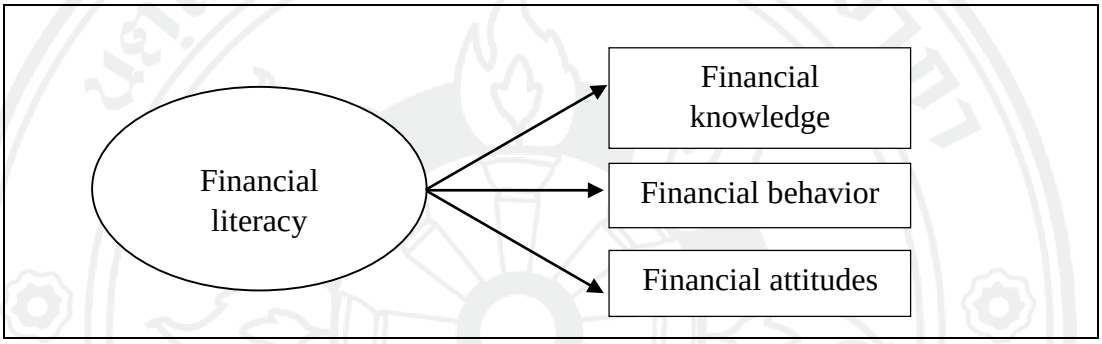


Figure 2. 7 Model of financial literacy

2.5 Concept of Self-Efficacy

Development of self-efficacy

Self-efficacy is a factor to success. Before performing a behavior, a person assesses their own capacity. The assessment of self-efficacy tells whether the person is making any attempt or not and for how long they must go through obstacles and worries. People with high levels of self-efficacy view difficult tasks a challenge rather than a risk to be avoided. These people are active workers who desire to reach success and have long years of work experience more than these with low levels of self-efficacy. The latter try to avoid difficult tasks while showing hesitation in dealing with obstacles. Often, their attempts simply vanish and they just give up on complicated problems (Bandura, 1997). Evans (1997), by believing in self-efficacy and considering feelings, thoughts, motivation and behavior, people with high self-efficacy tend to attain success and a good quality of life. Whenever experiencing laborious problems or tasks, they make them challenges and do their best. Any

failures mean inadequate attempts or a lack of knowledge or skills. On the opposite side, people with low self-efficacy see difficult tasks as a threat and so try to avoid them and give up. If they experience failure, it is because their lack of capability.

Self-efficacy, self-Esteem and VIE Theory have interrelationship.

1. Self – esteem and self-efficacy look the same, but they are not. The difference is self-efficacy looks at ability more than esteem (Beck, 2008). For example, an employee may perceive low levels of self-efficacy while newly employed. This perception, however, produces no effect on self-esteem. For Bandura (1997) and the Triadic Reciprocal Determinism, motivating factors rely on duty, interaction and influence. Nearly all people with high levels of self-efficacy and success in work tend to perceive high levels of self-esteem. However, self-esteem may influence self-efficacy. It is undeniable that people's capacity can be developed through activities that make them proud and valuable. If analyzing these activities, the person develops both self-efficacy and self-esteem. If people feel their self-efficacy, but are not proud of such activities, the outcome may be harmful to society (Bandura, 1997).

2. VIE theory is an expectancy theory based on the belief that people's attempts will lead to fulling duties and subsequent results. Self-efficacy relies on a personal belief in their own capacity to perform specific behaviors. The VIE theory is built upon rewards and motivation. Self-efficacy is grounded in the belief that capacity influences motivation (Bandura, 1997). As explained by Bandura and Wood (1989), people act when they believe in their capacity and expectations to attempt it. Smith and Hitt (2006) say that, in order to succeed, a person must carry essential skills and a positive beliefs in themselves to control factors. Therefore, people with high levels of self-efficacy are likely to repeat attempts (expectation) if the results are still far from achievement. These people will explore more strategies for success. Bandura (1997), adds that people with low levels of self-efficacy who face the same situation may perform poorly because their low self-efficacy causes reducedmotivation and attempts.

Meaning of self-efficacy

Bandura (1986) states that self-efficacy means believing that oneself has the knowledge, skills and attitudes to perform the desired behaviors in order to be successful. If expecting the desired results after performing specific behaviors and if believing in one's own capacity, such behaviors will be successful. If learning that such behaviors will benefit oneself but believing in one's own inadequate capacity to behave that way, one tends to not perform such behaviors.

Berry (1987) defines self-efficacy as a person's ability to deal with their own goals, perceiving that what ability the person has. The person will not give a high value to the expect situations.

Pajares (1996), self-efficacy means the belief of oneself to have the ability to systemize and act systematically to achieve the goals. Accordingly, work performance will be developed and encourage the person to keep trying to reach success.

McShane and Von Glinow (2003) say self-efficacy means believing in one's own ability and motivation to perform behaviors in order to meet the success effectively.

Tella and Ayeni (2006) supports Bandura, arguing that self-efficacy results in persons' different thinking methods, emotions and behaviors. People with low self-efficacy always have stress, worry and low self-esteem. People with high self-efficacy are happy with assignments and have high self-esteem.

Kear (2000) says self-efficacy means the realization of one's own ability that can control and expect results from behaviors. Wisdom, thinking, intention and motivation are involved.

Self-efficacy is the belief in one's own ability to manage and perform behaviors will be met with success. Therefore, people will make decisions about whether to perform such behaviors. People with high self-efficacy often believe that they will achieve success in life.

Sources of self-efficacy

According to Bandura (1986), self-efficacy comes from four factors.

1.Enactive attainment is the most influential factor to self-efficacy. Success by action is a direct experience of a person and the most accurate fact. Repeated

successes from work prompt the person to perceive self-efficacy at the higher degree. They meet both successes and failures. However, some failures mean nothing to them as these failures come from other causes.

2. Vicarious experience means if a person witnesses similar behaviors done by other people that meet success, the person will perceive their own self-efficacy. This happens on the condition that the person must have the ability to do the same as others. If putting an intention and attempt, the person will achieve the success like others.

3. Verbal persuasion is an act of persuading someone to perform a behavior to achieve something. It gives the person a moral support and confidence to perform more behaviors and try harder to achieve things. The person, therefore, feels more self-efficacy. In this situation, the person who takes persuasion should be trustworthy and important, maybe parents, teachers, friends and other influential ones.

4. Physiological state matters to a person's judgment of self-efficacy. Regardless of high or low self-efficacy, the person's perception of self-efficacy relies on the physical condition. In the state of physical arousal by stress, worry, excitement, exhaustion, tiredness, censure and so on, the person will act poorly and feel of low self-efficacy.

Influence of self-efficacy on behavior

Self-efficacy has an influence on behaviors through four processes (Bandura, 1997).

1. Cognitive Processes

Self-efficacy affects a person's cognition that may strengthen or weaken the work performance. How a person believes in their self-efficacy influences the person's interpretation and forecast of situations in the future. People with high level of self-efficacy view situations as opportunities. Successes guide their practices. For people with low level of self-efficacy, they think uncertain circumstances as risks. They often see failures in the future. By perceiving themselves as the incapable, they are destroying their self-motivation and work performance. If still' doubtful about their own abilities, it is uneasy for them to reach any success.

2. Motivation

It is the ability to motivate oneself and act according to the goals. Motivation and successive actions derive from thinking of future situations. This means, thoughts are translated into motivation and action, both are under self-regulation. Mainly, human motivations are grounded on thinking and belief in self-efficacy. People with high level of self-efficacy and goal setting are motivated to perform good jobs than these still in doubt of their self-efficacy.

3. Affective Processes

Affective process is the process that reflects self-control over cognition, emotion and action. As for cognitive domain, self-efficacy influences one's interest and interpretation of real situation negatively and positively, and whether one can control the negative thinking. For action domain, self-efficacy enables a person to control emotions and enforce the acceptable action that changes the emotion-based situation. About emotional domain, a person perceives whether they can control negative emotions or not.

4. Selection Processes

People have a likeliness to step aside activities and situations that look too difficult to handle. People choose actions and situations that they are sure of their capability to handle. People with high level of self-efficacy often choose challenging tasks.

Self-efficacy assessment

According to Bandura (1977), self-efficacy has three dimensions of assessment.

Dimension 1 Magnitude or level

Magnitude refers to how difficult or easy an activity is for a person to perform specific behaviors. If the person believes in their ability to do such activity, the person will do it accordingly.

Dimension 2 Strength

Strength means a person is confident to perform a specific behavior. If believing that is achievable, the person will try their best despite obstacles and difficulties.

Dimension 3 Generality

Generality refers to an ability to apply the successful behaviors or similar situations into the new situations. People assess their own abilities in some situations or activities.

Lee and Bobko (1994) categorize the assessment level into four patterns.

1. Self-efficacy strength is mostly used. This pattern asks respondents how much they can perform the increasingly difficult tasks. It uses confidence rating scale, from No confidence at all (0) to complete confidence (10). Other scales, such as 0-100% are also feasible.

2. Self-efficacy magnitude

The second popular pattern that asks respondents whether they can perform the increasingly difficult tasks or not. The answers are "Yes" and "No", equivalent to 1 and 0 respectively. The higher score means high self-efficacy.

3. Self-efficacy composite

This is a combination of the first two assessments. This pattern has calculation in two ways and is most consistent with Bandura's concept.

4. Self-efficacy strength that uses a single question than asks respondents to rate their confidence level before starting the task. This method is called one-item confidence rating.

Result of self-efficacy

As Bandura (1997) mentioned, self-efficacy yields a direct influence on a person's behaviors. This is reasoned by cognitive process, motivation, emotion and feeling of the person.

1. Choice behavior

Every person needs to make decision all the time and every day. They decide what behaviors they will do, for how long and in which situations. Self-efficacy drives a person to perform or not perform certain behaviors. The person tends to avoid situations difficult to deal with. If believing in self-efficacy to do things, the person will do it accordingly. However, too much self-efficacy can turn things into failures, causing stress in the person. Too low self-efficacy always causes a lack of attempt and determination to do things.

2. Effort expenditure and persistence

Self-efficacy determines how much a person needs to try and how long the determination is required for difficulties and undesirable experiences. In a tough situation, the person with high self-efficacy is active and show attempts for the longer period than these with low self-efficacy. It is likely that people with attempt and determination will accomplish many things.

3. Thought patterns and emotional reaction

Self-efficacy have an influence on thought pattern and emotional reactions of a person while having specific behaviors. It also influences situations in the future. People having high self-efficacy like to try more and perform behaviors carefully. Obstacles make people try much harder. People having low self-efficacy always show negative emotions, such as unhappy, nervous and stressed. They will not do their best and tend to have failed behaviors.

4. Human as producers rather than simply foretellers of behavior

High self-efficacy in people mostly creates attempt in them to perform behaviors and accept results of their behaviors. They opt for challenging tasks that use a lot of attempt for achievement. Despite failures, they neither give up nor simply blame the fate. Rather, these failures will drive them to success. Opposite to these having low self-efficacy, they prefer beliefs or prophecies and wait for successes and failures. They run away from hardship, show no attempt, lack ambition and have a great deal of stress.

Components of self-efficacy

1. Champates, Kangchai, and Rattanachana (2018) studied the role of nurses in application of self-efficacy to older persons with diabetes. There were components of self-efficacy, namely enactive mastery experience, vicarious experience, verbal or social persuasion and physical and emotional condition.

2. Boonsorn and Makmee (2017) studied the development of guideline to promote proactive behaviors in employees of aluminum packaging factories in Chonburi Province: A mixed method. They proposed components of self-efficacy to include personal initiative, proactive personality, taking charge and role breadth self–efficacy.

3. Tuksino and Meesup (2016) studied the model of assessment of required characteristics according to the National Education Standard and development of measurement tool for the attitude of students at basic education level. As summed up by their study, self-efficacy is composed of five components, namely self-confidence, accurate self-evaluation, willingness to take risk, effort expenditure and persistence, and humans as producers rather than simply foretellers of behavior.

4. Jaroenruen, Makme and Kornpetpanee (2013) looked into the confirmatory factor analysis of proactive behaviors in employees of Sub-district Municipality, Chonburi Province. This study examined the consistency of the model with the empirical data or employees. The study released four components that constituted self-efficacy, namely proactive personality, personal initiative, role breadth self–efficacy and responsibility.

5. Armpat, Witchakun and Wichianprapa (2011) studied the relationship between self-efficacy and health behaviors during childbirth of first-time mothers. Their study informed three components of self-efficacy that were magnitude of action, strength or confidence and generality.

Table 2. 8 Component of self-efficacy

Component of self-efficacy	Champates, N., et al (2018)	Boonsorn, P., & Makmee, P. (2017)	Tuksino, P., & Meesup, P. (2016)	Jaroenruen, C., et al (2013)	Armpat, C., et al (2011)	Frequency
1. Proactive personality	✓	✓	✓	✓	✓	5
2. Personal initiative	✓	✓	✓	✓		4
3. Role breadth self–efficacy	✓	✓	✓	✓	✓	5
4. Responsibility	✓	✓	✓	✓	✓	5
5. Humans as producers rather than simply foretellers of behavior.			✓			1
Total	4	4	5	4	3	

In Table 2.8, five theoretical components are identified. However, three are then selected for the model (frequency of at least five).

Component 1 Proactive personality

Component 2 Role breadth self–efficacy

Component 3 Responsibility

The selected three components are presented in the model of self-efficacy in Figure 2.8

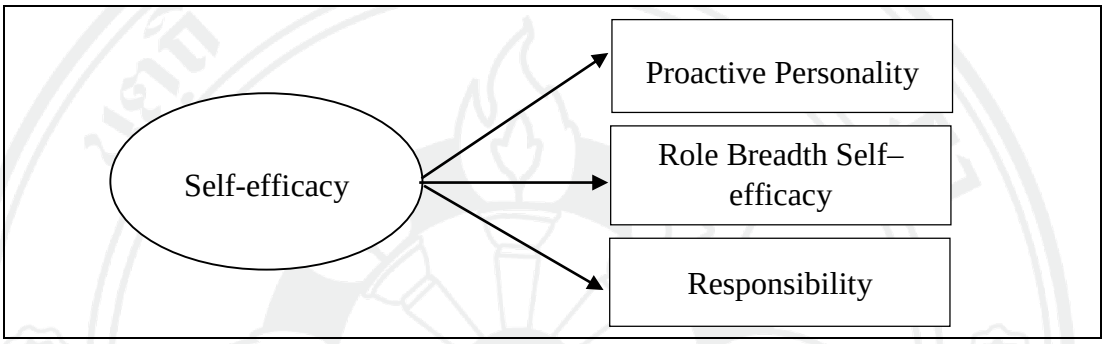


Figure 2. 8 Model of self-efficacy

2.6 Concept of Motivation

Development of concept and theory of motivation

Vroom (1964) and his expectancy theory explain that, in order to motivate a person to do more jobs, we need to understand their cognitive process. When the person shows the willingness to do more, they will think of what they will earn from such actions. Normally, employees work under an expectation that they will gain benefits and remunerations. And so, they try harder, believing that their attempts will lead to some satisfactory outcomes. Motivation is influenced by three factors.

1. Expectancy: E, It is the expectation of people who devote themselves to good works. They have a possibility of success as desired. This expectation-driven approach prompts people to think over whether such works suit their abilities. The greatest expectation means the person should feel of the capability to work at desirable level.

2. Instrumentality: I, It is expectation of outcome after performing an action. People make a forecast on rewards and other results after successes. This is an

expectation of working. By offering a great reward, people feel confident to obtain rewards after success.

3. Valence: V, Valence is the value that a person places on outcomes. People perceive differently about the same outcomes. The value of outcome is a motivation for people to perform specific behaviors.

Vroom's theory of expectancy motivates an individual to have certain behaviors to achieve something. The behavior is a result of motivation and self-efficacy. Motivation relies on the expectation of results after attempt. The value of result can be high varying by individual. If believing in self-efficacy to perform certain behaviors, the individual will put effort into such behaviors aimed at desired results.

Goal-setting theory of motivation developed by Locke (1980) states that motivation of an individual to perform behaviors depends on the desire to achieve goals. Goals are set for a specific period in the future. Goals promote task performance of the individual who will try and seek methods to achieve the goals. Specific and challenging goals can motivate and guide the individual to perform tasks more efficiently. To motivate the desirable behaviors, goals should be neither too easy nor too hard, but suitable for the individual's ability. There are findings that concern characteristics of successful goal setting (Choochom, 2012).

1. Setting specific goals
2. Goals should be challenging
3. An individual should have the capacity and essential resources for goal achievement
4. An individual should receive feedbacks to show their progress toward goal achievement
5. Preparing rewards for individuals who achieve their goals
6. Executive members should give support and take part in goal setting
7. Goal setting will be most efficient if employees accept the set goals.

The major characteristic of goal setting is the individual goal commitment. This means the serious determination of goal achievement (Choochom, 2012). Determination through goals importantly motivate people to perform tasks.

Motivation

Motivation is defined variously

For **Bedeian (1993),** motivation is desire for success.

For **Mondy, Noe and Premeaux (1999),** motivation is the desire to make an effort to attain a goal.

Nahavandi and Malekzadeh (1999) say motivation is a human's behavior control. Motivation derives from desire, pressure and need to achieve a goal. Motivation may be generated naturally or by learning or by intrinsic and extrinsic elements inside the individual.

Kreitner and Kinicki (2007) says motivation is a psychological process that arouses and directs behaviors.

Wu and Griffin (2012) defines motivation as a process from an intrinsic desire and drive.

Robbins and Coulter (2016) defines motivation as a willingness to make a great effort to attain the goal on the condition that such effort can yield satisfaction need by the individual.

If summarizing all meanings, motivation means an attempt to perform assigned tasks willingly for goal achievement. Motivation has the following process.

1. Desire or expectation
2. Behavior
3. Goal
4. Feedback or adjustment

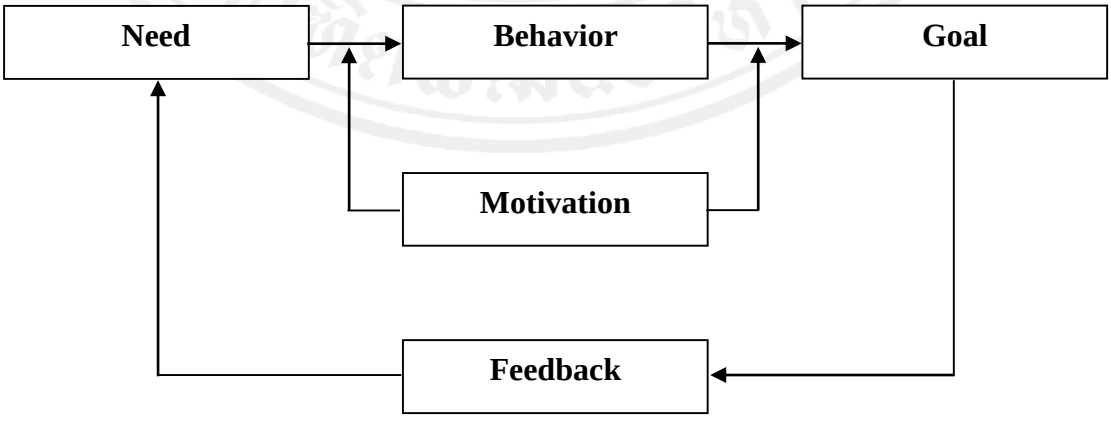


Figure 2. 9 Motivation process

Source: Mongkolvanich, 2013.

Category of motivation

Ryan and Deci (2000) explain the development and psychological internal need which grounds the motivation and person's personality. There are multiple conditions that generate a motivation positively. An individual's behaviors derive from various factors based on experiences and expect results. The individual may have the motivation to perform an action because of external factors. For example, individuals may abide by law. Some may have behaviors because of their determination which is an internal factor. This section is talking about the self-determination theory and its intrinsic motivation and extrinsic motivation.

1. Intrinsic motivation is the act of doing something without any external rewards. The act may not be valued by other people. As stated in the self-determination theory, an intrinsic motivation concerns a support environment that responds to a person's need in three aspects.

1.1 Relatedness refers to belongingness. It is a social relationship that involves in trust, generosity and care socially and mentally.

1.2 Competence is the belief in self-efficacy and efficiency to do difficult or challenging tasks.

1.3 Autonomy means a person can make decision to act. Freedom of decision making contributes toward the development of intrinsic motivation.

2. Extrinsic motivation means an external factor that motivates a person to act. The action responds to external desire and hope for return. The action motivated by external factor may be aimed to flee from mistakes and worries. The person may act to strengthen their ego and obtain an honor. These actions are controlled by social needs and rewards.

Component of motivation

1. Herzberg, Mausner and Snyderman (1959) conducted a research Motivation of Work and introduced their well-known theory "Motivation Maintenance Theory, Dual Factor Theory and Motivation Hygiene Theory" in a publication. Their motivation factors encompassed success, openness, head encouragement, work and responsibility.

2. Alderfer (1969) proposes An Empirical Test of a New Theory of Needs in 1969. Among his findings, he condenses the needs into three categories: Existence needs (E); Relatedness needs (R) and; Growth needs (G). Existence mainly concerns physical and material needs of a human for a decent life and safety. It is a combination of Maslow's physical and safety needs. Relatedness refers to a sense of relationship with some people, which is similar to Maslow's social need. Growth needs is a personal desire to create and develop themselves, also similar to Maslow's need for recognition and success.

3. Deci and Ryan (1990) and their book entitled "Intrinsic motivation and self-determination in Human Behavior" tell intrinsic motivation is a mental process of an individual. It motivates behaviors derived from cognitive process and mind of the individual who has a desire and competency to determine. The simple reward after behaviors represents achievement, self-efficacy and self-differentiation. They identify the motivation factors to include success, openness, head encouragement, work and responsibility.

4. Resnick (1998) views that motivation has a relationship with person, behavior and environment. Her article on "Motivating Older Adults to Perform Functional Activity" in the Journal of Gerontological Nursing identifies persistence and intensity as components of motivation.

5. Carlton and Winsler (1998) is a psychological expert at Southern Illinois University and National Association of School Psychologists. He produces an article "Early Childhood Motivation" and informs the four basic characteristics of motivation. Persistence is continued efforts for a long period of time. Challenge should be appropriate and is a vital characteristic that promotes motivation. Dependency on others increases a chance of and support for motivation. Emotion and feeling lead to motivation.

6. Jaussi and Dionne (2003) summarize motivation components as written in "Leading for Creativity in the Role of Unconventional Leader Behavior" in "The Leadership Quarterly". Intensity, direction, freedom and challenge are components of motivation to achieve goals.

7. Ashkanasy and Cooper (2008) write about intrinsic motivation components in " Research Companion to Emotion in Organizations". There are: Direction set

together with goals; Persistence for a longer period amongst obstacles and non-obstacles and; Intensity means unquestioning devotion.

8. Nicholas (2008) and the book "Introduction to Psychology" detail the intrinsic motivation toward satisfaction in work and related commitment. Intrinsic motivation is visible. Motivation is associated to persons and their organization. There are three factors to motivation. Direction guides work in order to achieve goals. Intensity means unquestioning devotion. Persistence refers to persisted work attempts to go through pleasant and unpleasant moments.

9. Armstrong and Taylor (2009) and "Armstrong's Handbook of Human Resource Management Practice" summarize that an intrinsic motivation is inside an individual. It is a driving force to act without hope for reward. Extrinsic motivation is a consequence of influences outside of an individual. It may be a compliment and reward. Motivation has three components that are: Direction of work; Effort put in work and; Persistence for the long period in struggling with obstacles and non-obstacles.

10. Johns (2016) summarizes the characteristics of motivation in "Organizational Behavior". Intrinsic motivation derives from a person's confidence to act. There are three characteristics: Effort represents an attempt and attentiveness to work; Persistence is patience, hard-work and attempt to work and; Direction should be crystal clear to guide work.

Table 2. 9 Component of motivation to develop financial plan for retirement

Component of motivation	Herzberg, F., et al. (1959)	Alderfer, C. P. (1969)	Deci, E. & Ryan, R. (1990)	Resnick, B. (1998)	Carlton & Winsler (1998)	Jaussi & Dionne (2003)	Ashkanasy & Cooper (2008)	Nicholas, L. (2008)	Armstrong, & Taylor (2009)	Johns, G. (2016)	Frequency
1. Direction and goal						✓	✓	✓	✓	✓	5
2. Persistence				✓	✓		✓	✓	✓	✓	6
3.Intensity				✓		✓	✓	✓			4
4. Head encouragement	✓		✓								2
5. Openness	✓	✓	✓								3

Component of motivation	Herzberg, F., et al. (1959)	Alderfer, C. P. (1969)	Deci, E. & Ryan, R. (1990)	Resnick, B. (1998)	Carlton & Winsler (1998)	Jaussi & Dionne (2003)	Ashkanasy & Cooper (2008)	Nicholas, L. (2008)	Armstrong, & Taylor (2009)	Johns, G. (2016)	Frequency
6. Freedom						✓					1
7. Challenge					✓	✓					2
8. Responsibility	✓		✓								2
9. Field of work	✓		✓								2
10. Success	✓	✓	✓								3
11. Dependency					✓						1
12. Emotion					✓						1
13. Effort									✓	✓	2
14. Social support		✓									1
Total	5	3	5	2	4	4	3	3	3	3	

In Table 2.9, there are 14 theoretical components, however only three components with high frequency (frequency of at least four) are placed in the conceptual framework.

Component 1 Direction and goal

Component 2 Persistence

Component 3 Intensity

In Figure 2.10, the three components help design the model of motivation for retirement financial planning

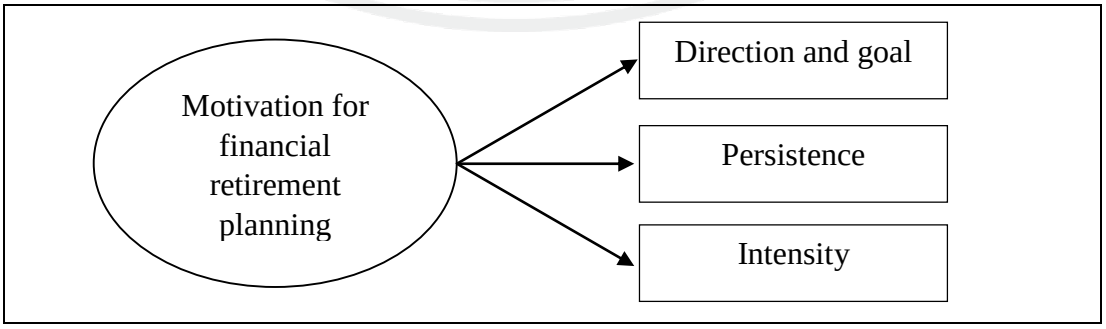


Figure 2. 10 Model of motivation for retirement financial planning

2.7 Concept of Risk

Definition of risk

Khongsawatkiat (2011) says risk means an uncertain chance of situations to happen. There is no way to foresee the situation. Risk is likely to take place in a company.

Akarabaworn and Thamsathitdet (2009) says risk as a situation or action that may take place under an uncertain situation and produce impacts or damages (financial and non-financial) or errors or chance of missing goal attainment of an important project according to the strategy in the company's annual plan.

Klaphachan (2008) describes risk is a chance of something may happen, which is the result of harm. Risk derives from uncertainty. The possibility or result can be measured differently by organization. Risk viewed by the human resources department may be distinct from the production unit and the engineering.

Phromsri (2007) gives four distinct meanings.

1) Risk means an uncertainty, whether results are achievable to goal.

2) Risk means an opportunity or situation that bars an organization to achieve goal.

3) Risk means an action or situation that may yield both positive and negative results to an organization.

4) Risk means employees must not take risk more than the organization can handle. For example, an insurance company may employ another insurance company to take such risk. The employed company is not responsible for the insurance premium that is settled by the hiring company. Hence, the employed company will be responsible for any accidents. In this case, this is called sharing responsibility.

Overall, risk means an opportunity that something or an action or a situation may arise in an uncertain situation and causes damages, failures or less chance of goal attainment.

Form of risk

There are five forms (Joint, 2007; Michalko, Malpas, & Arcolio, 2010).

1. Strategic risk

It is the risk arising out of setting strategies and policies. Strategies should be flexible enough to changes and situations.

2. Operational risk

This kind of risk can take place at every stage, from management, operation, human resources, IT, equipment, premise and other processes that required circumspection.

3. Financial risk

This is a risk-related budget, for example budget management in line with standards.

4. Compliance risk

This is the risk concerning compliance with law and order.

5. Event risk

Unexpected situations that crop up results in risk such as flood that causes closed-down businesses.

Type of risk

Next presents types of risk categorized by Khongsawatkiat (2011).

1. Financial risk

This risk causes damages that are measurable financially such as factory fire. The company makes a calculation of damage arising out of the fire. Damaged properties are assessed and valued into money. To give another example, if a car gets damaged from an accident during delivery, the company can calculate how much the damage costs.

2. Non-Financial risk

Damages from some risks are not measurable. For example, the death of employees in the fire or road accident. There is no calculation for valuing the loss of life. To give another example, some goods are out of stock, not available for sale. Customers subsequently turn to other stores to make purchase of such goods. Unavailability of goods is a non-financial risk for the company.

3. Dynamic risk

This risk is changeable. Customers or consumers always change their taste for technologies and other products, maybe due to economic fluctuation, sales decline and so on. This risk is seen occasionally, unpredictable and without a fixed pattern. Impacts from this risk are diversified.

4. Static risk

It is a risk caused by factors, not the economic fluctuation. For example, a company is facing a risk from staff's corruption.

5. Fundamental risk

Damages from this risk yield impacts on many people such as through earthquake, war, flood, etc. This risk is preventable sometimes, but mostly not. People confront the same degree of this risk.

6. Particular risk

This risk occurs in some population groups. A fire or robbery, for instance, causes damages to the fired or robbed company.

Risk management process

Khongsawatkiat (2011) goes into detail of the process.

1. Objective setting

This is the first stage to manage risk. The company or a person must establish the objectives of risk management. The objective should be based on why risk management is required and what goals are to be reached.

2. Risk identification

The second stage requires the company to identify potential risks to arise. An export company always faces common risks such as unstable exchange rate, threat to transportation, late payment, etc. Each company has different risks, varying by type and size of organization.

3. Risk assessment

Regardless of risk prevention methods, a company should realize about the possibility of risk to utilize the correct method. Each prevention tool comes with certain cost and various utilization.

4. Study of impact

This is the most difficult stage of risk management. The company must assess every risk to find which ones produce significant or insignificant impacts. The risk with huge impacts will be resolved quickly. However, the ones with minimal impacts should not be overlooked. By looking into impacts, the company knows how each risk and its impacts are crucial. This process is helpful for executives' decision making

because risk management sometimes is costly. It may not be worthwhile if the costly risk management is utilized for the risk with insignificant impacts to the company.

5. Risk management planning

This stage suggests planning risk management and implementing the plan. Each company should make a step-by-step plan to manage risk. Prioritizing the most severe risk to be dealt with is a must. There should not be fragmentation of risk management, like making a silo view of risk. Indeed, risk management should exist in the company's overall picture and be implemented altogether.

6. Monitoring and report

It is the process to know what results after risk management and prevention are, whether they are successful and implemented as planned.

7. Assessment and revision of risk management and prevention plan

Following the sixth step, if the plans are not fully implemented, the revision is need to better suit the situation.

Risk Assessment

Risk assessment is the process of identification, analysis and prioritization of risks that have a potential to obstruct the organization's goal achievement. Assessment covers the likelihood and impact, together with considering the degree of severity of damage from risk and the degree of risk. The likelihood and impact of risk have five levels: Intolerable risk substantial risk, moderate risk, tolerable risk and trivial risk (Bangkok University, 2014).

Component of risk of retirement financial planning

1 . Prachumphan, Thaphiranrak and Khrueanamkham (2018)carried out research on influential factors to saving behavior for future expenses of consumers in Bangkok. Factors influencing saving were income and expense with 0.05 statistical significance.

2. Jadesadalug and Nuangplee (2018) undertook research into behaviors and factors influencing saving among elderly persons in Meung, Nonthaburi Province. Risk factors to retirement saving incorporated economic, return and attitudes toward retirement financial planning. First, about economic factor, people has savings from

occupation, such as teacher, vender, employee and civil servant. Some people kept money for daily living separated from saving. Some might have saving after monthly spending. The more money left meant the more saving and vice versa. Saving for retirement usually came from work, remittance from children and extra jobs. The second factor is return. Elderly persons who deposited savings at bank gained interests. However, small interests did not attract deposits for saving at all. They trusted banks to keep their money because of being secured and reliable financial institutions. Some elderly people purchased life insurance for protection and benefits written in a contract. Purchase of life insurance is financial planning that prevented people from risk of unforeseen threats to life, health and properties. It also secured children from home debt, health care costs and guaranteed their education. Elderly people also chose the Government Saving Bank's lottery, like a long-term deposit that allowed withdrawn after a fixed period. Customers received fixed interests and might be lucky at lottery draws every date 16th. The three-year GSB lottery offered lottery draws for three years.

The last example is saving at credit union belong to the organization. Older persons received returns or dividends or interests depending on type of saving. Furthermore, loan is allowed with fair interest rates. Other benefits were welfare such as children's scholarship, allowance for the spouse's death and life insurance. The third factor is attitude to retirement financial planning. All interviewed elderly told similarly that saving is good and easy for everyone. To achieve successful saving, the person must have a good deal of discipline, patience and hard work. They might have small savings at that time. If continuing saving, small money will become huge. In fact, saving facilitated people to design the plan for the present and future. If people spent all money, they will have none left after retirement and this will be the toughest period in old age.

3 . Kohakul (2016) did research into personal financial management and its influence on saving among people in Bangkok and vicinity. Factors powerful for personal financial management are economy and return rate.

4 . Nakseeluang (2014) studied the pattern of saving, saving behavior and factors influencing retirement saving of staff at the head office, Bangkok Bank PLC. The frequency of their saving is four times a year and most saved a minimum of 5,000

baht per month. The average saving years range from one to six years. The popular patterns of saving were fixed saving account and other saving products such as provident fund. The strongest factors to saving were attitude to saving, return rate and economic reason.

5. Channak (2011) proposes factors to saving.

5.1 Income is a key factor to saving. Normally, people earning income have unused money and saving more than these without income. Sources of income vary, maybe from full-time jobs and extra ones.

5.2 Expense is a key to determine the saving capacity. If the income is used for expenses, saving will reduce.

5.3 Investment institution that is reliable and secured persuades consumers to invest their savings.

5.4 Interest rate that is high attracts consumers to reduce payment and increase saving.

5.5 Investment opportunity that yields reasonable returns attracts people to have more savings.

5.6 Tradition plays a role in spending and saving. People use up all their savings for ordination ceremonies, funerals and weddings. Some people are saddled with debts for years because of these events.

6 . Kladkerd (2008) refers to previous studies on factors to saving of individuals. There are factors influencing saving behaviors.

6.1 Income means income after tax. This influences people to save money after they have settled all payments.

6.2 Consumption is a direct factor to saving as saving occurs after the money has been used for consumption. The higher consumption means the lower saving.

6.3 Interest rate is the return rate of deposit in bank. The high interest rate parallels the high return, encouraging more savings at bank and vice versa.

6.4 Price of goods influences saving. If prices are low, people have money remaining after paying bills and can save some money. On the other hand, if prices go high, people's savings decline as they must spend more money.

6 . 5 Number of financial institution's branch have an influence on saving. Convenience encourages people to visit banks and other financial institutions for transaction.

6 . 6 Age affects saving according to the life cycle theory. People in middle adulthood are working age population that have savings more than people in childhood and late adulthood.

6.7 Education has a relationship with saving. People with high education make savings greater than these with low education. Partially, the former has the higher income that enables them to save much money.

6.8 Career makes different income rates and savings.

6.9 Saving goal existed in a person results in the higher saving.

6.10 Advertisement and incentive motivate people to do more savings.

Table 2. 10 Component of risk of retirement financial planning

Component of risk of retirement financial planning	Prachumphan, K., et al. (2018)	Jadesadalug, V., & Nuangplee, T. (2018)	Kohakul, M. (2016)	Nakseeluang, N. (2014)	Channak, B. (2011)	Kladkerd, S. (2008)	Frequency
1. Return rate		✓	✓	✓	✓	✓	5
2. Economic reliability	✓	✓	✓	✓	✓	✓	6
3. Attitude reliability		✓		✓	✓	✓	4
4. Advertisement and incentive						✓	1
Total	1	3	2	3	3	4	

Table 2.10 presents four theoretical components. This study employs three components that are return rate, economic reliability and attitude reliability according to Jadesadalug and Nuangplee (2018).

Component 1 Return rate

Component 2 Economic reliability

Component 3 Attitude reliability

These components are parts of the model of risk of retirement financial planning in Figure 2.11

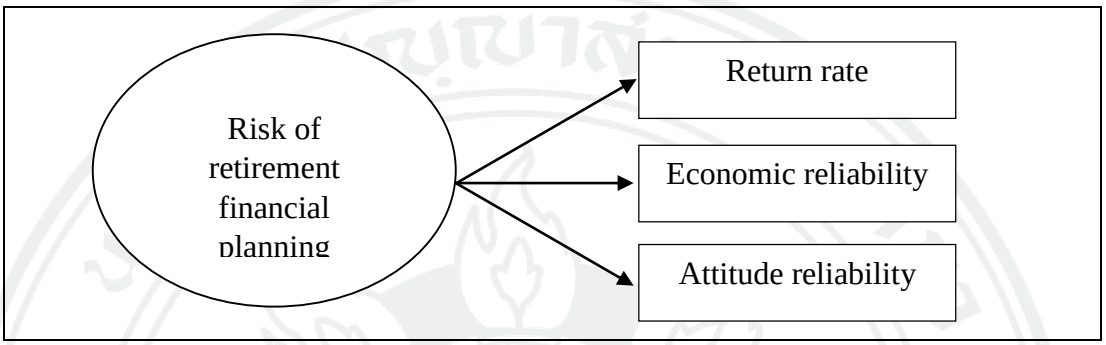


Figure 2. 11 Model of risk of retirement financial planning

2.8 Chapter Summary

The chapter reviewed the literature and theories related to financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning. In the following chapter, research methodology is presented. Confirmatory factor analysis is performed based on these theories and previous studies. In addition, what has obtained from literature review will be developed as conceptual framework and research questions would make hypotheses clearer.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

The study entitled "The Causal Relationships in Financial Literacy, Self-Efficacy, Financial Motivation Planning, Risk in Financial Planning, and Retirement Financial Planning among People Living in the Northeastern Region of Thailand in the Context of an Ageing Society" adopts mixed methods research which integrates both quantitative and qualitative research approaches. Its objectives are 1) to examine the causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society through empirical data performed by confirmatory factor analysis, 2) to analyze causal relationship of financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society by structural equation modelling, and 3) to present policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning targeted at people living in the northeastern region of Thailand in the context of an ageing society. The research results are written and organized into two phases with the following explanation.

Phase 1: Causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society were examined.

Phase 2: Policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society were made.

3.2 Concept of Model

This study applies the concept of 'model' to study of the causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society. Details are as follows.

Definition of Model

The definition of Model is generally either the appearance of thing or the pattern of implementation. The Longman Contemporary English by Procter and Ilson (1981) explains three terms:

1) A small copy of a building, vehicle, machine etc., especially one that can be put together from separate parts.

2) A person or thing that is a perfect example of something good and is therefore worth copying.

3) A type or design of products

According to Stoner and Wankel (1986), a model represents a simulation of the truth of the phenomenon to make it easier for us to understand the complex relationships of that phenomenon.

Raj (1996) defines model in two terms, that is 1) a model is a small copy of the phenomenon of reality expressed with a number of text or images by decreasing the time, making it better to understand the truth of the phenomenon, 2) a model is a representation of using the concept of a specific program. In conclusion, a model is meant a simplified form of phenomena that the proposed model has studied and developed to show or explain the phenomenon to be easier to understand, or in some cases it may take advantage of predicting the phenomenon that will occur, and may be used as a guideline for the next operation.

Good (2005) categorizes the definitions of model into 4 terms: 1) it is an example of something to guide the creation or reproduction of 2) it is as an example for emulators, such as examples in foreign language pronunciation, for students to mimic, etc. 3) This is a three-dimensional chart or figure, representing either something or principle or concept, and 4) it is a set of factors or variables that have a

different relationship, which is combined as a factor, and a social symbol may be written as a mathematical formula or in a language

Thinkexist (2008) defines ‘model’ as the operating system or the plan of a pre-drawn construction, or an agent representing the idea of what will happen in the future or what is pre-prepared.

The definitions of model have been supported by several scholars (e.g. Good, 1973; Keeves, 1988) who provide the explanations in four different characteristics.

1) Refers to exactly what is modeled but is minimized or larger than normal.

2) Refers to what represents the structure of the relevance between a set of factors or variables, or an important element, a relationship or a common reason. To help understand the facts or phenomena in a subject that is demonstrated to organize the ideas of what to communicate to others to understand.

3) Refers to the set of theoretical theory passed the test of validity and reliability can identify and predict the relationship between a variable by mathematical or statistical method.

4) A desirable style, which is either an ideal or a difficult occurrence or a future image.

For this study, the definition 2 and 3 are applied to be a framework in developing financial literacy and retirement planning for population in the northeastern region under the aged society in Thailand according to the research method applying in the analysis of elements.

The type of model

Several scholars, such as Keeves (1988) have categorized model into four types. These are:

1) Analogue Model: A form that uses a parable, a comparable phenomenon, which is a concrete, to create an understanding of the abstract phenomenon.

2) Semantic Model: It is a language format that uses the media to describe or explain the phenomenon that is studied in language. A chart or picture to see the idea structure. Elements and relationships of the elements of the phenomenon.

3) Mathematical Model: It is a form that uses mathematical equations as a medium to express the relationship of various variables. This type of format is commonly used in psychology and education, as well as education management.

4) Causal Model: It is a model developed by the techniques that learn the Path Analysis and Semantic Model by removing the various variants, and the consequences.

Likewise, the study by Joyce and Weil (1985) that categorized the type of model abide by the concept or theory which is fundamental to develop a pattern of coaching. There are four type:

1) Information-Processing Model: It is a teaching model that is based on the ability to process the information of the learners and guidelines for improving the way data is handled more efficiently.

2) Personal Model: The teaching patterns provided in this group give priority to individuals and individual development by focusing on the individual processes that are organized by the human.

3) Social Interaction Model: It is a model that places emphasis on the relationship between individuals and individuals to the society.

4) Behavior Model: It is a group of teaching patterns that use behavioral knowledge, it is primarily to develop an important emphasis model, which is to change the observed behavior of learners rather than to develop psychological structures and behaviors that cannot be observed.

Steiner (1988) classifies model into two terms: 1) practical model or model-of – a copy of physical model such as a car or a plane model; 2) theoretical model or model-for – a pattern that is created from a theoretical-based concept. The theory is not a pattern but supports a creation of a connectively structural form.

Bardo and Hartman (1982), famous ecologists, provide an interesting perspective, which is a concept or fundamental theory in determining the style by which the model is categorized by explaining the characteristics of the city, as a pattern described by the area characteristics and patterns described by the characteristics of the population, the pattern used to explain by the area aims to describe the city's appearance, such as Concentric Zone Model and Social Area Analysis Model, for the patterns described by the population feature, it is a form that

offers ideas to describe the characteristics of the cities of the population, such as Residential Segregation Model and Group location Model.

As a means, there are several models. For this research, the model used as the Semantic model of Keeves (1988), which is a language-oriented model, is a medium of lecture or explaining the phenomenon that is studied to see the concept, which is a concept structure. This refers to the model that explains the causal relationship in financial literacy , self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society.

Characteristics of a good model

Keeves (1988) suggests that the model to use ought to have four requirements as the followings:

1) The model should consist of a structural relationship, rather than an associative relationship.

2) The model should be used as a guideline for predicting the consequences. This can be validated by observation, which is possible to test the basic form of empirical data.

3) The model should be specified or indicative of the rational mechanisms of the subject, so in addition to the form, it is a prediction tool. It should also be used to describe the phenomenon.

4. The model should be a tool to create a new concept and create a new variant relationship that expands the subject of study.

This study interests in characteristics of model as a main idea to develop financial literacy and retirement planning for the population in the region of northeastern in Thailand.

Model Evaluation

Researchers studied concepts related to form assessments by studying the concept of patterns checked by the expert reference method (Connoisseurship Model), which is the concept of Eisner (1976), a pioneer in the concept of project assessment by experts, unlike conventional evaluation models, this assessment focuses on the role

of the assessors without the aim of the assessment. We do not consider any issues or disputes and do not evaluate the project by relying on the project's decision, but an expert assessment on the project or subject, which will be a guideline and assessment. Check out the experts and the criteria that a specialist has established. It is mainly based on the professional experience of the experts (Connoisseurship), in conclusion, assessed by this expert, we accept. The assessment results, because experts have knowledge and expertise in the field, append to the reputation of the specialists, thus making the assessment results a reliable result.

Focus group is also a tool that could collect the data from key informants. Members of focus group were selected based on the criteria regarding direct experiences or being able to provide the required information. In addition, participants in the focus group were characterized by homogeneity. These key informants were invited to participate in focus group in a suitable environment. The number of members ranged between 8-10. Gilmore and Cambell (1996) suggested that the appropriate member of focus group should be between 6-12 persons or 6-9 persons. Grudens-Schuck, Allen and Larson (2004) and Morgan and Scannell (1998) added that size of focus group should have 6-10 members.

This research is conducted based on focus group interview. Evaluation of the draft of policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society is utilized. It would assess the draft’s appropriateness and applicability. The number of experts engaged in focus group interview is over 6 persons to reduce deviation and such numbers were accepted. The draft of policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeast of Thailand in the context of an ageing society consists of the following elements.

1. Justification
2. Objectives
3. Evaluation of the draft of policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and

retirement financial planning among people living in the northeast of Thailand in the context of an ageing society

4. Additional suggestions and comments on the draft of policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeast of Thailand in the context of an ageing society

3.3 Concept of Mixed-Method Research

Meaning of mixed method research

Several scholars have defined the meaning of this research method as the following:

Buason (2011) states that mixed method research Integrates research Methods Formed by the technique of quantitative and qualitative methods come together, study for answers to the research in either step or during the same procedure or use the technique of blending methods. In the same regard, the ongoing research is conducted separately, and the results are summarized together by hoping to receive an answer that is a knowledge of the phenomenon or variable, both wide and deep, or gain a wide range of knowledge.

Thongchumchunwiwat (2013) gives a meaning of the mixed-method research that means the use of quantitative and qualitative techniques to come together, study for answers to the research in either step or during the same process within the subject. The combination for research operations, therefore, is only a technical combination of methods used for defining research problems, setting up research objectives data collection, analysis and summary of data analysis.

Henprasert and Traiwichitkhun (2015) uses quantitative research methods and qualitative research methods to cover the most complete answers to research questions.

Tashakkori and Teddlie (2003) explain that mixed methods approach is a research design that applied the technique to collect and analyze data in a quantitative and qualitative ways.

Creswell and Plano Clark (2011) define that mixed method approach is a methodology integrating several research procedures such as philosophy, research questions, data collection, analyze, interpretation and report.

Creswell (2015a) accents that mixed methods is a research approach that combines both quantitative and qualitative method and elucidates the highlight of the data to answer the research questions.

From the mentioned above. It can be concluded that mixed method research means analyzing or archiving both quantitative and qualitative data, which may occur at the same time or in the first order by the researchers to prioritize the information first, and about the integration of information at one point in the research process.

Characteristics of mixed-method research

Mixed method research includes the combination of quantitative and qualitative data, methods, methodologies, and/or paradigms in a research study or set of related studies, to cross check the answer of the research questions more completely, better a single method. It is under the conviction that this approach is to help limitations of the research methods of each, using advantages of quantitative approach to correct disadvantages of qualitative approach. Whereas applying the benefit of qualitative approach to overcome weak points of quantitative approach. A fulfilment of each approach is to help a deep understanding in answering the research questions with new perspective.

There are several terms to call mixed method research such as mixed methodology, mixed methods, mixed research, which are used varyingly by the perspective of researchers. It is however similar when considering its meanings. Integration of quantitative and qualitative techniques to design research process is a blend of philosophy of positivism and phenomenalism which is called pragmatist. The belief of this concept is that accepting a nature of reality is of two concepts following the concepts of two groups of philosophers. This study we use the term of the mixed method research.

The importance of mixed-method research

Traimongkolkun and Chatraphorn (2012) said the importance the mixed methods as the following:

1) The findings from mix-method research is used in support each other, explaining one another findings of another approach. The answer of research questions will be clearer than using just single approach.

2) The findings of one method could apply to another or address further research questions

3) Both quantitative and qualitative approach itself is advantage that we can apply it to investigate reality more accurately.

4) Both quantitative and qualitative approach is disadvantage itself, we can apply the advantage of each to overcome the weak points of each approach

5) By-product of mixed method research can be used for expanding a completed knowledge and reality to improve theories or implication.

Mixed method research is very important, because it integrates both qualitative and quantitative approach to reduce their limitations.

Advantages and limitation of mixed-method research

In principle, mixed method approach is a correction of the drawback of each approach by appending the strong points. The aims of mixed approach are categorized into five items (Traimongkolkun & Chatraphorn, 2012) as the followings:

1) To verify consistency of data, triangular method.

2) To explore such issues thoroughly, gaining data to support overall

3) To employ continually research report such as quantitative data from overall investigation is used be as fundamentals to investigate in-depth as the qualitative approach.

4) To examine controversy findings that may be an interesting issue, or unexpected findings.

5) To expand the width and depth of the research

5.1) To study in complex issues or situations where a single point of view makes a summary, only part of that issue or situation may cause the researcher to interpret the discrepancy until significant negative consequences.

5.2) To study a causal relationship, but cannot use a strong experimental form, the conclusion of a lack of density is not possible. This is evident in the class of experimental research, which studies the effect of innovative

management learning using a single group of experiments and measuring comparisons before and after trials. In such cases, there is a discrepancy in the accuracy of the research summary, but if the teacher Researchers have used several studies, such as observing behavioral interviews, talking to students. Studying the background of learners, as a result, the teachers will clearly explain why the innovations that experiment are effective with the fact that they support the conclusion of more weight

5.3) To find an answer on a particular subject. In any social or professional event, the findings may be used as an indication or lead to an end of the conflict.

5.4) When a researcher is unsure whether to reference a single method, it will get actual information because the data provider may obscure or provide superficial answers. In such cases, it is often found in some research that is sensitive to the sense of data providers.

5.5) When a researcher needs a wide-dimensional discovery and a deep image, it sees that survey research makes it possible to answer the questions in a wide view of the place where it is, but does not reflect in-depth reality, like a specific education case. On the other hand, a specific study that provides context-specific information is not wide, so it is a limitation that the research does not complete all dimensions.

However, aside from the benefits of such Integrates research has some limitations that may be a hindrance to an application. The head of research requires knowledge and experience in both quantitative and qualitative research, in principle. Otherwise, the research is not as strong as it should.

Mixed method research takes time and resources to store and analyze data in quantities rather than just one-sided or qualitative research. Therefore, research projects that are defined with time and budget are therefore not able to use any combination strategy, except for the use of certain supplementary information, and may be used as a popular combination of the research, as it is used to understand, or use it in a simple way, such as quantitative researchers. Quality with a superficial interview or a qualitative researcher carefully selected the sample by the statistics, without considering the appropriate guidelines, or even claiming to use a blended approach to ensure weight publication, so that the design of the research is integrated.

The researchers should consider the limitations and conduct research according to the purposes.

Mixed-method research design

The design of the mixed method research can be done in a variety of levels, including a mild mixture. Traimongkolkun and Chatraphorn (2012) distinguish the combination of the two levels:

1) Mixing at data level

Qualitative researchers are accustomed to the use of three techniques. The aim is to enhance the accuracy of research by reducing bias or aberration caused by single source or single-point data. In the latter phase, quantitative researchers pay attention to three techniques to make Therefore, in mixed method research, it emphasizes the use of quantitative and qualitative information together to support or monitor each other. For example, in the assessment of educational projects. The researchers may use both quantitative and qualitative information to analyze together, such as the achievement of the school's data. Collection of student files Score from a set of metrics that teachers provide information from studying individual cases and information from observing behavior in and out of student and teacher classes, and so on. Mixing at the data level solves the limitations of research in the following two main points:

1.1) To solve the limits of bias the data from a single aspect may be limited by the fact that at some point of all (slices of reality), the researchers concluded the discrepancies. Mixed research helps to enhance the research of the researchers by bringing information to or from each other in research. For example, if the data received by submitting a questionnaire to explore a large sample is consistent with an in-depth education data from a specific sample, it allows researchers to interpret and post more confidently. In addition, data from observation in the event of an example may help researchers explain the phenomenon that the study is deeply studied.

1.2) To eliminate the adherence of the original methods which are weak researchers may adhere to their own research methods in a strong way and deny other methods. The reason for this could be because of familiarity. Regarding trained aptitude or experience, sometimes, researchers have used the tools/methods to collect

information as they are used to, or as more convenient, to use appropriately according to the criteria that should be, for example, the use of today's most prevalent attitude instruments. The user is careful not to be aware of the culture-bound or time-bound, thus may result in sagging research on the accuracy.

Mixing at the data level is an integrated research in the initial stages in which each of the researchers is easily accepted. The obvious example is the operational research, which values the use of various data at the level of analysis of the problem, to analyze and reflect performance. However, the researchers choose what kind of information is the primary. What types of information are complementary, different to their original base?

In addition to the primary purpose of sharing quantitative and qualitative information to compare or verify information on a particular issue, researchers can also take advantage of the other aspects, such as: 1) a quantitative and qualitative data that is analyzed by group categories. Distribute the frequency of each subject that appears in the data. Compare two sets of data to see consistency 2) to ensure quantitative data for qualitative data, remove the quantitative data from the query to analyze the element (Factor Analysis). According to the statistical method. This can be compared to the subject from qualitative data and 3) mixing data to find new variables, define variables from the theoretical concept. In the quantitative research section, considering in conjunction with a group of subjects or "variables" that are formed by qualitative research may lead to increased variables.

2) Mixing at strategic level

Complex levels of mixing involve crossing a research idea, in which "diverse aspects" are provided by a research design that uses a quantitative and quantitative research strategy. The quality to support each other can provide a wide range of information, holistic, or in-depth, an issue that researchers must consider in how does a strategy-level mix: 1) weigh with quantitative methods and qualitative methods? What is the primary method of supplementation?: 2) How to research both parallel to each other, or to separate the steps, and 3) is a sequence of steps, in which three of these issues are based on the research that needs an answer. The design of research provides various elements, connect and support each other in response to a research solution to ensure overall validity.

Creswell (2015b) offers three integrated research strategies:

Strategy 1: Two – phase design

This form of research is a prominent research conducted in two distinct phases, with different research methods (quantitative research and qualitative research) and presented two findings of each episode. Answering to different research questions, but helping to meet the requirements, such as complex operational research, may be conducted in 2 phases, with a qualitative research approach to fully understand the situation. Later, in the second phase, researchers used data from qualitative research to plan the practice of performing a collaborative experiment with the target audience to focus on the changes. In conclusion, the results of the research project are reflected overall research.

Strategy 2: Dominant – less dominant design

This form is a research conducted in one of the main research methods, such as primarily using quantitative research and using certain methods of qualitative research to complement such in order to verify or increase the depth of information, or on the other hand, the use of qualitative research is primarily supplemented with quantitative research McMillan and Schumacher (2001) classified into two types:

1) Explanatory design

This form is most common as research begins with quantitative research and is followed by qualitative research to understand the meaning of quantitative research more clearly.

1.1) It helps follow a different sample of the group (Outliners), different from these found in quantitative research. It leads to a qualitative study to understand this group and bring it to the supplement in explaining the outcome;

1.2) This helps explain the increase in quantitative analysis results, such as from a large sample survey in the first step. Researchers select a sample according to the criteria to make an in-depth interview to bring the findings to a deeper understanding.

2) Exploratory design

2.1) It is the use of early qualitative research to understand the findings clearly or to provide preliminary information for a quantitative research plan which is the main step to be effective.

2.2) To build research tools to drill down several audiences to get the data into a framework to create your next survey query.

2.3) To create variable group variables. Some of the characteristics that are found to be critical in qualitative research, such as social status, may be a group variable in quantitative research.

2.4) To keep track of different groups. A sample case that differs from the quality of the data. It can be further explored in quantity by defining random sample groups according to the different features.

An example of a leading research model – this secondary used in Thailand, namely, EDFR Research (Ethnographic Delphi Futures Research), is one of the techniques of future research (Poolpatchewin, 2001). It is used as the first method of storage from a group of experts in qualitative ways, including in-depth interviews with surveys from the original group of experts, which are the techniques of quantifiable research. Incidentally, it is noted that the classification of the research is such a secondary lead against a group of qualitative researchers, because qualitative research is often used as an auxiliary method. It is a division of the polarity and the power of quantitative research over quality research, which is an issue that has already been discussed initially.

Strategy 3: Integrated approach

This is a truly cross-based research because it combines macro and micro level. This type of research is referred to as a hybrid, which is difficult because it requires a combination of all stages of research from the presentation of the problem. To the conclusion of the research, some of the steps may not be fully integrated with the limitations of different types of ideas between qualitative research and quantitative research. If the researchers have an understanding and experience they come first.

From 3 strategies highlighted above, Creswell (2015b) suggested as the following:

Pattern 1 - Two-stage - is a form that a group of researchers can work together by being able to act independently according to their approach at each stage of research and co-operation. Together, a summary of the findings to link both episodes together.

Pattern 2 - Leading-secondary- is simple and suitable for researchers in general with their specific guidelines. It can be used as a primary method and supplemented by another method.

Pattern 3 – Integrated - is most difficult to perform, because if you use different researchers to work together, it is difficult to find a common point of interest. And if you use the same group of researchers, there must be researchers who have knowledge in both quantitative and qualitative research approaches. It combines both research approaches appropriately and is fully beneficial to the research.

For this research, we designed a mixed method research according to Creswell's concept (2015), incorporating a method in the Strategy 1 (two-phase design). This research focuses on the causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society. For quantitative method, we used the confirmatory factor analysis to confirm the indicator and the financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society. For qualitative approach, we used a qualified group of conversational techniques, focus group interview to examine a policy recommendation, financial literacy, self-efficacy, financial planning motivation, risk in financial planning and financial planning for retirement.

3.4 Concept of Confirmatory Factor Analysis: CFA

Researchers have now begun to use a confirmatory factor analysis or CFA instead of analyzing an exploratory factor analysis: EFA, as EFA has a wide range of analysis methods and has inconsistent analysis results. In addition, the EFA also has a strict and rigorous preliminary agreement, such as the preliminary agreement that all the variables are observed as a result of every combined composition. The part that is the discrepancy of the variable is not related, including the element scale that is created. Translation of the meanings is difficult. CFA is an analysis of the elements that are improving the weaknesses of the survey element analysis. Almost all EFA, the preliminary agreement of CFA is more straightforward than in analyzing the EFA.

Researchers must have the theoretical support to determine the mandatory conditions (Constraints), which are used to analyze the composition weight and when the analysis results have been inspected in accordance with the theoretical model with empirical information. The structure of the model is also inspected as there is a difference between several sample groups. The purpose of using CFA have three aspects: first, researchers use CFA techniques to check the theory for the analysis of elements; secondly, use it to explore and identify elements; and thirdly, use as a tool to create new variables.

CFA is characterized by five distinct advantages over EFA techniques (Wiratchai, 2005): 1) CFA offers a relaxed, preliminary agreement and preliminary agreements in accordance with the actual conditions rather than EFA; 2) CFA is an analysis of data with a theoretical base, the analysis and analysis results are easier to interpret EFA; 3) CFA has a clear process of detecting the model's identity; 4) Data analysis results provide an estimate of the parameters as well as the significant test results of the parameters; and 5) From all the highlights, CFA is an instrument that is used to study the quality of the measurements as well.

In addition, there are three ways to summarize the tradeoffs of CFA: 1) the estimation of the parameter uses a repeating calculation process and when the analysis results of the harmony function are minimal. There may also be a problem that may still have a different harmonious function; 2) the parameters provided by CFA may be outside the range that should be calculated coefficient may have more than one value, and the variance has a negative value. These issues may be caused by incorrect configuration of the model specification. The distribution of the observed variable is not normal, the size of the sample is too small, and the model is almost well identifiable enough; and 3) the analysis is quite complex and takes quite a long time to analyze.

For the final weakness. The provider has developed a default configuration of the parameters, which can save a lot of time computing (Wiratchai, 2005).

This study uses CFA to analyze financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing

society. This analysis is done with the LISREL program and the procedure (Angsuchoti, Vichitwanna, & Phinyophanuwat, 2011) as follows:

1. Review the theory of variable relation
2. Model Conceptualization
3. Factor Diagram Construction
4. Model Specification
5. Model Identification
6. Parameter Estimate
7. Assessment of Model Fit
8. Model Modification
9. Model Cross-Validation

CFA approves that the theoretical information is consistent with empirical data (data collected from the sample). In other words, the information received by reviewing the theoretical related literature is accurate according to these elements and is consistent with the phenomenon that is present as well as the research that the researchers have used to analyze the analytical elements. This analysis is to confirm the financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society, where the researchers gathered from documents with current empirical data. The analysis of the affirmative elements will be aware that the financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society. What elements correspond to the current phenomenon, are indicated by the harmonious index to determine the harmony of indicators and theoretical elements, financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society, where researchers developed with in this research, these who have researched the use of the index of the chi square (χ^2/df), the relative square of the mean, the root mean square error of approximation: RMSEA), the standard root mean square residual: SRMR, normed fit index: NFI), a complete measurement index that represents the amount of variance and variance described by the model

(Goodness of Fit: GFI) and the absolute compliance index shown. The amount of variance and variance described by the sophisticated modeling model (Parsimony Goodness of Fit: PGFI) is a model's Harmony checker.

3.5 Hypotheses and Conceptual Framework

Risk in financial planning with self-efficacy and retirement planning

Risk in financial planning was perceived as risks associated with investment, profitability, and loss. In fact, it was involved in various financial aspects of decision making. Risk was part of financial planning and could be characterized positively and negatively. For positive risks, stocks were riskier than bonds, and the rates of return and expectation were greater than those of bonds. If not, investors would only make their investments in bonds. However, individuals accepted risks since they had expected they would receive higher rates of return. On the contrary, negative risks referred to the factors beyond individuals' control. Examples of negative risk included economic risk, long-term risk, liquidity risk, inflation risk, and risk in life incidents (Swedroe, 2012). Keereeta (2020) suggested that there were factors affecting individuals' financial position: external and internal. External factors were uncontrollable and could have impacts on all people, for example, economic problems, war, protests, political problems, natural disasters, virus infection, and epidemic. Those problems affected people's financial position at some degrees, for instance, decreased income, lack of income, jobless, or business loss. In contrast, internal factors were controllable and personal that individuals could direct. They were positive factors that allowed individuals' financial status to be stable and wealthy in their current and future states. Examples of internal factor were expense and debt management, saving discipline, risk prevention planning, and further investment. Moreover, internal factors could be negative. Examples of negative factor included extravagant spending, too many debts, investments without having knowledge, and gambling. These were a leak of saving that must be avoided. Nakseeluang (2014) and Jadesadalug and Nuangplee (2018) found the factors influencing retirement planning. Those factors were economy, the rates of return, and attitude toward retirement planning. For economic factor, savings were obtained through individuals' employment. Some allocated their income proportionately and

some people made their savings from leftover cash. The more their leftover cash was, the higher saving they gained and vice versa. For the factor of rate of return, individuals who made deposits at a bank would probably get low-savings interest rates and it was not a motivating factor to make savings with the bank. Nevertheless, because financial institutions were secure and reliable, people still made their savings with them. In addition, life insurance was a kind of savings that individuals expected to gain the benefits from insurance policy. It was another kind of financial planning to prevent potential risks of individuals, including their health and unexpected incidents. For attitude toward retirement planning, it was found that all individuals said that saving was good and useful. Anyone could do it, but they must be self-discipline, patient, and perseverant in their savings. With continuous saving behavior, small amount of money could turn into a large sum. Besides, saving also helped individuals to plan for their current and future life. With these supports, the research hypothesis could be written as the following.

H_1: *Risk in financial planning has a positive direct effect on self-efficacy.*
H_2: *Risk in financial planning has a positive direct effect on retirement planning.*

Financial literacy with self-efficacy and retirement planning.

Kiriwan (2015) examined the relationship between financial literacy and retirement savings and concluded that measurement of financial literacy covered three aspects: financial attitude, financial behavior, and financial knowledge. The results also demonstrated that demographic factor determined differences of financial literacy among the samples. A higher level of financial literacy increased a chance of more retirement savings. Additionally, the samples lacked financial knowledge. Such results were in line with the study by Gathergood and Weber (2014) found that behavior of financial decision making is dependent upon the management of self-control. Individuals who possessed financial knowledge and literacy were more likely to have a savings behavior and make a sound financial decision. Auepiyachut (2017) explored financial knowledge in terms of determinants and effects on saving behavior among housewives. The findings revealed that housewives had a low level of basic financial knowledge, a moderate level of financial behavior, and positive financial

attitude. Moreover, demographic factor influenced financial literacy, and an increasing level of financial literacy created more savings.

Brown and Taylor (2016) surveyed the 11 – 15 – year – old children in the UK household. The UK parents discussed financial and savings issues with their children, which triggered the development of financial knowledge and literacy. In addition, it is found from the survey that such discussion is positively related to children 'savings behavior.

Farrell, Fry and Risse (2016) said that policy is a field of the study that financial knowledge and literacy were applied to promote financial education. However, personal financial management required a longer period of time than financial knowledge and literacy. It is believed that any decisions must come from self-confidence which is psychologically known as self-efficacy. The results of the research carried out by Farrell et al. (2016) indicated that perception of financial self-efficacy could be used to explain its influence on personal financial behavior. Moreover, individuals who perceived their self-efficacy at a high level tended to make savings and sound financial decisions. In contrast, these with the perceived self-efficacy at a low level would make decisions on financial products, for example, bonds. In conclusion, financial self-efficacy is positively associated with financial literacy.

Ismail et al. (2017) examined financial behavior of workers in Malaysia and points out that human resources served as essential source of the country's economic development. Population with higher self-efficacy will have positive financial behavior and could respond to any challenges, particularly financial matters. Even though perception of financial self-efficacy has not been explored by means of the financial self-efficacy scale (FSES) in Malaysia, it is found that financial knowledge and literacy were significant to financial behavior. It is life skills that all individuals should possess. Therefore, the hypothesis is written as the following.

H_3: *Financial literacy has a positive direct effect on self- efficacy.*

H_4: *Financial literacy has a positive direct effect on retirement planning.*

Financial planning motivation with self-efficacy and retirement planning.

Self-efficacy theory is introduced by Bandura (1977, 1986, 1997) proposing the definition of motivation as individuals' ability to motivate themselves and be determined to achieve a goal. It originated from thinking process. While an individual anticipated his/her future, motivation and behavioral control occurred. That is, what he/she thought will be turned into motivation, and their actions were controlled by self-regulation. Human's motivation arose from thoughts and beliefs in their self-efficacy, which plays an important role in thinking process. Thinking process is a foundation of motivation. People who perceived their self-efficacy at a high level were motivated to perform a behavior in question better than these who has doubts about their self-efficacy. Consequently, perceived self-efficacy has a positive relationship with motivation and behavior that would, subsequently, lead to behavior change.

Gist and Mitchell (1992) mentioned that failures at work could possibly be a result of perceived self-efficacy at a low level. Perceived self-efficacy is an evaluation of related self-ability that could trigger thought and motivation to accomplish these works.

Bandura and Wood (1989) confirms that self-efficacy has a relationship with feelings, motivation, and self-control. They also suggested that a low level of perceived self-efficacy may lead individuals to potential failure rather than possible success. Furthermore, there is a study that shows that perceived self-efficacy influenced behavior and attitude in relation to ambition, determination, and effectiveness (Gist, 1987). It can be applied to personal financial management.

The study results by Komenjumrus (2013) found that the most important motivation or goal of savings was savings for future capital, emergency expenses, old age, fixed-asset purchase, car purchase, gold and ornaments purchase, tax deduction, collateral for loan, and savings interest, respectively. The study results by Bilamas and Chotikumchorn (2014) indicated that value of household assets was correlated with savings at the statistical significance. In other words, people with ownership of more pieces of land would feel that they were wealthy. A sense of more ownership motivated individuals to have additional pieces of land. Land was a factor of production, and when farmers had many pieces of land, they could expand their

plantation that would generate more incomes. With many pieces of land, farmers were encouraged to make more savings. With these supports, the hypothesis could be formulated as follows:

H_5: *Financial planning motivation has a positive direct effect on self- efficacy.*
H_6: *Financial planning motivation has a positive effect on retirement planning.*

Perceived self-efficacy with retirement planning.

Bandura (1977, 1986, 1997) defined perceived self-efficacy as individuals' belief that will lead to an achievement. Self-efficacy plays a significant role; that is, it is a challenge. It is also discussed in Bandura 'social cognitive theory. Bandura (1997) believed that individuals with a high level of perceived self-efficacy were confident and more likely to accept and be ready for any challenges. Consequently, it is possible for them to be successful.

It is also in line with the concepts developed by Park and Folkman (1997) adding that people with highly perceived self-efficacy tended to be more successful than these with a low level of perceived self-efficacy, particularly in undesired situations.

In addition, the financial self-efficacy scale (FSES) is a measure developed to understand psychological process that affected the ability to achieve financial goals. Therefore, it is necessary to conduct a research to define the relationship between perceived financial literacy and problem-solving skills to cope with financial challenges and stress. For instance, a study on health and exercise indicated that perceived self-efficacy could promote health behavior among the elderly (Grembowski et al., 1993). It is necessary to have a similar research that helps formulate an efficient strategy of promoting a higher level of perceived financial efficacy (Schuchardt et al., 2009). The promotion of financial efficacy at a higher level to American people required longer time than the delivery of education program (Hira, 2010).

Neymotin (2010) stated that self-esteem is strongly correlated to decision making on financial planning, which is corresponding to the study by Farrell et al. (2016). The study reveal that any decision making came from self-confidence or,

psychologically speaking, self-efficacy. Perceived self-efficacy plays an important role in explaining individuals' financial behavior.

Brown and Taylor (2016) conducted a UK household survey of 11 to 15 – year – old children behavior, pointing out that the support from family or an important person could influence these children's financial decision making. Although parent behavior did not seemingly have any impacts on their children 'savings behavior, it did affect their long – term financial behavior. In other words, their financial behavior and decision making will be seen when they become adult. Therefore, the hypothesis is written as the following.

H_7: *Self-efficacy has a positive direct effect on retirement planning.*

Research Conceptual Framework

In sum, considering the previous research findings in this chapter. As written in the objective, this study explores influential factors to retirement financial planning of people in the Northeastern Region. Figure 3.1 is research framework that will firstly examine the influence of self-efficacy on retirement financial planning, and the influence of financial literacy, risk of financial planning and motivation to financial planning on self-efficacy, and the influence of financial literacy, risk of financial planning and motivation to financial planning on retirement financial planning.

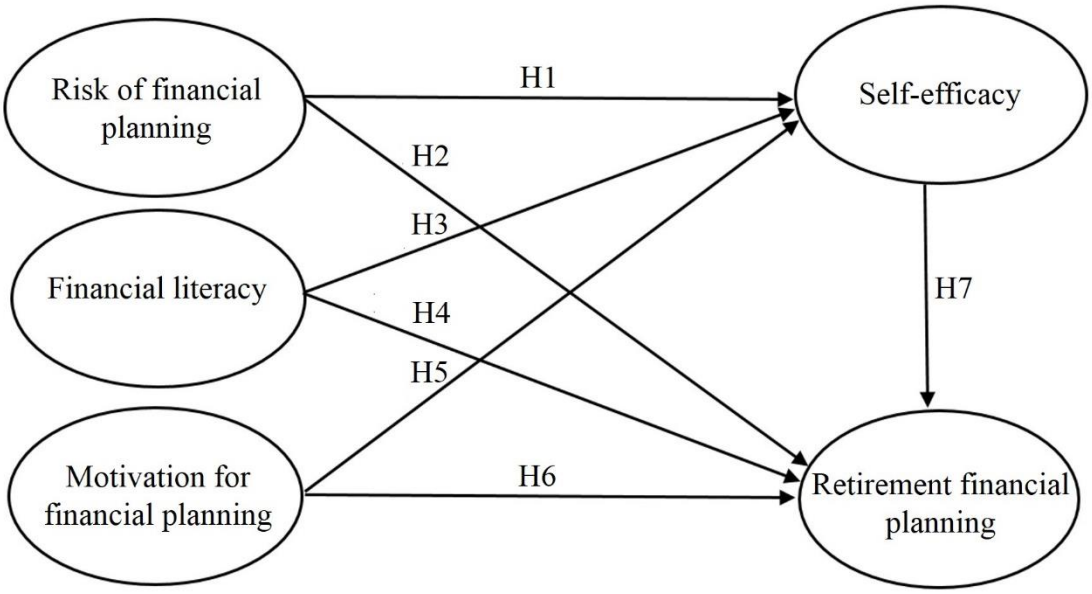


Figure 3. 1 Research Conceptual Framework

3.6 Research Design

For this research, we designed a mixed method research according to Creswell's concept (2015), incorporating a method in the Strategy 1 (two-phase design). This research focuses on the causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society. For quantitative method, we used the confirmatory factor analysis to confirm the indicator and the financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society . For qualitative approach, we used a qualified group of conversational techniques, focus group interview to examine a policy recommendation, financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning.

Phase 1: The study on the causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society divided the target population into two groups.

1.1 Preliminary study: documents, principles, concepts, theories, and previous studies related to financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning were reviewed to derive the components of financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning.

1.2 Concepts, theories, and previous studies in relation to financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning were applied to define the question items that will be appeared in a questionnaire about financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning. The questionnaire is used to collect the required data afterwards. The population in this research is targeted as the following.

1.3 Financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning were the constructs that will be

analyzed by first order confirmatory and the confirmatory factor analysis will be the second order confirmatory to review the construct validity of the model by the LISREL statistical program.

1.4 The model fit of causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society is analyzed by the structural equation modelling (SEM) to test the fit between theoretical model and empirical model. Also, the relationships among causal variables including direct effects and indirect effects were analyzed.

Phase 2: Policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society were made.

Focus group is selected and conducted with 9 experts (Anderson, 1990; Denscombe, 2007; Morgan, 1997; Patton, 2002; Ritchie & Lewis, 2003; Stewart & Shamdasani, 1990) to review the draft of the policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in retirement planning and retirement financial planning among people in the northeast of Thailand in the context of an ageing society. The criteria used for selection of the experts were obtained from Gilmore and Cambell (1996) suggesting that the number of members in the focus group should be 6 – 12 persons or 6 – 9 persons, which corresponded to the suggestions by Grudens-Schuck, Allen and Larson (2004). Morgan and Scannell (1998) stated that the size of focus group should be 6 – 10 persons.

3.7 Population and Target Group

Population

According to the 2016 survey of financial literacy conducted by the Bank of Thailand (BOT), the Thai population with a low level of financial literacy is Generation Z. The survey reveal that Generation Z lack a foundation of financial knowledge. The group does not realize the importance of setting the long-term financial goal. Instead, once they earn an income, Generation Z will spend it. They do not think about savings and when they do, it will be inappropriate. Furthermore, they

do not compare prices before making purchases as well showing a lack of self-restraint. Based on the results of the 2016 survey, the population of this research will be generation Y and over (people who were born before 1997 or aged over 23 years). Therefore, the population will be working population aged between 25 and 59 years living in certain provinces in the northeastern region of Thailand. This research do not cover all provinces in the northeast of Thailand or the whole country. With reference to the 2016 survey of financial literacy by the Bank of Thailand, the results show that people living in the northeastern region have the lowest financial literacy on average. The provinces in the northeastern region with the lowest financial literacy are Buriram, Loei, Nakhon Phanom, Udon Thani, and Surin with the total of 3,933,522 population (National Statistical Office of Thailand, 2017a).

Target group

The samples employed in this research are workers aged between 25 and 59 years who lived in the northeastern region of Thailand. These samples live in some provinces in the northeast of Thailand. This research do not cover all provinces of the northeast. The samples are drawn from the results of survey of financial literacy carried out by the Bank of Thailand. According to the 2016 survey, the provinces with the lowest financial literacy includes Buriram, Loei, Nakhon Phanom, Udon Thani, and Surin. An appropriate size of samples is taken into consideration along with the structural equation modelling (SEM). The number of samples suitable for this research is based on Hair et al. (1995) who suggests that an appropriate number should range between 200 and 300. Moreover, Boomsma (1983) added that the suitable sample size is 400. Comrey & Lee (1992) and Hair et al. (2010) also suggest that a proper samples sizes should be 10 – 20 times greater than the observed variables of a study. In this research, there are 46 observed variables; therefore, an appropriate sample size is 460 which is derived from multiplying 46 observed variables by 10. In total, 460 samples are deemed to be the minimum size that could be appropriately analyzed by structural equation modelling. As a result, the minimum sample size in this research is 460. Probability sampling is also adopted and multi-stage random sampling applied. First, proportional sampling is utilized by selecting

the working population aged 25 – 59 years. Subsequently, accidental sampling is applied to obtain 460 samples.

Target group selection

The probability sampling and its multi-stage random sampling decide the sampled people based on the proportional sampling conducted by the National Statistical Office of Thailand (2017). Five selected provinces, namely Buriram, Loei, Nakhon Panom, Udon Thani and Surin, and studied population are presented in Table 3.1.

Table 3. 1 Proportion of population and target group

Northeastern province	Population	Percent	Target group
1. Buriram	1,047,256	26.60	122
2. Loei	418,678	10.60	49
3. Nakhon Panom	484,425	12.30	57
4. Udon Thani	1,068,508	27.30	125
5. Surin	914,655	23.30	107
Total	3,933,522	100.00	460

Following the above sampling, this study employed the accidental sampling technique and the use of quota to obtain 460 sampled people representing each province.

1) 122 people in Buriram

2) 49 people in Loei

3) 57 people in Nakhon Panom

4) 125 people in Udon Thani

5) 107 people in Surin

A total of 460 questionnaires were used.

3.8 Research Instrument Development

Development and validity of research tool

Development, validity and reliability of the questionnaire follow the academic standard detailed next.

1. Development of questionnaire

In Phase 1, this study uses a questionnaire in order to find out data regarding financial concepts and theories. These provide information to develop hypotheses as detailed in Table 3.2.

Table 3. 2 Conceptual foundation of questionnaire design

Factor	Question	Reference
Financial literacy	<u>Financial knowledge</u> 1. Supposing that you have five siblings (including yourself) and you receive 1,000 baht. You must distribute this money to yourself and your siblings equally. How much will each of you receive? 2. Supposing that you borrow 100 baht from your friend today. Your friend asks you to pay back 120 baht in the next one year. Do you know how much the interest is? 3. Supposing that you make a deposit of 100 baht into your saving account that pays 2 percent of interest per year. You have not made any transaction of the account for one year. How much the balance plus interest paid into your account will be? 4. If you miss the due date for loan payment of a bank, do you think other banks have this information? 5. Do you know that the current government implements the policy "50 million-baht deposit protection" to protect the accounts opened at commercial banks? <u>Financial behavior</u> 1. Do you make a comparison between financial products (such as deposit, loan, credit card etc.) offered by different service providers before deciding to select a service/product? 2. Do you think thoroughly whether you have enough money before making any purchases? 3. You settle all bills by due date. 4. You monitor your finance carefully. 5. You set a long-term financial goal and try to achieve it.	Adjusted from Bank of Thailand (2016)

Table 3.2 (continued)

Factor	Question	Reference
Financial literacy	Financial attitudes 1. I live for today and have no plan for the future 2. You are happy with spending more than saving for the future 3. If having money, I have to use it soon.	Adjusted from Bank of Thailand (2016)
Self-efficacy	Proactive personality 1. You can always change and create things. 2. You are confident to be able to find good opportunities. 3. You always look for new methods or better solutions whenever doing things. Role breadth self–efficacy 4. You believe that you can choose the best method to achieve your financial retirement plan successfully. 5. You have an achievable goal in life. 6. You always deal with unexpected problems successfully. Responsibility 7. There should always be preparation before beginning a task. 8. You think of searching for more knowledge about your job whenever having time. 9. You feel worried if your assignment has slow progress.	Adjusted from Jaroenruen, Makme and Kornpetpanee (2013)

Table 3.2 (continued)

Factor	Question	Reference
Motivation for retirement financial planning	<u>Direction and goal</u> 1. You have a firm belief in direction and goal of retirement financial planning. 2. You can explain steps and processes of retirement financial planning according to the planned direction and goal. 3. You can give advice on the process to retirement financial planning to colleagues based on their directions and goals. <u>Persistence</u> 4. You are willing to produce quality outputs more than expect. 5. You are determined to succeed in achieving the financial retirement plan. 6. You are always active in making financial retirement plan. <u>Intensity</u> 7. You always look for experience and knowledge in order to be prepared for retirement financial planning. 8. You have faith and devotion in retirement financial planning. 9. You have made retirement financial planning patiently, seriously and continuously.	Adjusted from Patipan (2012)

Table 3.2 (continued)

Factor	Question	Reference
Risk of retirement financial planning	Return rate 1. Interest rate 2. Payback period 3. Benefits from saving such as tax reduction Economic reliability 4. Inflation rate 5. Personal income tax 6. Economic fluctuation Attitude reliability 7. You think saving can create wealth for you. 8. You think saving is preparation for contingencies such as health treatment cost. 9. You think saving is preparation for retirement.	Adjusted from Nakseeluang (2014)
Retirement financial planning	Retirement financial planning associated with pull factors 1. Your family teaches the belief retirement financial planning is essential. 2. Social value influences the behavior of retirement financial planning. Retirement financial planning associated with push factors 3. You expect that you will have a happy life in retirement years. 4. Because of responsibility and duty to your loved ones, this influences you to set a limit for retirement financial planning. Retirement financial planning associated with supporting factors 5. You use your existing abilities to manage retirement financial planning. 6. If financial institutions have products that yield high returns, you will make an investment/deposit a saving aimed for retirement.	Adjusted from Tharacheewin (2015)

The questionnaire contains seven parts.

Part 1 Background of respondent, this is a checklist contains questions asking about background information, namely sex, age, marital status, highest

education, occupation, number of household member, household income and expense per month. This section therefore presents respondents' backgrounds.

Part 2 Financial literacy, this section consists of three groups of question.

1) Financial knowledge measurement has five questions: Division; Calculating interest payable of loan amount; Calculating compound interest of saving; Credit bureau and; Deposit protection. All questions are open-ended.

2) Financial behavior measurement has five questions: Careful thinking before purchasing financial product; Payment on due date; Careful monitoring of finance; Setting long-term financial goal and trying to achieve it and; Making comparison of products before selection or purchase of financial products.

3) Financial attitudes measurement has three questions: I live for today and have no plan for the future; You are happy with spending more than saving for the future and; If having money, I have to use it soon.

All respondents are required to give answers based on current situation to the questions on financial behavior and financial attitudes. Description of each question is written in Table 3.3

Table 3. 3 Detailed key components and question numbers in the questions on financial behavior and attitude.

Component of financial literacy	Indicator	Question number
1. Financial behavior	5	1-5
2. Financial attitudes	3	6-8

Questions are sentences with five-level rating scale. Each answer to the question indicates the level of financial literacy.

5 represents the highest level of practice

4 represents the high level of practice

3 represents the moderate level of practice

2 represents the low level of practice

1 represents the lowest level of practice

Part 3 Self-efficacy, there are four aspects: Proactive personality; Role breadth self–efficacy and; Responsibility. All respondents are required to give answers based on the current situation. Key components of self-efficacy are placed in Table 3.4.

Table 3. 4 Detailed key components, indicators and question numbers in the questions on self-efficacy

Component of self-efficacy	Indicator	Question number
1. Proactive personality	3	1-3
2. Role breadth self–efficacy	3	4-6
3. Responsibility	3	7-9

Similar to Part 2, these are sentenced questions that use five-level rating scale. Each question measures the level of self-efficacy.

5 represents the highest levels of practice

4 represents high levels of practice

3 represents moderate levels of practice

2 represents low levels of practice

1 represents the lowest levels of practice

Part 4 Motivation for retirement financial planning, the questions in this section ask about the motivation in people for retirement financial planning. There are three aspects, namely direction and goal, persistence and intensity. Answers are based on the current situation.

Table 3. 5 Detailed key components, indicators and question numbers in the questions on motivation for retirement financial planning

Component of motivation for retirement financial planning	Indicator	Question number
1. Direction and goal	3	1-3
2. Persistence	3	4-6
3. Intensity	3	7-9

All sentenced questions have five-level rating scale that measures the motivation for retirement financial planning.

5 represents the highest levels of practice

4 represents high levels of practice

3 represents moderate levels of practice

2 represents low levels of practice

1 represents the lowest levels of practice

Part 5 Risk of retirement financial planning

Part 5 contains questions asking about the potential risk of financial planning in three aspects: Return rate; Economic reliability and; Attitude reliability. All respondents give answers according to the current situation.

Table 3. 6 Detailed key components, indicators and question numbers in the questions on risk of financial planning

Component of risk of retirement financial planning	Indicator	Question number
1. Return rate	3	1-3
2. Economic reliability	3	4-6
3. Attitude reliability	3	7-9

All questions have five-level rating scale that measures the importance of risk of retirement financial planning.

5 represents the highest levels of importance

4 represents high levels of importance

3 represents moderate levels of importance

2 represents low levels of importance

1 represents the lowest levels of importance

Part 6 Retirement financial planning

This section asks questions concerning three components of retirement financial planning. They are: Retirement financial planning associated with pull

factors; Retirement financial planning associated with push factors and; Retirement financial planning associated with supporting factors. All respondents take the situation at present into account.

Table 3. 7 Detailed key components, indicators and question numbers in the questions on retirement financial planning

Component of retirement financial planning	Indicator	Question number
1. Retirement financial planning associated with pull factors	2	1-2
2. Retirement financial planning associated with push factors	2	3-4
3. Retirement financial planning associated with supporting factors	2	5-6

The five-level rating scale is utilized in each question to measure the level of retirement financial planning.

5 represents the highest levels of practice

4 represents high levels of practice

3 represents moderate levels of practice

2 represents low levels of practice

1 represents the lowest levels of practice

Part 7 Situation, problem and recommendation

The questions in Part 7 ask about the situation, problems and recommendations regarding financial literacy and retirement financial planning. Respondents can provide opinions on each component.

2. Content Validity

After the questionnaire has been developed, three experts of financial literacy, retirement planning, and research methodology were asked to determine the content validity. These three experts included Prof. Dr. Anchana Naranong, Associate Dean

for Administrative Affairs of Graduate School of Public Administration at National Institute of Development Administration, Pol. Lt. Col. Assoc. Prof. Kasemsarn Chokechakornpan, Vice President for Planning of National Institute of Development Administration and Graduate School of Public Administration, and Dr. Chayakrit Asvathitanont, Dean of College of Innovation at Thammasat University. In addition to content validity, the experts were asked to review the questionnaire's objective, representation of the question items, and language clarity. The question items will be rated by these three experts based on the following scores.

The item will be given:

+1 when the expert is sure that it is congruent with the objective.

0 when the expert is unsure that it is congruent with the objective.

-1 when the expert is sure that it is not congruent with the objective.

For the results of content validity, all question items were greater than 0.50, which is considered that the content is valid (Tirakanan, 2011). However, minor revisions of language as suggested by the experts were made. Its meanings remained unchanged to make a clearer understanding of question items.

Table 3. 8 Summarizing the expert judgement and the results of the item objective congruence (IOC) index

Variables	Item number	Experts			Mean	Interpretation
		1st	2nd	3rd		
Respondents 'general information	1	+1	+1	+1	1.000	Valid
	2	+1	+1	0	0.670	Valid
	3	+1	+1	+1	1.000	Valid
	4	+1	+1	+1	1.000	Valid
	5	+1	+1	0	0.670	Valid
	6	+1	+1	0	0.670	Valid
	7	+1	+1	+1	1.000	Valid
	8	+1	+1	+1	1.000	Valid

Table 3.8 (continued)

Variables	Item number	Experts			Mean	Interpretation
		1st	2nd	3rd		
Financial literacy	1	+1	+1	+1	1.000	Valid
	2	+1	+1	+1	1.000	Valid
	3	+1	+1	+1	1.000	Valid
	4	+1	+1	+1	1.000	Valid
	5	+1	+1	+1	1.000	Valid
	6	+1	+1	+1	1.000	Valid
	7	+1	+1	+1	1.000	Valid
	8	+1	+1	+1	1.000	Valid
	9	+1	+1	+1	1.000	Valid
	10	+1	+1	+1	1.000	Valid
	11	+1	0	+1	0.670	Valid
	12	+1	0	+1	0.670	Valid
	13	+1	0	+1	0.670	Valid
Self-efficacy	1	+1	+1	0	0.670	Valid
	2	+1	+1	+1	1.000	Valid
	3	+1	+1	+1	1.000	Valid
	4	+1	0	+1	0.670	Valid
	5	+1	0	+1	0.670	Valid
	6	+1	0	+1	0.670	Valid
	7	+1	+1	+1	1.000	Valid
	8	+1	+1	+1	1.000	Valid
	9	0	+1	+1	0.670	Valid

Table 3.8 (continued)

Variables	Item number	Experts			Mean	Interpretation
		1st	2nd	3rd		
Financial planning motivation	1	+1	+1	+1	1.000	Valid
	2	+1	+1	+1	1.000	Valid
	3	+1	+1	+1	1.000	Valid
	4	0	+1	+1	0.670	Valid
	5	+1	+1	+1	1.000	Valid
	6	+1	+1	+1	1.000	Valid
	7	+1	+1	+1	1.000	Valid
	8	+1	+1	+1	1.000	Valid
	9	+1	+1	+1	1.000	Valid
Risk in financial planning	1	+1	+1	+1	1.000	Valid
	2	+1	+1	+1	1.000	Valid
	3	+1	+1	+1	1.000	Valid
	4	+1	+1	+1	1.000	Valid
	5	+1	+1	+1	1.000	Valid
	6	+1	+1	+1	1.000	Valid
	7	+1	+1	0	0.670	Valid
	8	+1	+1	+1	1.000	Valid
	9	+1	+1	+1	1.000	Valid
Retirement Financial planning	1	0	+1	+1	0.670	Valid
	2	+1	+1	+1	1.000	Valid
	3	+1	+1	+1	1.000	Valid
	4	+1	+1	+1	1.000	Valid
	5	+1	+1	+1	1.000	Valid
	6	+1	+1	+1	1.000	Valid

3. Reliability

After the development and validity had been completed, pretesting of the questionnaire was performed and analyzed by Cronbach's Alpha Coefficient. During the pretesting, questionnaires were distributed to try out with the participants who shared certain similarities as those targeted samples living in the northeastern region of Thailand. Those 30 participants were not randomly selected and included in the samples. The results of reliability testing showed that the questionnaire had a Cronbach's alpha coefficient of 0.79. The alpha coefficient was greater than 0.7, which was an acceptable level. Therefore, the questionnaire was reliable and could be used to collect the required data from the samples living in the northeast of Thailand.

3.9 Data Collection

The researcher developed a data collection procedure described next.

1. The researcher began with collecting evidence-based information, with use of the letter for data collection for doctoral dissertation and self- introduction letter issued by School of Public Administration, National Institute of Development Administration. The letters are handed to the sample people living in Northeastern Region to respond to the questionnaire.

2. The researcher visited the target population for research clarification including objectives, data collection and questionnaire contents.

3. The researcher started data collection.

3.1 Respondents are informed of the objective of data collection, data content, collection method and benefits to them.

3.2 Respondents answered the questionnaire without identifying their name.

3.3 All questionnaire sheets are collected, with appreciation, after completion.

3.10 Data Analysis and Statistics

After empirical data collection through questionnaire, it is data analysis via statistical software package. Pearson's product-moment correlation coefficient is used to identify the correlation of studied variables. With use of Statistical Package for the

Social Sciences (SPSS), the analysis results paved the way to developing the model of financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning. The next process is confirmatory factor analysis in LISREL for structural validity. It examined the consistency between the hypothetical model and empirical data of components of financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning.

Goodness of fit test for models

Criteria are developed for goodness of fit test between hypothetical model and empirical data, and the consistency between the hypothetical model and empirical data (Wiratchai, 1999, p.44-52).

1. Pearson's product-moment correlation coefficient

Pearson's product-moment correlation coefficient is employed for analysis of model of components of financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning in this study. It has five levels of interpretation criteria.

Correlation coefficient of 0.81 or bigger demonstrates a strong relationship.

Correlation coefficient of 0.61 – 0.80 demonstrates a fairly strong relationship.

Correlation coefficient of 0.41 – 0.60 demonstrates a moderate relationship.

Correlation coefficient of 0.20 –0 .41 demonstrates a fairly low relationship.

Correlation coefficient of 0.20 or smaller demonstrates a low relationship.

2. Chi-square Statistic: $\chi^2 < 2$

The Chi-square is found to be insignificant at p >.05. The relative Chi-square equals the chi-square index divided by the degrees of freedom. The relative Chi-square should be 2 or less, meaning the model has the consistency with empirical data.

3. Goodness of Fit Index (GFI)

GFI is the value of the discrepancy function that indicates a fit of the model before and after adjustment. The value ranging from 0-1 or higher than 0.97 means the model has consistency with empirical data.

4. Adjusted Goodness of Fit Index (AGFI)

AFGI is a development of GFI that has been adjusted with the degree of freedom, variables and the size of sample group. Similar to GFI, the value higher than 0.90 means the model has consistency with empirical data.

5. Standardized Root Mean Squared Residual (SRMR)

SRMR is an index of the average of standardized residuals between the model and empirical data. SRMR is 0 to 1. If less than 0.05, it indicates the acceptable fit of the model to empirical data.

6. Root Mean Error of Approximation (RMSEA)

RMSEA is calculated using the Chi-square test statistics. It is the statistic reported in the LISREL program. Adding independent parameters improve the fit of the model. The value depends on population and degree of freedom. RMSEA value is 0-1. The value between 0.05-0.08 is interpreted as fair fit of the model to empirical data.

7. Standard Residuals

Standard residuals smaller than 2 means the model is consistent with empirical data.

Table 3. 9 Criteria for determining consistency between the hypothetical model and empirical data of components of financial literacy, self-efficacy, financial planning motivation, risk in retirement planning, and retirement financial planning

Goodness of fit	Criteria
Pearson's product-moment correlation coefficient	0.81 or bigger = strong relationship 0.61 – 0.80 = fairly strong relationship 0.41 – 0.60 = moderate relationship 0.20 –0 .41= fairly low relationship 0.20 or smaller = low relationship
Chi-square Statistic: $\chi^2 < 2$	< 2/df = 2 or less, meaning the model has the consistency with empirical data
Goodness of Fit Index: GFI	The value ranging from 0-1 or higher than 0.97 means the model has consistency with empirical data.

Table 3.9 (continued)

Goodness of fit	Criteria
Adjusted Goodness of Fit Index: AGFI	AGFI is 0-1. If higher than 0.90, the model has consistency with empirical data.
Standardized Root Mean Squared Residual: SRMR	SRMR is 0 to 1. If less than 0.05, it indicates the model is consistent with empirical data.
Root Mean Error of Approximation: RMSEA	RMSEA value of 0-1. The value between 0.05-0.08 is interpreted as fair fit of the model to empirical data.
Standard Residuals	Error smaller than 2 means the model is consistent with empirical data.

3.11 Qualitative Approach

Phase 2: Policy recommendations on financial Literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement planning among people living in the northeastern region of Thailand in the context of an ageing society were made.

Focus group is selected and conducted with 9 experts (Anderson, 1990; Denscombe, 2007; Morgan, 1997; Patton, 2002; Ritchie & Lewis, 2003; Stewart & Shamdasani, 1990) to review the draft of the policy recommendations on financial literacy , self-efficacy, financial planning motivation, risk in financial planning and retirement planning among people in the northeast of Thailand in the context of an ageing society. The criteria used for selection of the experts are obtained from Gilmore and Campbell (1996) suggesting that the number of members in the focus group should be 6-12 persons or 6-9 persons, which corresponded to the suggestions by Grudens-Schuck, Allen and Larson (2004). Morgan and Scannell (1998) stated that the size of focus group should be 6-10 persons.

The proposal evaluation confirms the possibility and appropriateness using three parts of newly designed question.

Part 1 General information

Part 2 Expert's opinions on the proposal of policy recommendation on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning in the Northeastern Region under the Thai elderly society context. The expert is required to provide opinions and criticism on question items with use of the five-level rating scale.

Part 3 Additional opinions and recommendations on the proposal of policy recommendation on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning in the Northeastern Region under the Thai elderly society context. This section allowed the expert to add in-depth information that will benefit the synthesis and revision of the proposal.

In evaluating appropriateness and possibility, they relied upon the following rating scales.

Appropriateness

5 means absolutely appropriate
4 means slightly appropriate
3 means moderately appropriate
2 means slightly inappropriate
1 means absolutely inappropriate

Possibility

5 means definitely possible
4 means very possible
3 means possible
2 means possibly not
1 means definitely not possible

3. Data collection from all experts
4. Data analysis using mean and interpretation as follows (Best, 1997).

Appropriateness

Score 4.50 – 5.00 means absolutely appropriate
Score 3.50 – 4.49 means very appropriate
Score 2.50 – 3.49 means moderately appropriate

Score 1.50 – 2.49 means	slightly inappropriate
Score 1.00 – 1.49 means	absolutely inappropriate
Possibility	
Score 4.50 – 5.00 means	definitely possible
Score 3.50 – 4.49 means	very possible
Score 2.50 – 3.49 means	possible
Score 1.50 – 2.49 means	possibly not
Score 1.00 – 1.49 means	definitely not possible

5 . To decide whether the proposal is appropriate and probable, the value of mean should be 3.50 and bigger, meaning the proposal is acceptable.

3.12 Chapter Summary

This research examined and tested the causal relationships of the following variables: financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning. Its population is individuals who lived in the northeastern region of Thailand in the context of an ageing society. Research methodology is explained in this chapter. Mixed methods research is adopted based on the concept developed by Creswell (2015a). Moreover, the research is designed to be carried out in two phases. The first phase began with quantitative research approach. Confirmatory factor analysis is deployed to confirm the following constructs: financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning. Subsequently, qualitative research method is put in the second phase. Focus group interview is adopted as a qualitative research instrument to review the draft of policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning among people who lived in the northeastern region of Thailand in the context of an ageing society. The next chapter presented the results of data analysis.

CHAPTER 4
DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This study entitled "The Causal Relationships in Financial Literacy, Self-Efficacy, Financial Motivation Planning, Risk in Financial Planning, and Retirement Financial Planning among People Living in the Northeastern Region of Thailand in the Context of an Ageing Society" adopted mixed methods research which integrates both quantitative and qualitative research approaches. Its objectives are 1) to examine the causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society through empirical data performed by confirmatory factor analysis, 2) to analyze causal relationship of financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society by structural equation modelling, and 3) to present policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning targeted at people living in the northeastern region of Thailand in the context of an ageing society. It adopted mixed methods research, integrating both quantitative approach and qualitative approach to confirm and extend the depth of data. In addition, causal research is employed to investigate the cause and effect relationships. Afterward, qualitative method research is applied to describe and confirm quantitative results and to demonstrate clarity in research Creswell (2015a). Descriptive research is utilized for qualitative method research, also. Results of data analysis are organized as follows:

1. Results of quantitative data analysis
2. Results of qualitative data analysis

4.2 Analysis of quantitative data

Phase 1: The causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society is studied and assessed.

The results of the analysis of the causal relationship in financial literacy , self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society are presented as the following.

1. Respondents' general information

2. Levels of agreement on financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning

3. Statistical values of observed variables: mean, standard deviation, skewness, and kurtosis

4. Cause and effect relationships between observed variables: the multicollinearity may occur among independent variables. The relationship values among the observed variable should not be over 0.90 (Pallant, 2010; Rubin & Rubin, 2012).

5. Discrimination index and reliability of question items of each observed variable: Cronbach's Alpha of the variables were used for discrimination index values and reliability item values of observed variables.

6. The first order confirmatory factor analysis is used for reliability along with the presentation of standard regression weights. Also, average variance extracted AVE or ρ_v) and construct reliability (CR or ρ_c) were the measurement of scale. Their results will be written in chi-square, degree of freedom, CFI, GFI, AGFI, SRMR, and RMSEA.

7. The second order confirmatory factor analysis is employed to interpret the scale including standard regression weights. Average variance extracted and construct reliability were the measurement of reliability. Their statistical values for evaluating the model were expressed in chi-square, degree of freedom, CFI, GFI, AGFI, SRMR, and RMSEA.

8. Structural equation modelling is a statistical technique used for testing and estimating the values of causal relationship. It is performed through the collection of statistical data and preliminary agreement on these causal relationships. In other words, it tested a goodness of fit between the theory constructs and empirical constructs. Also, the relationship among causal variables is analyzed and direct and indirect effects of variables were explained.

To have a common understanding of results of quantitative method research that analyzed causal relationship, symbols representing statistical values and variables were defined.

The following is list of acronyms representing variables in this research.

FL	**representing**	**financial literacy**
FL1	representing	financial knowledge
FL2	representing	financial behavior
FL3	representing	financial attitudes
SE	**representing**	**self-efficacy**
SE1	representing	proactive personality
SE2	representing	perception
SE3	representing	responsibility
MFP	**representing**	**financial planning motivation**
MFP1	representing	direction and goal
MFP2	representing	persistence
MFP3	representing	dedication
RKP	**representing**	**risk in financial planning**
RKP1	representing	return on investment
RKP2	representing	economy
RKP3	representing	attitudes toward retirement planning
RFP	**representing**	**retirement financial planning**
RFP1	representing	pull factors
RFP2	representing	push factors
RFP3	representing	supporting factors

The following is a list of symbols and acronyms representing statistical values

Mean	represents	mean
SD	represents	standard deviation
SK	represents	skewness
KU	represents	kurtosis
r	represents	Pearson's product moment correlation coefficient
SE	represents	standard error
t	represents	t-distribution
R^2	represents	squared multiple correlation coefficient or correlation coefficient
CR	represents	construct reliability
AVE	represents	average variance extracted
χ^2	represents	Chi-square
df	represents	degree of freedom
GFI	represents	goodness of fit index)
AGFI	represents	adjusted goodness of fit index)
CFI	represents	comparative fit index
SRMR	represents	standardized root mean square residual
RMSEA	represents	root mean square error of approximation
DE	represents	direct effects
IE	represents	indirect effects
TE	represents	total effects

4.3 Respondents' General Information

In this section, demographic factors which includes sex, age, marital status, educational levels, occupation, number of family members, average household income, and average household expenses are analyzed by frequency and percentage. Table 4.1 illustrates respondents' general information.

Table 4. 1 General information of the respondents in presented in numbers and percentages

General Information	Number (Person)	Percent
Sex		
Male	255	55.50
Female	205	44.50
Total	460	100.00
Age		
25-29 years old	20	2.50
30-34 years old	38	7.00
35-39 years old	190	45.00
40-44 years old	174	41.00
45-49 years old	26	4.00
50-54 years old	12	0.50
Total	460	100.00
Marital status		
Single	201	47.75
Married	178	42.00
Cohabitation (living together without getting married)	41	7.75
Married without being registered	19	2.25
Divorced	11	0.25
Total	460	100.00
Highest level of education		
Below primary school	119	27.25
Primary school	131	30.25
Junior high school	68	14.50
Senior high school	75	16.25
Vocational certificate	27	4.25
Above a bachelor’s degree	40	7.50
Total	460	100.00

Table 4.1 (Continued)

General Information	Number (Person)	Percent
Occupation		
Civil servant	21	2.75
Professions in different fields	27	4.25
Technicians in different fields	17	1.75
Clerk	16	1.50
Services staff	75	16.25
Agricultural farmers and fisherman	203	48.25
Craftsman	53	10.75
Factory and machinery workers	27	4.25
Salesperson and services provider	51	10.25
Total	460	100.00
Number of family members		
1-2 persons	110	25.00
3-4 person	194	46.00
5-6 persons	93	20.75
More than 7 persons	43	8.25
Total	460	100.00
Average household income		
Less than 5,000 baht	68	14.50
5,001-10,000 baht	118	27.00
10,001-15,000 baht	160	37.50
15,001-20,000 baht	55	11.25
20,001-25,000 baht	15	1.25
Over 25,000 baht	44	8.50
Total	460	100.00
Average household expenses		
Less than 5,000 baht	10	15.00
5,001-10,000 baht	126	29.00
10,001-15,000 baht	156	36.50
15,001-20,000 baht	49	9.75
20,001-25,000 baht	15	1.25
More than 25,000 baht	44	8.50
Total	460	100.00

The results reported in Table 4.1 are summarized below.

By sex, most respondents were male at 55.50 percent or 255, and the rest are female respondents which accounted for 44.50 percent or 205.

By age, most respondents fell between a range of 35 – 39 years at 45 percent or 190, followed by a range of 40 – 44 years at 41 percent or 174 persons, a range of 30 – 34 years at 7 percent or 38 persons, a range of 45 – 49 years at 4 percent or 26 persons, a range of 25 – 29 years at 2.5 percent or 20 persons, and a range of 50 – 54 years at 0.50 percent or 12 persons, respectively.

By marital status, 201 respondents were single at 47.45 percent, followed by "married" at 42 percent or 178 persons, cohabitation at 7.75 percent or 41 persons, "married without being registered" at 2.25 percent or 19 persons, and divorced at 0.25 percent or 11 persons.

By education, the majority of respondents completed primary school with 131 accounting for 30.23 percent, followed by below primary school at 27.25 percent or 119 persons, senior high school at 16.25 percent or 75 persons, junior high school at 14.50 percent or 68 persons, above a bachelor's degree at 7.50 percent or 40 persons, and vocational certificate at 4.25 percent or 27 persons.

By occupation, most respondents work as agricultural farmers and fishermen at 48.25 percent or 213 persons, followed by services staff at 16.25 percent or 85 persons, craftsman at 10.75 percent or 63 persons, salesperson and services provider at 10.25 percent or 61 persons, professions in different fields and factory and machinery workers at 4.25 percent or 37 persons, civil servant at 2.75 percent or 40 persons, and vocational certificate at 4.25 percent or 27 persons, respectively.

By number of family members, 194 respondents or 46 percent have 3 – 4 family members, followed by 1 – 2 family members at 25 percent or 110 respondents, 5 – 6 family members at 20.75 percent or 93 respondents, and more than 7 family members at 8.25 percent or 43 respondents, respectively.

By average household income, 160 respondents have an average household income of 10,001 – 15,000 baht at 37.50 percent, followed by 5,001 – 10,000 baht at 27 percent or 118 respondents, less than 5,000 baht at 14.50 percent or 68 respondents, 15,001 – 20,000 baht at 11.25 percent or 55 respondents, over 25,000 baht at 8.50 percent or 44 respondents, and 20,001 – 25,000 baht at 1.25 percent or 15 respondents.

By average household expenses, the majority of respondents have an average household expenses of 10,001 – 15,000 baht at 36.50 percent or 156 persons,

followed by an average household expenses of 5,001 – 10,000 baht at 29 percent or 126 respondents, average household expenses of below 5,000 baht at 15 percent or 70 respondents, average household expenses of 15,001 – 20,000 baht at 9.75 percent or 49 respondents, average household expenses of more than 25,000 baht at 8.50 percent or 44 respondents, and average household expenses of 20,001 – 25,000 baht at 1.25 percent or 15 respondents.

4.4 Descriptive Analysis

A level of agreement on financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement planning is analyzed by descriptive statistics. These descriptive statistics were frequency, percentage, mean, and standard deviation as demonstrated in Table 4.2 – 4.8.

4.4.1 A Level of Agreement on Financial Literacy

A level of agreement on financial literacy consists of the following variables: financial knowledge, financial behavior, and financial attitudes. Table 4.2 – 4.4 shows a level of agreement on the financial literacy construct.

Table 4. 2 Financial literacy in number and percentage

Financial Literacy	Number (Person)	Percent
1. Suppose you have 5 siblings (including you) and receive 1,000 baht. You are required to share 1,000 baht with your siblings including you equally, how much you and your siblings would get.		
Total correct answers	170	35.00
Total wrong answer	290	65.00
Total	460	100.00
2. Suppose you borrow 1,000 baht from your friend today and another friend repay you 120 baht. How much do you think you will make an interest payment to your friend in the following 1 year?		
Total correct answers	111	20.25
Total wrong answer	349	79.75
Total	460	100.00

Table 4.2 (Continued)

Financial Literacy	Number (Person)	Percent
3. Suppose you deposit 100 baht in your savings account with annually – 2 percent interest rate. During that year, you do not make any deposit or withdrawal from your savings account. A year passes, how much do you think you will have money plus interest rate in your savings account?		
Total correct answers	69	9.75
Total wrong answer	391	90.25
Total	460	100.00
4. If you make an overdue repayment to a bank, do you think that other banks will be notified?		
Yes	245	56.25
No	144	31.00
Not sure	71	12.75
Total	460	100.00
5. Do you know that now the government has a policy on 50-million-baht deposit protection/deposit guarantee for commercial bank accounts?		
No	275	63.75
Yes	77	14.25
Not sure	108	22.00
Total	460	100.00

According to Table 4.2, the conclusions were written as the following.

For financial knowledge, “Suppose you have 5 siblings (including you) and received 1,000 baht. You are required to share 1,000 baht with your sibling including you equally, how much you and your sibling would get” is the question item of which most respondents selected the wrong answer at 65 percent or 290 persons, and the rest made the correct answer at 35 percent or 170 persons.

For financial knowledge, “Suppose you borrow 1,000 baht from your friend today and another friend repay you 120 baht. How much do you think you will make an interest payment to your friend in the following year?” is the question item of

which most respondents chose the wrong answer at 79.75 percent or 349 persons. There were 111 respondents or 20.25 percent that made the correct answer.

For financial knowledge, “Suppose you deposit 100 baht in your savings account with annually – 2 percent interest rate. During that year, you do not make any deposit or withdrawal from your savings account. A year passes, how much do you think you will have money plus interest rate in your savings account?” is the question item of which most respondents selected the wrong answer at 90.25 percent or 391 persons. In contrast, 69 respondents made the correct answer which accounted for 9.75 percent of the total samples.

For financial knowledge, “If you make an overdue repayment to a bank, do you think that other banks will be notified?” is the question item of which 245 respondents said that they did not know about it, representing 56.25 percent. At the same time, there were 144 respondents or 31 percent or who knew it. However, 71 respondents or 12.75 percent said that they are not sure.

For financial knowledge, “do you know that the government has now a policy on 50-million-baht deposit protection/deposit guarantee for commercial bank accounts?” is the question item of which most respondents selected an answer of “No” at 63.75 percent or 275 persons. There were 108 respondents or 22 percent who made the answer of “Not Sure”. 77 respondents or 14.25 percent gave an answer of “Yes”.

Table 4. 3 Financial behavior in mean, percentage, and standard deviation

Indicators	Financial Behavior	Mean	SD	Operational Level
FB1	Before you make a purchase decision on financial services/all kinds of financial product (deposit, loan, credit card, etc.), you compare these products offered by different banks and financial institutions.	3.71	0.83	High
FB2	Before you make a purchase decision, you consider whether you have enough money to pay carefully.	3.81	0.69	High
FB3	You make payments and repayments on due date.	4.34	0.51	Highest
FB4	You monitor your spending closely.	4.22	0.45	Highest

Table 4.3 (continued)

Indicators	Financial Behavior	Mean	SD	Operational Level
FB5	You set your long-term financial goals and try to achieve them.	3.34	1.18	Moderate
	Total	3.88	0.61	High

The results shown in Table 4.3 reveal that working population has a high level of agreement on financial behavior with the mean score of 3.88. It is also found that working population has the highest level of agreement for two question items, a high level of agreement for question items, and a moderate level of agreement for a question item. The question item that received the highest average score of financial behavior indicated "You make payments and repayments on due date" with the mean score of 4.34, followed by "You monitor your spending closely" with the mean score of 4.22, and "You set your long-term financial goals and try to achieve them" with the mean score of 3.34, respectively.

Table 4. 4 Financial attitudes in mean and standard deviation

Indicators	Financial attitudes	Mean	SD	Operational Level
FA1	1. You live for today and do not have a plan for the future.	2.47	1.29	Low
FA2	2. You are happy with spending rather than saving for your future.	2.48	0.91	Low
FA3	3. You will spend money once you have it.	1.51	0.70	Lowest
	Total	2.15	0.56	Low

According to Table 4.4, it is found that working population has a low level of agreement on financial attitudes with the mean score of 2.15. There were two question items with a low level of agreement and one question item with the lowest level of agreement. The question item indicating "You are happy with spending rather than saving for your future" has the highest mean score of 2.48, followed by "You live for today and do not have a plan for the future" with the mean score of 2.47, and "You will spend money once you have it" with the lowest mean score of 1.51, respectively.

4.4.2 A level of agreement on self-efficacy

The self-efficacy construct contained the following variables: proactive personality, perception, and responsibility as written in Table 4.5.

Table 4. 5 A level of agreement on self-efficacy reported in mean and standard deviation

Indicators	Self-Efficacy	Mean	SD	Operational Level
SE1	Proactive Personality	3.19	0.95	Moderate
PP1	You can change and create things always.	3.18	0.93	Moderate
PP2	You are confident that you can pursue a better opportunity.	3.18	0.93	Moderate
PP3	You always find a new way or better approach when you make things.	3.21	0.98	Moderate
SE2	Perception	3.79	0.92	High
PB1	You believe that you can select the best way to make a successful retirement planning.	4.16	1.05	High
PB2	You have a life goal that you can accomplish.	3.37	1.17	Moderate
PB3	When unexpected problems occur, you can manage them well.	3.76	0.85	High
SE3	Responsibility	3.77	0.84	High
RES1	Preparation before work is the best thing one should always do.	4.36	0.70	Highest
RES2	In your spare time, you think that you would seek new knowledge of your jobs.	3.14	1.01	Moderate
RES3	You will become uncomfortable when your assigned jobs have a slow progress.	3.82	1.01	High
	Total	3.57	0.87	High

Table 4.5 demonstrates that working population has a high level of agreement on self-efficacy with the mean score of 3.57. For each variable of the self-efficacy construct, perception has the high level of agreement with the highest mean score of 3.79, followed by responsibility with the high mean score of 3.77, and proactive

personality with the least mean score of 3.19, respectively. Each variable of the construct is detailed in the following paragraphs.

For proactive personality, it is found that working population has a moderate level of agreement with the mean score of 3.19. All question items of proactive personality received a moderate level of agreement. “You always find a new way or better approach when you make things” has the highest mean score of 3.21 at a moderate level of agreement, followed by “You can change and create things always” and “You are confident that you can pursue a better opportunity” with the mean score of 3.18, respectively.

For perception, working population has a high level of agreement with the mean score of 3.79. There were two question items with a high level of agreement and one question item with a moderate level of agreement. “You believe that you can select the best way to make a successful retirement planning” has the highest mean score of 4.16 at a high level of agreement, followed by “When unexpected problems occur, you can manage them well” with the high mean score of 3.76, and “You have a life goal that you can accomplish” with the least mean score of 3.37 at a moderate level of agreement.

For responsibility, it is found that working population has a high level of agreement with the mean score of 3.77. There is a question item that received the highest level of agreement, one question items with a high level of agreement, and a question item with a moderate level of agreement. “Preparation before work is the best thing one should always do” received the highest mean score of 4.36 at a high level of agreement, followed by “You will become uncomfortable when your assigned jobs have a slow progress” with the mean score of 3.82 at a high level of agreement, and “In your spare time, you think that you would seek new knowledge of your jobs” with the least mean score of 3.14 at a moderate level of agreement, respectively.

4.4.3 A level of agreement on financial planning motivation

The financial planning motivation construct consists on the following variables: direction and goal, persistence, and dedication as shown in Table 4.6.

Table 4. 6 A level of agreement on financial planning motivation in mean and standard deviation

Indicators	Financial Planning Motivation	Mean	SD	Operational Level
MFP1	Direction and Goal	2.96	1.04	Moderate
DG1	You adhere to the direction and goal of retirement planning.	2.94	1.05	Moderate
DG2	You can explain the procedure and process of retirement planning according to defined direction and goal.	2.99	1.03	Moderate
DG3	You can give advices and make recommendations on retirement planning process to colleagues according to defined direction and goal.	2.96	1.06	Moderate
MFP1	Persistence	3.57	0.90	High
PST1	You are willing to make a creative job with an unexpected quality.	3.63	0.92	High
PST2	You are determined to make a successful retirement planning.	3.57	0.93	High
PST3	You are always enthusiastic about making a retirement planning.	3.53	0.94	High
MFP1	Dedication	3.00	1.05	Moderate
INT1	You are always in pursuit of experience and knowledge in response to retirement planning.	2.96	1.06	Moderate
INT2	You have faith and dedication to retirement planning.	3.03	1.04	Moderate
INT3	You make your retirement planning with patience, seriousness, and continuity.	3.01	1.10	Moderate
	Total	3.18	0.97	Moderate

Table 4.6 shows that working population has a moderate level of agreement on retirement planning with mean score of 3.18. Persistence is a variable of the retirement planning construct with the highest mean score of 3.57 at a high level of agreement, followed by dedication with the mean score of 3.00 at a moderate level of agreement, and direction and goal with the least mean score of 2.96 at a moderate level of agreement.

For direction and goal, working population has a moderate level of agreement with the mean score of 3.57. All question items of direction and goal received a moderate level of agreement. “You can explain the procedure and process of retirement planning according to the defined direction and goal” has the highest mean score of 2.99 at a moderate level of agreement, followed by “You can give advices and make recommendations on retirement planning process to colleagues according to defined direction and goal” with the mean score of 2.96 at a moderate level of agreement, and “You adhere to the direction and goal of retirement planning” with the mean score of 2.94 at a moderate level of agreement.

For persistence, working population has a high level of agreement with the mean score of 3.00. It is found that all question items received a moderate level of agreement. “You have faith and dedication to retirement planning” has a moderate level of agreement with the mean score of 3.03, followed by “You make your retirement planning with patience, seriousness, and continuity” at a moderate level of agreement with the mean score of 3.01, and “You are always in pursuit of experience and knowledge in response to retirement planning” at a moderate level of agreement with the least mean score of 2.96, respectively.

4.4.4 A level of agreement on risk in financial planning

Risk in financial planning is the construct that comprised of return on investment, economy, and attitudes toward retirement planning, which is illustrates in Table 4.7.

Table 4. 7 A level of agreement on risk in financial planning in mean and standard deviation

Indicators	Risk in Financial Planning	Mean	SD	Level of Significance
RKP1	Return on Investment	4.43	0.50	Highest
RR1	Interest rate	4.43	0.50	Highest
RR2	Holding period return	4.43	0.50	Highest
RR3	Savings benefit, for example, tax deduction	4.44	0.50	Highest

Table 4.7 (continued)

Indicators	Risk in Financial Planning	Mean	SD	Level of Significance
RKP2	Economy	4.70	0.41	Highest
ECO1	Inflation rate	4.63	0.49	Highest
ECO2	Personal income tax rate	4.63	0.49	Highest
ECO3	Economic volatility	4.84	0.38	Highest
RKP3	Attitudes Toward Retirement Planning	4.67	0.48	Highest
ATT1	You think that saving can increase your wealth.	4.67	0.48	Highest
ATT2	You think that saving is a preparedness for emergency expenses, such as medical expenses.	4.67	0.48	Highest
ATT3	You think that saving is a preparedness for retirement.	4.67	0.48	Highest
	Total	4.60	0.38	Highest

Table 4.7 indicates that working population has the highest level of agreement on risk in financial planning with the mean score of 4.60. For each variable of risk in financial planning, economy has the highest mean score of 4.70 at the highest level of agreement, followed attitudes toward retirement planning with the mean score of 4.67 at the highest level of agreement, and return on investment with the least mean score of 4.43 at the highest level of agreement, respectively. These variables were explained in more details in the following paragraphs.

For return on investment, working population has the highest level of agreement on risk in financial planning with the highest mean score of 4.43, overall. It is also found that return on investment is a variable whose all question items received the highest level of agreement. “Savings benefit, for example, tax deduction” is a question item that has the highest mean score of 4.44 at the highest level of agreement, followed by “interest rate” and “holding period return” having the least mean score of 4.43 at the highest level of agreement, respectively.

For the economy, working population has the highest level of agreement on risk in financial planning with the mean score of 4.70. All question items received the highest level of agreement on economy. “Economic volatility” has the highest mean score of 4.84 at the highest level of agreement, followed by “inflation rate” and

"personal income tax rate" receiving the mean score of 4.63 at the highest level of agreement.

For attitudes toward retirement planning, it is found that working population has the highest level of agreement on risk in financial planning with the mean score of 4.67. All question items has the highest level of agreement. "You think that saving can increase your wealth", "You think that saving is a preparedness for emergency expenses, such as medical expenses", and "You think that saving is a preparedness for retirement" were the question items that received the equal mean score of 4.65 at the highest level of agreement.

4.4.5 A level of agreement on retirement planning

Retirement planning is the construct that contained pull factors, push factors, and supporting factors as shown in Table 4.8.

Table 4. 8 A level of agreement on retirement planning in mean and standard deviation

Indicators	Retirement Planning	Mean	SD	Operational Level
RFP1	Pull Factors	4.06	0.74	High
PUL1	You are instilled by your family with the belief that it is necessary plan for retirement.	3.82	1.10	High
PUL2	Social value influences behavior of retirement planning.	4.31	0.47	Highest
RFP2	Push Factors	4.26	0.56	Highest
PUS1	You expect that your retired life will be happy and comfortable.	4.33	0.48	Highest
PUS2	Burden and responsibility for your beloved ones create a limited budget for your retirement planning.	4.19	0.68	High
RFP3	Supporting Factors	3.96	1.07	High
SPP1	You utilize your ability to help manage retirement planning.	3.82	1.31	High
SPP2	When financial institutions/banks offer financial products with high return on investment/savings rate, you would invest in them for your retirement goals.	4.09	0.97	High
	Total	4.09	0.71	High

Table 4.8 reveals that working population has a high level of agreement on retirement planning with the mean score of 4.09. For each variable of the retirement planning construct, push factors received the highest mean score of 4.26 at the highest level of agreement, followed by pull factors with the mean score of 4.06 at a high level of agreement, and supporting factors with the least mean score of 3.96 at a high level of agreement.

For pull factors, working population has the highest level of agreement on retirement planning with the mean score of 4.06. It is also found that a question item of push factors received the highest level of agreement and a question item has a high level of agreement. "Social value influences behavior of retirement planning" received the highest mean score of 4.31 at the highest level of agreement, followed by "You are instilled by your family with the belief that it is necessary plan for retirement" having the least level of agreement with the mean score of 3.82.

For push factors, working population has the highest level of agreement on retirement planning with the mean score of 4.26. There is a question item having the highest level of agreement and a question item with a high level of agreement. "You expect that your retired life will be happy and comfortable" has the highest means score of 4.33 at the highest level of agreement, followed by "Burden and responsibility for your beloved ones create a limited budget for your retirement planning" with the mean score of 4.19 at a high level of agreement.

For supporting factors, working population has a high level of agreement on self-efficacy with the mean score of 3.96. For all question items of supporting factors, it is found that "When financial institutions/banks offer financial products with high return on investment/savings rate, you will invest in them for your retirement goals" has the highest mean score of 4.09 at the highest level of agreement, followed by "You utilize your ability to help manage retirement planning" with the mean score of 3.82 at a high level of agreement.

4.5 Descriptive Statistics

4.5.1 Basic statistical values of observed variables

In this section, basic statistical values of observed variable such as financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and

retirement financial planning were presented in mean, standard deviation, skewness, and kurtosis as shown in Table 4.9.

Table 4. 9 Statistical values of observed variables in mean, standard deviation, skewness, and kurtosis

Latent Variables	Observed Variables	Question Items	Mean	SD	Skew-ness	Kurtosis	Interpre-tation
FL	FL1	5	1.10	1.50	-0.31	-0.27	-
	FL2	5	3.88	0.61	-0.25	-0.34	High
	FL3	3	2.15	0.56	-0.21	-0.59	Low
SE	SE1	3	3.21	0.98	-0.27	-0.16	Moderate
	SE2	3	4.16	1.05	-0.29	-0.15	High
	SE3	3	4.36	0.70	-0.25	-0.33	Highest
MFP	MFP1	3	2.99	1.03	-0.20	-0.48	High
	MFP2	3	3.57	0.93	-0.38	-0.10	High
	MFP3	3	3.03	1.04	-0.42	-0.01	Moderate
RKP	RKP1	3	4.43	0.50	-0.15	0.13	Highest
	RKP1	3	4.84	0.38	-0.40	0.07	Highest
	RKP1	3	4.67	0.48	-0.19	-0.18	Highest
RFP	RFP1	2	4.06	0.74	-0.38	-0.04	High
	RFP2	2	4.26	0.56	-0.30	-0.36	Highest
	RFP3	2	3.96	1.07	-0.50	0.00	High

The value ranged between -3 and +3, and value of kurtosis is between -0.59 and -0.13 which fell between -10 and +10, indicating normal distribution (Wanitbancha, 2014). Thus, these observed variables could be used for measurement model and developed model.

4.5.2 Relationships among Observed Variables

This section discussed correlation coefficients of observed variables from which the problems of multicollinearity will arise. Highly correlated variables could cause the problems of high deviation. Therefore, multicollinearity among variables

must be performed and examined through bivariate correlation of the variables in the model. To see if the multicollinearity existed, the correlation coefficients should not be over 0.90 (Pallant, 2010; Rubin & Rubin, 2012). The results of multicollinearity analysis were demonstrated in Table 4.10, indicating that the relationship among the variables is positive between 0.427 and 0.758 which is below 0.90. Thus, it can be concluded that multicollinearity among variables did not exist in this research.

Table 4. 10 Correlation coefficients of observed variables

	FL1	FL2	FL3	SE1	SE2	SE3	MFP1	MFP2	MFP3	RKP1	RKP2	RKP3	RFP1	RFP2	RFP3
Mean	1.10	3.88	2.15	3.21	4.16	4.36	2.99	3.57	3.03	4.43	4.84	4.67	4.06	4.26	3.96
SD	1.50	0.61	0.56	0.98	1.05	0.70	1.03	0.93	1.04	0.50	0.38	0.48	0.74	0.56	1.07
FL1	1														
FL2	0.750**	1													
FL3	0.654**	0.758**	1												
SE1	0.613**	0.662**	0.634**	1											
SE2	0.637**	0.622**	0.603**	0.748**	1										
SE3	0.602**	0.626**	0.627**	0.737**	0.738**	1									
MFP1	0.585**	0.639**	0.622**	0.614**	0.573**	0.641**	1								
MFP2	0.587**	0.640**	0.606**	0.626**	0.548**	0.628**	0.716**	1							
MFP3	0.582**	0.638**	0.621**	0.644**	0.606**	0.649**	0.642**	0.727**	1						
RKP1	0.494**	0.519**	0.500**	0.528**	0.450**	0.496**	0.530**	0.456**	0.443**	1					
RKP2	0.669**	0.660**	0.595**	0.629**	0.609**	0.606**	0.633**	0.618**	0.573**	0.574**	1				
RKP3	0.749**	0.734**	0.670**	0.698**	0.653**	0.643**	0.651**	0.628**	0.622**	0.666**	0.715**	1			
RFP1	0.661**	0.635**	0.596**	0.698**	0.657**	0.684**	0.624**	0.579**	0.587**	0.480**	0.581**	0.671**	1		
RFP2	0.599**	0.611**	0.620**	0.674**	0.622**	0.636**	0.576**	0.532**	0.645**	0.427**	0.538**	0.623**	0.734**	1	
RFP3	0.582**	0.586**	0.618**	0.652**	0.611**	0.634**	0.635**	0.590**	0.597**	0.506**	0.569**	0.643**	0.643**	0.615**	1

*p-value < 0.05, ** p-value < 0.01

4.5.3 Discrimination and Reliability of Question Items of Each Observed Variable

In this section, the data collected from 400 samples were analyzed for reliability of question items that served as the measurement of observed variables. The corrected item-total correlation values and Cronbach's alpha were used to illustrate the reliability of collected data in this research.

Table 4. 11 Item discrimination and scale reliability of financial literacy

Observed Variables	Component Variables	Corrected Item-Total Correlations	Cronbach's alpha
FK	FK1	0.593	0.797
	FK2	0.633	
	FK3	0.411	
	FK4	0.818	
	FK5	0.469	
FB	FB1	0.804	0.843
	FB2	0.821	
	FB3	0.529	
	FB4	0.603	
	FB5	0.753	
FA	FA1	0.754	0.716
	FA2	0.407	
	FA3	0.554	

It is found from Table 4.11 that item discrimination of financial literacy ranged from 0.411 to 0.818 and the reliability of financial literacy is 0.797. Also, the item discrimination of financial behavior fell between 0.529 and 0.821 and its reliability is 0.843. The item discrimination of financial attitudes ranged from 0.407 to 0.754 and its reliability is 0.716. These results show that corrected item-total correlations and scale reliability were high.

Table 4. 12 Item discrimination and scale reliability of self-efficacy

Observed Variables	Component Variables	Corrected Item-Total Correlations	Cronbach's alpha
PP	PP1	0.993	0.995
	PP2	0.995	
	PP3	0.982	

Table 4.12 (continued)

Observed Variables	Component Variables	Corrected Item-Total Correlations	Cronbach's alpha
RB	RB1	0.682	0.866
	RB2	0.900	
	RB3	0.706	
RES	RES1	0.861	0.903
	RES2	0.777	
	RES3	0.860	

Table 4.12 demonstrates that item discrimination of proactive personality ranged from 0.982 to 0.995 and its scale reliability is 0.995. For the perception variable, corrected item-total correlations were found between 0.682 and 0.900 and its scale reliability is 0.866. For the responsibility variable, item discrimination ranged from 0.777 to 0.861 and its scale reliability is 0.903. Thus, it can be concluded that corrected item-total correlations of self-efficacy and scale reliability were high.

Table 4. 13 Item discrimination and scale reliability of financial planning motivation

Observed Variables	Component Variables	Corrected Item-Total Correlations	Cronbach's alpha
DG	DG1	0.990	0.992
	DG2	0.973	
	DG3	0.983	
PST	PST1	0.912	0.965
	PST2	0.989	
	PST3	0.879	
INT	INT1	0.977	0.985
	INT2	0.964	
	INT3	0.962	

According to Table 4.13, it is found that, for direction and goal, the corrected item-total correlation ranged from 0.973 to 0.990 and its scale reliability is 0.992. The item discrimination value of the persistence variable fell between 0.879 and 0.989 and its scale reliability is 0.965.

Table 4. 14 Item discrimination and scale reliability of risk in financial planning

Observed Variables	Component Variables	Corrected Item-Total Correlations	Cronbach's alpha
RR	RR1	0.995	0.996
	RR2	0.995	
	RR3	0.980	
ECO	ECO1	0.907	0.875
	ECO2	0.907	
	ECO3	0.528	
ATT	ATT1	0.995	0.999
	ATT2	0.999	
	ATT3	0.999	

Table 4.14 demonstrates that, for return on investment, item discrimination ranged from 0.980 to 0.995 and its scale reliability is 0.996. For the economy variable, item discrimination is between 0.528 and 0.907 and its scale reliability is 0.875. For attitudes toward retirement planning, corrected item-total correlation is from 0.995 to 0.999 and its scale reliability is 0.999. With these reported values, it can be concluded that corrected item-total correlations and scale reliability obtained from collected data were high.

Table 4. 15 Item discrimination and scale reliability of retirement planning

Observed Variables	Component Variables	Corrected Item-Total Correlations	Cronbach's alpha
PUL	PUL1	0.712	0.711
	PUL2	0.712	
PUS	PUS1	0.840	0.884
	PUS2	0.840	
SPP	SPP1	0.764	0.844
	SPP2	0.764	

Table 4.15 shows that, for pull factors, corrected item-total correlation is 0.712 and its scale reliability is 0.711. For push factors, corrected item-total correlation is 0.840 and its scale reliability is 0.884. It can be concluded item discrimination and scale reliability of retirement planning collected from 400 samples were high.

4.6 Assessment of Measurement Model

4.6.1 Results of the First Order Confirmatory Factor Analysis

The first order confirmatory factor analysis is performed to test and confirm the correction of observed variables that could measure the latent variables in endogenous factors and exogenous factors.

The endogenous factors were self-efficacy (SE) and retirement financial planning (RFP). Self-efficacy contained three observed variables: proactive personality (SE1), perception (SE2), and responsibility (SE3). At the same time, retirement planning included pull factors (RFP1), push factors (RFP2), and supporting factors (RFP3).

The exogenous factors consists of financial literacy (FL), financial planning motivation (MFP), and risk in financial planning (RKP). For financial literacy, the observed variables were financial knowledge (FL1), financial behavior (FL2), and financial attitudes (FL3). For financial planning motivation, direction and goal, persistence, and dedication were the observed variables. Return on investment (RKP1), economy (RKP2) and attitudes toward retirement planning (RKP3) were the observed variables for risk in financial planning. The following paragraphs were the details of these variables.

Results of confirmatory factor analysis: financial literacy

The researcher tested goodness of fit indices of financial literacy in the first order confirmatory factor analysis. The financial literacy construct contained three observed variables: financial knowledge (FL1), financial behavior (FL2), and financial attitudes (FL3). These observed variables were tested with empirical data as shown in Table 4.16.

Table 4. 16 Goodness of fit indices of financial literacy in the first order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	61.87	-
df	-	50	-

Table 4.16 (continued)

Goodness of Fit Statistics	Description	Value	Interpretation
p-value	$p > 0.05$	0.12	Accepted
χ^2 / df	$\chi^2 / df < 2$	1.24	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.98	Accepted
AGFI	≥ 0.90	0.96	Accepted
RMSEA	< 0.05	0.024	Accepted
SRMR	< 0.05	0.019	Accepted

According to Table 4.16, goodness of fit indices in first order confirmatory factor analysis includes chi-square at 61.87 with the statistical significance of the 0.12 level (p-value = 0.12), the relative chi-square at 1.24, the comparative fit index of 1.00, the goodness of fit index of 0.98, the adjusted goodness of fit index of 0.96, the root mean square error of approximation of 0.024, and the standardized root mean square residual of 0.019, all of which were accepted. Therefore, the model is in accordance with the empirical data and could be used to perform the first order confirmatory factor analysis of financial literacy as depicted in Figure 4.1.

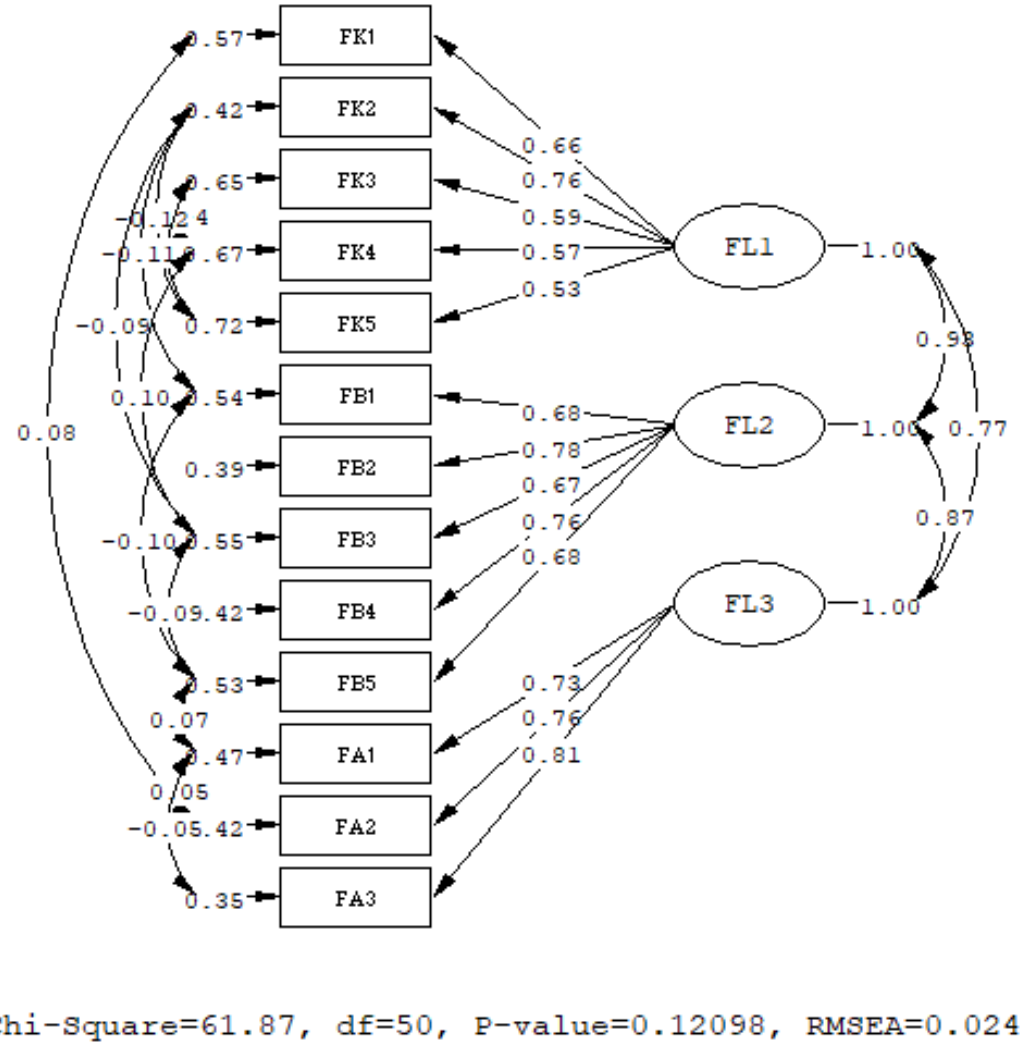


Figure 4. 1 Results of the financial literacy construct in the first order confirmatory factor analysis

Table 4. 17 Summary of the variables of the financial literacy constructs

Financial Literacy	Observed Variable	Endogenous Factors	Factor Loadings	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
FL	FL1	FK1	0.66	0.50	0.76
		FK2	0.76		
		FK3	0.59		
		FK4	0.57		
		FK5	0.53		

Table 4.17 (Continued)

Financial Literacy	Observed Variable	Endogenous Factors	Factor Loadings	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
FL	FL2	FB1	0.68	0.51	0.84
		FB2	0.78		
		FB3	0.67		
		FB4	0.76		
		FB5	0.68		
	FL3	FL1	0.73	0.59	0.81
		FL2	0.76		
		FL3	0.81		

Figure 4.1 and Table 4.17 shows that the financial literacy constructs contained three observed variables. The first observed variable is a financial knowledge with 5 factor loadings ranging between 0.53 and 0.76. The second observed one is financial behavior with 5 factor loadings ranging between 0.67 and 0.78. The third observed variable is financial attitudes with 3 factor loadings ranging between 0.73 and 0.81. The values of all observed variables were greater than 0.40, which is considered accepted (Hair et al., 2006). In addition, the average variance extracted of all variables fell between 0.50 and 0.59, which is accepted (AVE ≥ 0.50) (Fornell & Larcker, 1981; Hair et al., 2006). Scale reliability ranged from 0.76 to 0.84 which is accepted (CR ≥ 0.70) (Bagozzi & Yi, 1988; Hair et al., 2006).

Results of confirmatory factor analysis: self-efficacy

The first order confirmatory factor analysis is used to test the self-efficacy construct. The factor includes three observed variables: proactive personality (SE1), perception (SE2), and responsibility (SE3). These variables were tested with empirical data as illustrates in Table 4.18.

Table 4. 18 Goodness of fit indices of self-efficacy in the first order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	16.12	-
df	-	16	-
p-value	p > 0.05	0.44	Accepted
χ^2 / df	χ^2 / df < 2	1.01	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.99	Accepted
AGFI	≥ 0.90	0.97	Accepted
RMSEA	< 0.05	0.004	Accepted
SRMR	< 0.05	0.014	Accepted

Table 4.18 demonstrates the goodness of fit indices of self-efficacy in the first order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is 16.12 with the statistical significance at the 0.44 level (p-value=0.44). The relative chi-square value is 1.01. The comparative fit index is 1.00 and goodness of fit index is 0.99. The adjusted goodness of fit index is 0.97 and the root mean square error of approximation value is 0.004. The standardized root mean square residual value is 0.014. All goodness of fit indices is accepted, indicating that the model fit the empirical data. Therefore, it can be used to perform the first order confirmatory factor analysis of self-efficacy as depicted in Figure 4.2.

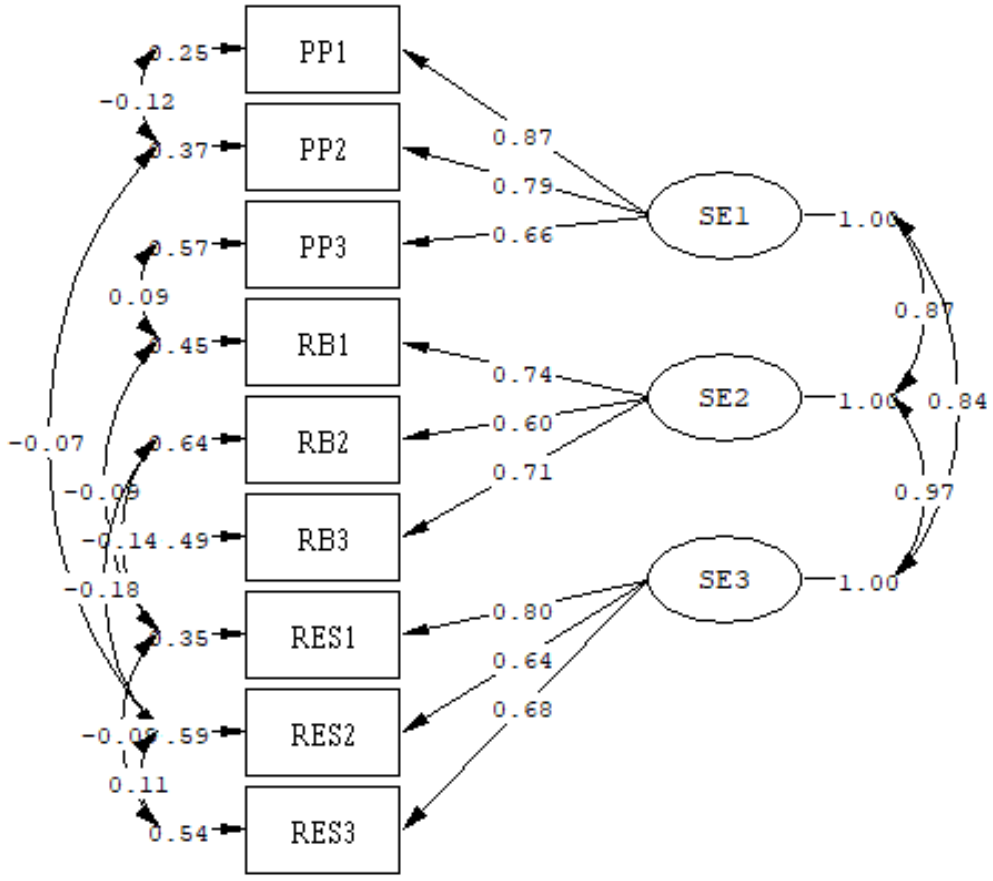


Figure 4. 2 Results of self-efficacy in the first order confirmatory factor analysis

Table 4. 19 Summary of the variables of the self-efficacy construct

Self-Efficacy	Observed Variable	Endogenous Factors	Factor Loadings	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
SE	SE1	PP1	0.87	0.61	0.82
		PP2	0.79		
		PP3	0.66		
	SE2	RB1	0.74	0.50	0.73
		RB2	0.60		
		RB3	0.71		
	SE3	RES1	0.80	0.50	0.75
		RES2	0.64		
		RES3	0.68		

According to Figure 4.2 and Table 4.19, self-efficacy is the construct that is involved with three observed variables: proactive personality, perception, and responsibility. The proactive personality (SE2) is an observed variable with 3 factor loadings ranging between 0.66 and 0.87. Perception (SE2) is an observed variable with 3 factor loadings falling between 0.60 and 0.74. The responsibility is an observed variable with 3 factor loadings falling between 0.64 and 0.80. All factor loadings were higher than 0.40 which is in an accepted level (Hair et al., 2006). Moreover, it is found that average variance extracted of each variable ranged from 0.50 to 0.61 which is accepted (AVE ≥ 0.50) (Fornell & Larcker, 1981; Hair et al., 2006). Self-efficacy scale reliability fell between 0.73 and 0.82 which is accepted (CR ≥ 0.70) (Bagozzi & Yi, 1988; Hair et al., 2006).

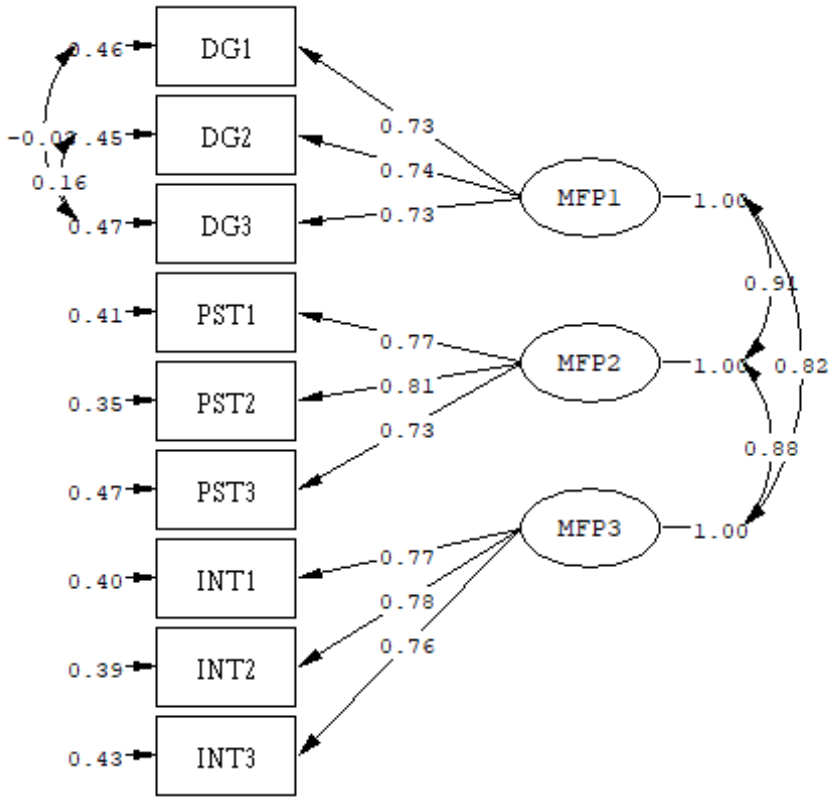
Results of confirmatory factor analysis: financial planning motivation

The first order confirmatory factor analysis is used to test the financial planning motivation. The factor includes three observed variables: direction and goal (MFP1), persistence (MFP2), and dedication (MFP3). These variables were tested with empirical data as demonstrated in Table 4.20.

Table 4. 20 Goodness of fit indices of financial planning motivation in the first order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	26.36	-
df	-	22	-
p-value	p > 0.05	0.24	Accepted
χ^2 / df	$\chi^2 / df < 2$	1.20	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.99	Accepted
AGFI	≥ 0.90	0.97	Accepted
RMSEA	< 0.05	0.022	Accepted
SRMR	< 0.05	0.015	Accepted

Table 4.20 demonstrates the goodness of fit indices of financial planning motivation in the first order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is 26.36 with the statistical significance of the 0.24 level (p-value=0.24). The relative chi-square value is 1.20 and the comparative fit index is 1.00. The goodness of fit index is 0.99 and the adjusted goodness of fit index is 0.97. The root mean square error of approximation is 0.022 and the standardized root mean square residual is 0.015. All values of the goodness of fit statistics were accepted, revealing that the model is in accordance with the empirical data. As a result, it can be used to test the first order confirmatory factor analysis of financial planning motivation as illustrates in Figure 4.3.



Chi-Square=26.36, df=22, P-value=0.23636, RMSEA=0.022

Figure 4. 3 Results of financial planning motivation in the first order confirmatory factor analysis

Table 4. 21 Summary of the variables of financial planning motivation

Financial Planning Motivation	Observed Variable	Endogenous Factors	Factor Loading	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
MFP	MFP1	DG1	0.73	0.54	0.78
		DG2	0.74		
		DG3	0.73		
	MFP2	PST1	0.77	0.59	0.81
		PST2	0.81		
		PST3	0.73		
	MFP3	INT1	0.77	0.59	0.81
		INT2	0.78		
		INT3	0.76		

According to Figure 4.3 and Table 4.21, financial planning motivation is the construct that includes three observed variables: direction and goal, persistence, and dedication. Direction and goal (MFP1) are observed variables with three factor loadings ranging from 0.73 to 0.74. Persistence (MFP2) is an observed variable with three factor loadings falling between 0.73 and 0.81. Dedication (MFP3) is an observed variable with three factor loadings ranging between 0.76 and 0.78. All factor loadings were greater than 0.40 which is accepted (Hair et al., 2006). The average variance extracted of each variable is between 0.54 and 0.59, which is accepted (AVE $\geq$ 0.50) (Fornell & Larcker, 1981; Hair et al., 2006). Financial planning motivation scale reliability fell between 0.73 and 0.82 which is accepted (CR $\geq$ 0.70) (Bagozzi & Yi, 1988; Hair et al., 2006).

Results of confirmatory factor analysis: risk in financial planning

The first order confirmatory factor analysis is used to test the risk-in-financial planning construct. The construct consists of three observed variables: return on investment, economy, and attitudes toward retirement planning. These variables are tested with empirical data as demonstrated in Table 4.22.

Table 4. 22 Goodness of fit indices of financial planning in the first order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	21.78	-
df	-	18	-
p-value	p > 0.05	0.24	Accepted
χ^2 / df	χ^2 / df < 2	1.21	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.99	Accepted
AGFI	≥ 0.90	0.97	Accepted
RMSEA	< 0.05	0.023	Accepted
SRMR	< 0.05	0.019	Accepted

Table 4.22 demonstrates the goodness of fit indices of the risk-in-financial planning construct in the first order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is equal to 21.78 with the statistical significance of the 0.24 level (p-value=0.24). The relative chi-square value is 1.21 and the comparative fit index is equal to 1.00. The goodness of fit index is 0.99 and adjusted goodness of fit index is equal to 0.97. The root mean square error of approximation is 0.023 and the standardized root mean square residual is 0.019. All values of fit indices were accepted, meaning that the model fit the empirical data. Therefore, it can be used to test the first order confirmatory factor analysis of risk in financial planning as illustrates in Figure 4.4.

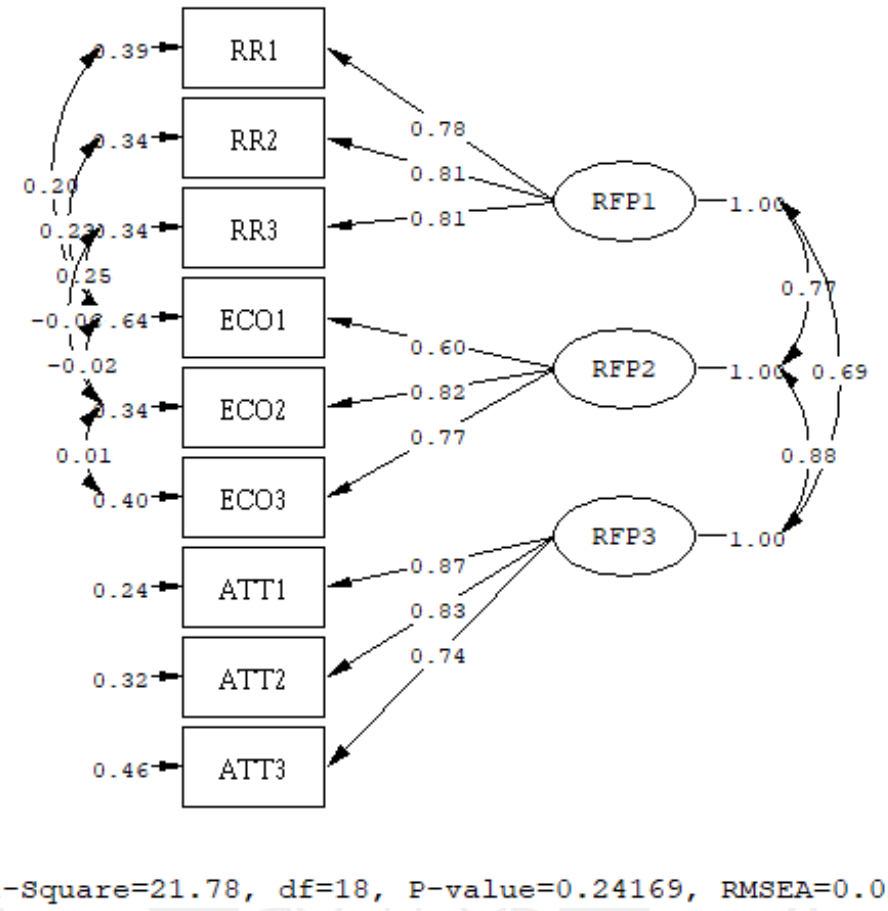


Figure 4. 4 Results of financial planning in the first order confirmatory factor analysis

Table 4. 23 Summary of the variables of risk in financial planning

Risk in Financial Planning	Observed Variable	Endogenous Factors	Factor Loading	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
REP	REP1	RR1	0.78	0.64	0.84
		RR2	0.81		
		RR3	0.81		
	REP2	ECO1	0.60	0.54	0.78
		ECO2	0.82		
		ECO3	0.77		
	REP3	ATT1	0.87	0.66	0.85
		ATT2	0.83		
		ATT3	0.74		

According to Figure 4.4 and Table 4.23, risk in financial planning is the construct that contained three observed variables: return on investment, economy, and attitudes toward retirement planning. Return on investment (RKP1) is an observed variable with 3 factor loadings ranging from 0.78 to 0.81. Economy (RKP2) is an observed variable with three factor loadings falling between 0.60 and 0.82. Attitudes toward retirement planning (RKP3) is an observed variable with three factor loadings ranging between 0.74 and 0.87. All factor loadings were greater than 0.40, which is accepted. Also, the average variance extracted (AVE) of each variable ranged between 0.54 and 0.66, which is accepted (AVE $\geq$ 0.50) (Fornell & Larcker, 1981; Hair et al., 2006). The scale reliability of risk in financial planning is found between 0.78 and 0.85, which is accepted (CR $\geq$ 0.70) (Bagozzi & Yi, 1988; Hair et al., 2006).

Results of confirmatory factor analysis for retirement planning

The model fit of retirement planning is tested by the first order confirmatory factor analysis. The model consists of three observed variables: pull factors, push factors, and supporting factors. These variables were tested with the empirical data as shown in Table 4.24.

Table 4. 24 Goodness of fit indices of retirement planning in the confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	1.01	-
df	-	2	-
p-value	p > 0.05	0.60	Accepted
χ^2 / df	$\chi^2 / df < 2$	0.51	Accepted
CFI	$\geq$ 0.90	1.00	Accepted
GFI	$\geq$ 0.90	1.00	Accepted
AGFI	$\geq$ 0.90	0.99	Accepted
RMSEA	< 0.05	0.000	Accepted
SRMR	< 0.05	0.005	Accepted

Table 4.24 demonstrates the goodness of fit indices of retirement planning in the first order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is equal to 1.01 at the statistical significance of the 0.60 level (p-value=0.60). The relative chi-square is 0.51 and the comparative fit index is 1.00. The goodness of fit index is 1.00 and the adjusted goodness of fit index is 0.99. The root mean square error of approximation is equal to 0.000 and the standardized root mean square residual is 0.005. All values of fit statistics were accepted, indicating that the model is in accordance with the empirical data as depicted in Figure 4.5.

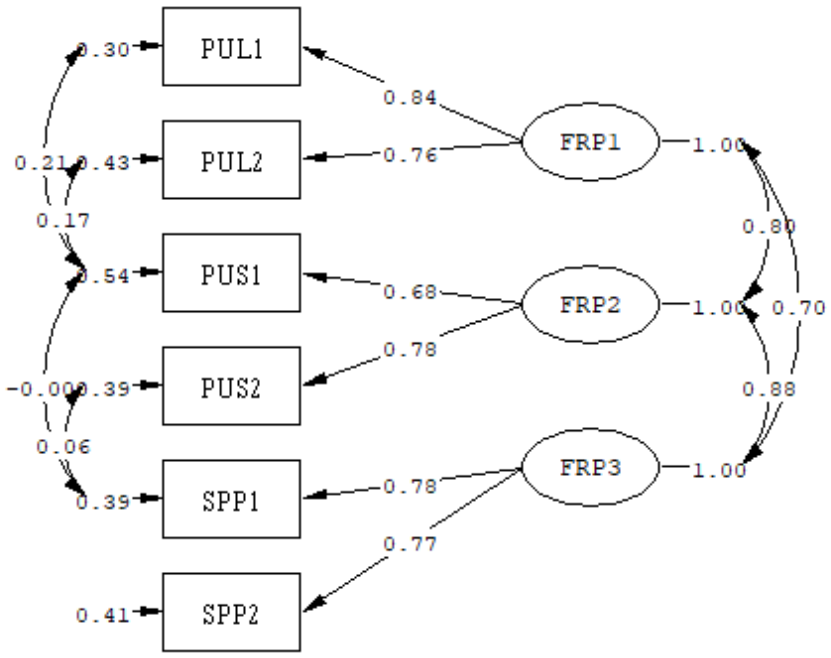


Figure 4. 5 Results of retirement planning in the confirmatory factor analysis

Table 4. 25 Summary of variables of retirement planning

Retirement Planning	Observed Variable	Endogenous Factors	Factor Loading	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
RFP	RFP1	PUL1	0.84	0.64	0.78
		PUL2	0.76		
	RFP2	PUS1	0.68	0.54	0.70
		PUS2	0.78		
	RFP3	SPP1	0.78	0.60	0.75
		SPP2	0.77		

According to Figure 4.5 and Table 4.25, retirement planning is the construct that has three observed variables: pull factors, push factors, and supporting factors. Push factor (RFP1) is an observed variable with 2 factor loadings ranging between 0.76 and 0.84. Pull factors (RFP2) is an observed variable with 2 factor loadings falling between 0.68 and 0.78. Supporting is an observed variable with 2 factor loadings ranging from 0.77 to 0.78. All factor loadings are higher than 0.40, which is accepted (Hair et al., 2006). Furthermore, it is found that the average variance extracted of each variable fell between 0.54 and 0.64, which is accepted (AVE ≥ 0.50) (Fornell & Larcker, 1981; Hair et al., 2006). The retirement planning scale reliability ranged from 0.70 to 0.78, which is accepted (CR ≥ 0.70) (Bagozzi & Yi, 1988; Hair et al., 2006).

4.6.2 Results of the Second Order Confirmatory Factor Analysis

The second order confirmatory factor analysis is adopted to test the corrected model of causal relationship between the variables. In addition, it measured latent variables and observed variables of the construct. These constructs were financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement planning. The model fit index along with standardized factor loading were the results of the second order confirmatory factor analysis. The details were provided in the following paragraphs.

Results of the second order confirmatory factory analysis: financial literacy

The model fit of the financial literacy construct by the second order confirmatory factor analysis is tested with the empirical data as illustrates in Table 4.26.

Table 4. 26 Goodness of fit indices of financial literacy in the second order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	63.26	-
df	-	50	-
p-value	p > 0.05	0.10	Accepted
χ^2 / df	χ^2 / df < 2	1.27	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.98	Accepted
AGFI	≥ 0.90	0.96	Accepted
RMSEA	< 0.05	0.026	Accepted
SRMR	< 0.05	0.025	Accepted

Table 4.26 shows the goodness of fit indices of financial literacy in the second order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is equal to 63.26 with the statistical significance of the 0.10 level (p-value=0.10) and the relative chi-square value is 1.27. The comparative fit index is 1.00 and the goodness of fit index is 0.98. The adjusted goodness of fit index is 0.96. The root mean square error of approximation is equal to 0.026 and the standardized root mean square residual is 0.025. All fit indices are accepted, meaning that the model fit the empirical data and that could be used to perform the confirmatory factor analysis of financial literacy as depicted in Figure 4.6.

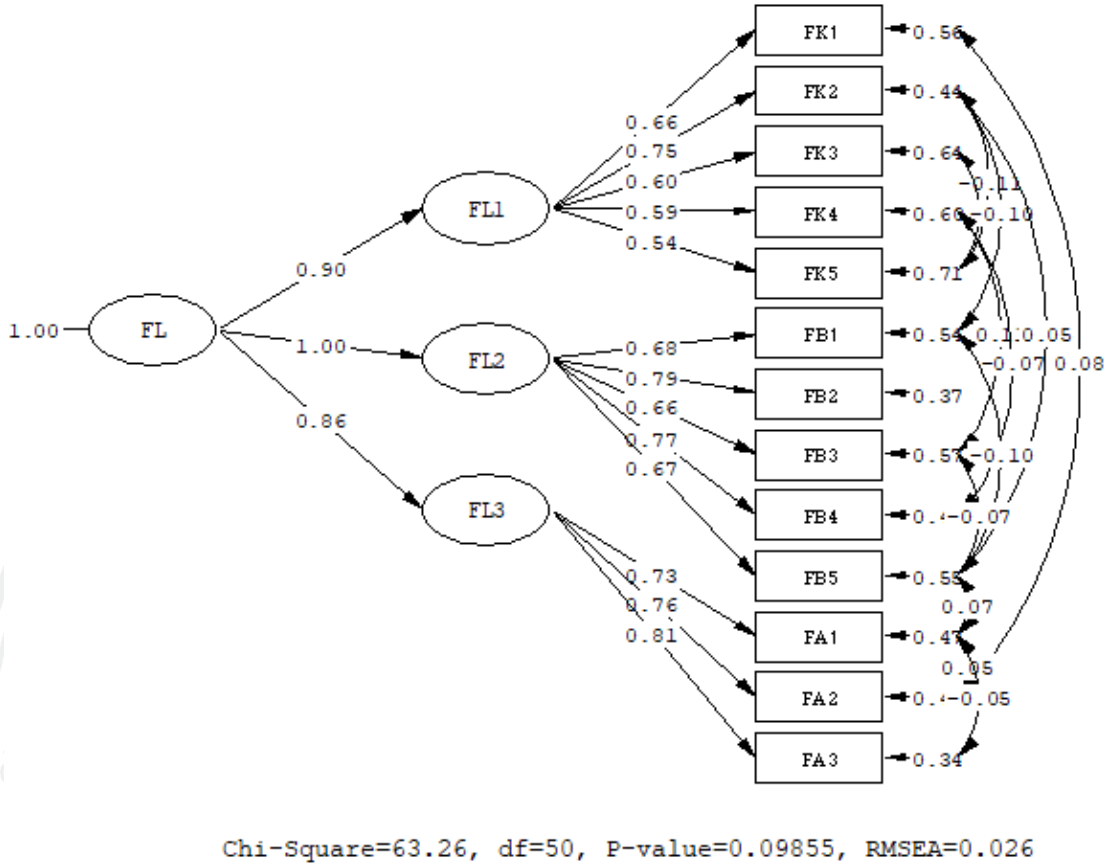


Figure 4. 6 Results of financial literacy in the second order confirmatory factor analysis

Table 4. 27 Summary of the variables of financial literacy

Financial Literacy	Endogenous Factors	Standardized Factor loading	Order of Importance	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
FL	FL1	0.90	2	0.85	0.95
	FL2	1.00	1		
	FL3	0.86	3		

According to Figure 4.6 and Table 4.27, it is found that financial knowledge is a variable (FL1) with the standardized factor loading of 0.90. Financial behavior (FL2) is a variable of the financial literacy construct with the standardized factor loading of 1.00. Financial attitudes (FL3) is a variable of the financial literacy construct with the standardized factor loading of 0.86. All standardized factor

loadings were greater than 0.40, which were accepted (Hair et al., 2006). In addition, the average variance extracted of each variable of financial literacy is equal to 0.85, which is accepted AVE ≥ 0.50) (Fornell & Larcker, 1981; Hair et al., 2006). Scale reliability of financial literacy is 0.95, which is accepted (CR ≥0.70) (Bagozzi & Yi, 1988; Hair et al., 2006). Thus, it can be concluded that all variables of the financial literacy construct were reliable as indicated by the second order confirmatory factor analysis.

As far as the testing of standardized factor loadings is concerned, it is found from the results of the second order confirmatory factor analysis that the first order of importance of financial literacy is financial behavior (FL2), followed by financial knowledge (FL1) and financial attitudes (FL3), respectively.

Results of the second order confirmatory factor analysis: self-efficacy

The model fit of the self-efficacy construct in the second order confirmatory factor analysis is tested with the empirical data as illustrates in Table 4.28.

Table 4. 28 Goodness of fit indices of self-efficacy in the second order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	17.59	-
df	-	14	-
p-value	p > 0.05	0.23	Accepted
χ^2 / df	χ^2 / df < 2	1.26	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.99	Accepted
AGFI	≥ 0.90	0.97	Accepted
RMSEA	< 0.05	0.025	Accepted
SRMR	< 0.05	0.018	Accepted

Table 4.28 reveals the goodness of fit indices of the self-efficacy construct in the second order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is equal to 17.59 with

the statistical significance of the 0.23 level (p-value=0.23). The relative chi-square value is 1.26 and the comparative fit index is equal to 1.00. The goodness of fit index is 0.99 and the adjusted goodness of fit index is 0.97. The root mean square error of approximation is 0.025 and the standardized root mean square residual is 0.018. All values of fit statistics were accepted, indicating that the model is in accordance with the empirical data and that could be used to perform the confirmatory factor analysis of self-efficacy as shown in Figure 4.7.

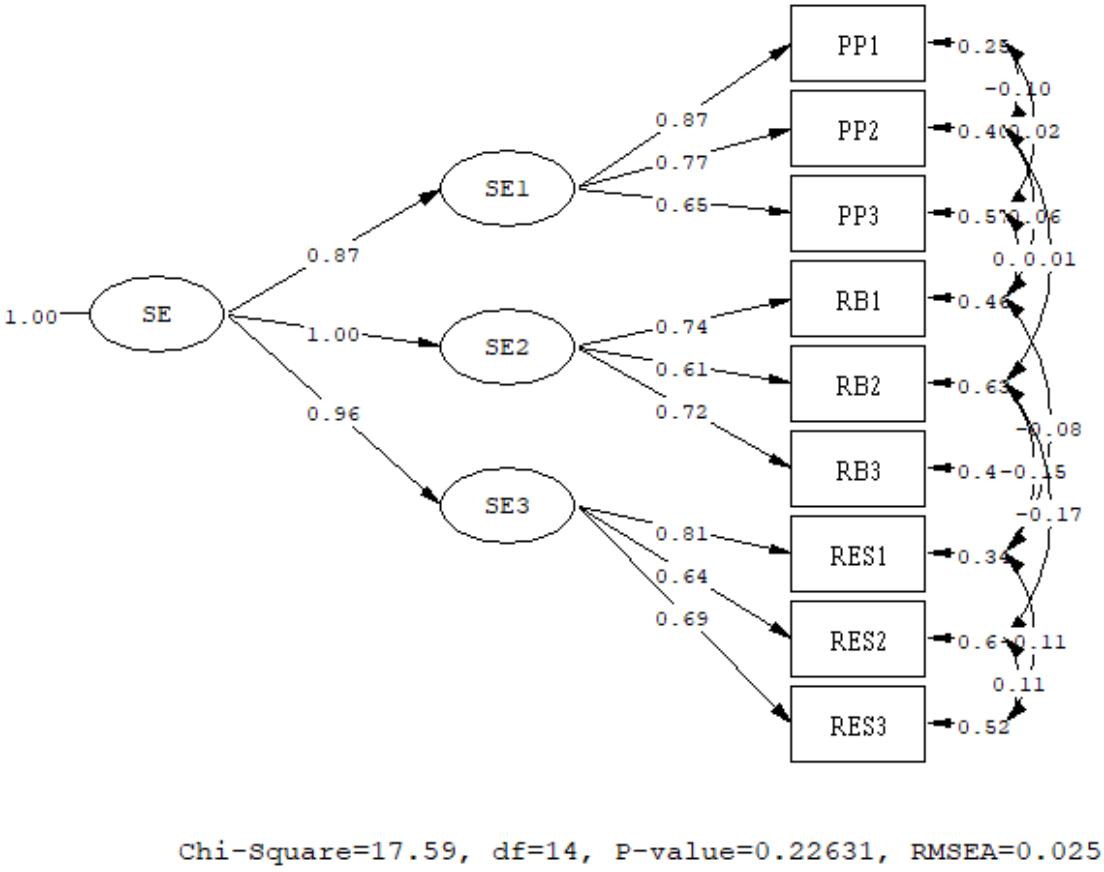


Figure 4. 7 Results of self-efficacy in the second order confirmatory factor analysis

Table 4. 29 Summary of the variables of self-efficacy

Self-Efficacy	Endogenous Factors	Standardized Factor loading	Order of Importance	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
SE	SE1	0.87	3	0.89	0.96
	SE2	1.00	1		
	SE3	0.96	2		

According to Figure 4.7 and Table 4.29, it is found that proactive personality (SE1) is a variable of the self-efficacy construct with the standardized factor loading of 0.87. Perception (SE2) is a variable of the self-efficacy construct with the standardized factor loading of 1.00. Responsibility (SE3) is a variable of the self-efficacy construct with the standardized factor loading of 0.96. All standardized factor loadings were higher than .040, which were accepted (Hair et al., 2006). Furthermore, the average variance extracted of each variable of self-efficacy is equal to 0.89, which is accepted (CR ≥0.70) (Bagozzi & Yi, 1988; Hair et al., 2006). Therefore, it can be concluded that all variables of self-efficacy were reliable as indicated by the second order confirmatory factor analysis.

The results of the second order confirmatory factor analysis reveal the test of standardized factor loadings, showing that the first order of importance of self-efficacy is perception (SE2), followed by responsibility (SE3) and proactive personality (SE1), respectively.

Results of the second order confirmatory factor analysis: financial planning motivation, the model fit of financial planning motivation in the second order confirmatory factor analysis is tested with the empirical data as illustrates in Table 4.30.

Table 4. 30 Goodness of fit indices of financial planning motivation in the second order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	26.36	-
df	-	22	-
p-value	p > 0.05	0.24	Accepted
χ^2 / df	χ^2 / df < 2	1.20	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.99	Accepted
AGFI	≥ 0.90	0.97	Accepted
RMSEA	< 0.05	0.022	Accepted
SRMR	< 0.05	0.019	Accepted

Table 4.30 shows the goodness of fit indices of financial planning motivation in the second order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is equal to 26.36 with the statistical significance of the 0.24 level (p-value=0.24). The relative chi-square value is 1.20 and the comparative fit index is 1.00. The goodness of fit index is 0.99 and the adjusted goodness of fit index is 0.97. The root mean square error of approximation is equal to 0.022 and the standardized root mean square residual is 0.019. All fit indices were accepted, indicating that the model fit the empirical data and that could be used to perform the confirmatory factor analysis of financial planning motivation as depicted in Figure 4.8.

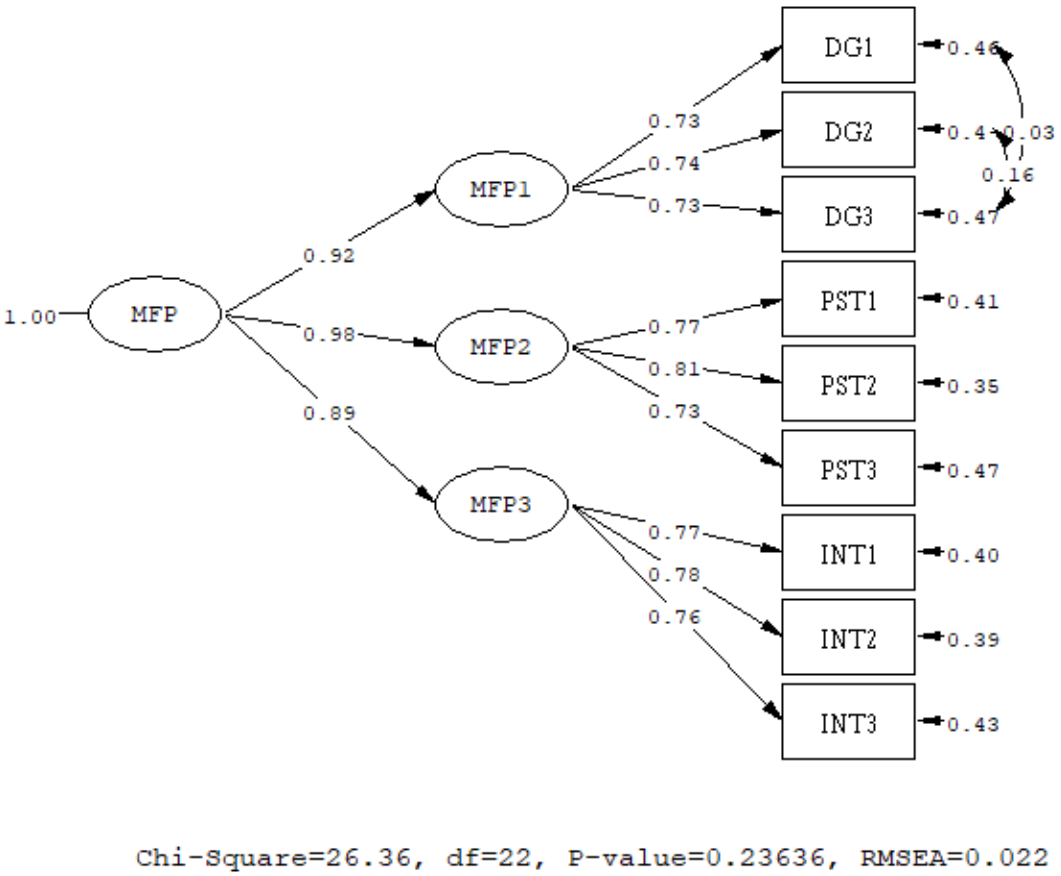


Figure 4. 8 Results of financial motivation planning in the second order confirmatory factor analysis

Table 4. 31 Summary of the variables of financial planning motivation

Financial Planning Motivation	Endogenous Factors	Standardized Factor loading	Order of Impor-tance	Average Variance Extracted: AVE or ρ_v	Scale Reliability: CR or ρ_c
MFP	MFP1	0.92	2	0.87	0.95
	MFP2	0.98	1		
	MFP3	0.89	3		

According to Figure 4.8 and Table 4.31, it is found that direction and goal (MFP1) has the standardized factor loading of 0.92. Persistence (MFP3) has the standardized factor loading of 0.98. Dedication (MFP3) has the standardized factor loading of 0.89. All the standardized factor loadings were greater than 0.40, which were accepted (Hair et al., 2006). Also, it is found that the average variance extracted of each subcomponent is equal to 0.87, which is accepted (AVE ≥ 0.50) (Fornell & Larcker, 1981; Hair et al., 2006). Therefore, it can be concluded that all variables of financial planning motivation were reliable as found from the second order confirmatory factor analysis.

The results of the second order confirmatory factor analysis reveal the test of standardized factor loadings, showing that the first order of importance of financial planning motivation is persistence (MFP2), followed by direction and goal (MFP1) and dedication (MFP3), respectively.

Results of the second order confirmatory factor analysis of risk in financial planning

The model fit of risk in financial planning in the second order confirmatory factor analysis is tested with the empirical data as illustrates in Table 4.32.

Table 4. 32 Goodness of fit indices of risk in financial planning in the second order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	21.78	-
df	-	18	-
p-value	p > 0.05	0.24	Accepted
χ^2 / df	$\chi^2 / df < 2$	1.21	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.99	Accepted
AGFI	≥ 0.90	0.97	Accepted
RMSEA	< 0.05	0.023	Accepted
SRMR	< 0.05	0.019	Accepted

Table 4.32 demonstrates the goodness of fit indices of risk in financial planning in the second order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is equal to 21.78 with the statistical significance of the 0.24 level (p-value=0.24). The relative chi-square is 1.21 and the relative fit index is 1.00. The goodness of fit index is 0.99 and the adjusted goodness of fit index is 0.97. The root mean square error of approximation is equal to 0.023 and the standardized root mean square residual is 0.019. All values of fit indices were accepted, meaning that the model is in accordance with the empirical data and that could be used to perform the second order confirmatory factor analysis of risk in financial planning as illustrates in Figure 4.9.

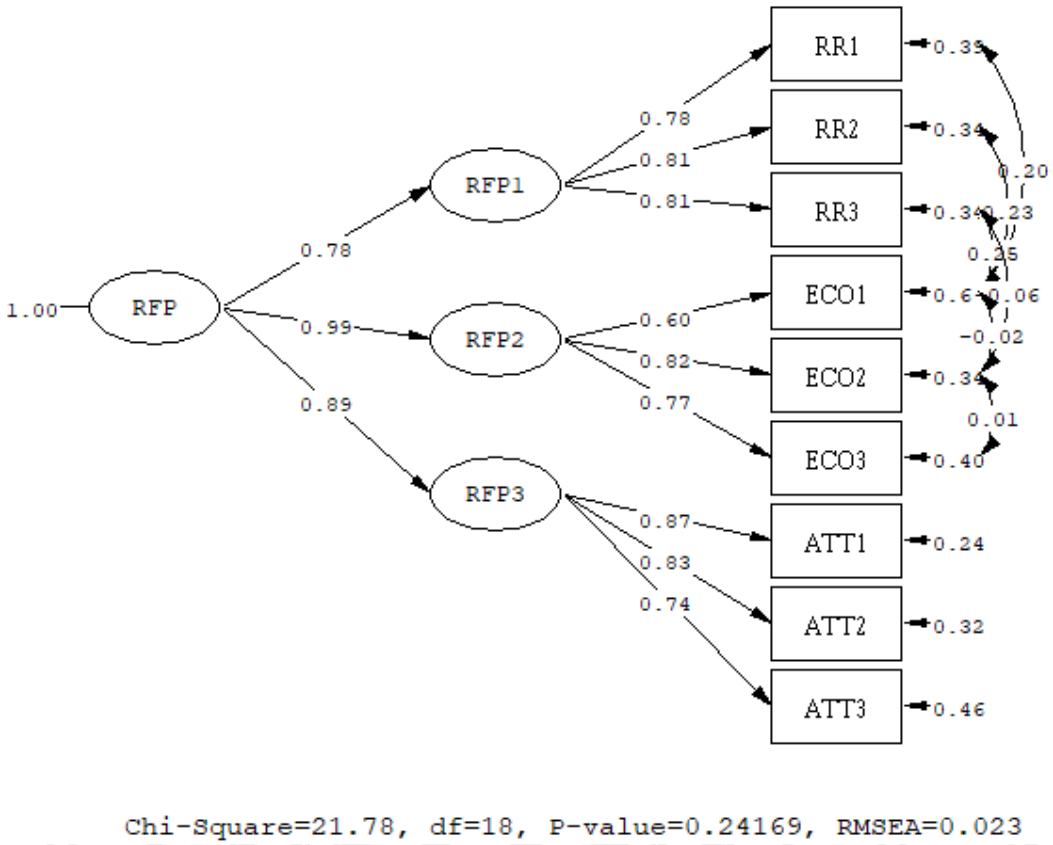


Figure 4. 9 Results of risk in financial planning in the second order confirmatory factor analysis

Table 4. 33 Summary of the variables of risk in financial planning

Risk in Financial Planning	Endogenous Factors	Standardized Factor loading	Order of Importance	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
RKP	RKP1	0.78	3	0.79	0.92
	RKP2	0.99	1		
	RKP3	0.89	2		

According to Figure 4.9 and Table 4.33, it is found that return on investment (RKP1) has the standardized factor loading of 0.78. Economy (RKP2) has the standardized factor loading of 0.99. Attitudes toward retirement planning has the standardized loading of 0.89. All standardized factor loadings were higher than 0.40, which were accepted (Hair et al., 2006). Moreover, the average variance extracted of

each variable of risk in financial planning is equal to 0.79, which is accepted (AVE ≥ 0.50) (Fornell & Larcker, 1981; Hair et al., 2006). Consequently, it can be concluded that all variables of risk in financial planning were reliable as found from the second order confirmatory factor analysis.

The results of the second order confirmatory factor analysis reveal the test of standardized factor loadings, showing that the first order of importance of risk in financial planning is economy (RKP2), followed by attitudes toward retirement planning (RKP3) and return on investment (RKP1), respectively.

Results of the second order confirmatory factor analysis of retirement planning

The model fit of retirement planning in the second order confirmatory factor analysis is tested with the empirical data as shown in Table 4.34.

Table 4. 34 Goodness of fit indices of retirement planning in the second order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	1.01	-
df	-	2	-
p-value	p > 0.05	0.60	Accepted
χ^2 / df	χ^2 / df < 2	0.51	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	1.00	Accepted
AGFI	≥ 0.90	0.99	Accepted
RMSEA	< 0.05	0.000	Accepted
SRMR	< 0.05	0.005	Accepted

Table 4.34 shows the goodness of fit indices of retirement planning in the second order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is equal to 1.01 with the statistical significance of the 0.60 level (p-value=0.60). The relative chi-square is 0.51 and the comparative fit index is equal to 1.00. The goodness of fit index is 1.00 and

the adjusted goodness of fit index is 0.99. The root mean square error of approximation is 0.000 and the standardized root mean square residual is equal to 0.005. All values of fit statistics were accepted, demonstrating that the model fit the empirical data and that it can be used to conduct the confirmatory factor analysis of retirement planning as illustrates in Figure 4.10.

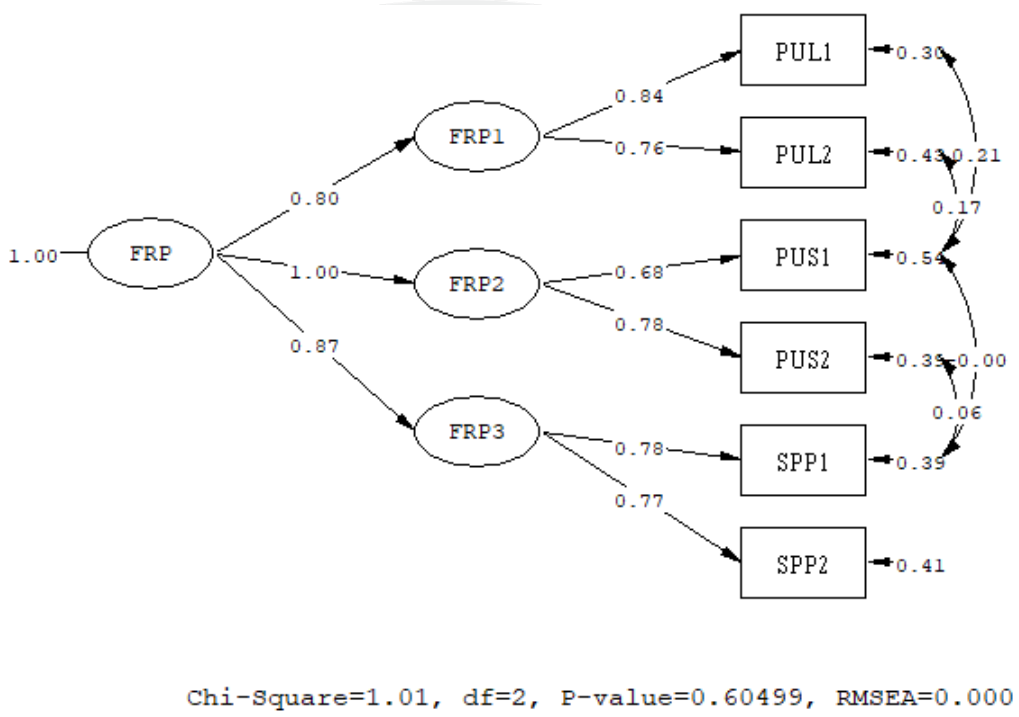


Figure 4. 10 Results of retirement planning in the second order confirmatory factor analysis

Table 4. 35 Summary of variables of the retirement planning construct

Retire-ment Planning	Endoge-nous Factors	Standardized Factor loading	Order of Impor-tance	Average Variance Extracted (AVE or ρ_v)	Scale Reliability (CR or ρ_c)
RFP	RFP1	0.80	3	0.80	0.93
	RFP2	1.00	1		
	RFP3	0.87	2		

According to Figure 4.10 and Table 4.35, it is found that pull factors (RFP1) has the standardized factor loading of 0.80. Pull factors (RFP2) has the standardized

factor loading of 1.00. Supporting factors (RFP3) has the standardized factor loading of 0.87. All standardized factor loadings were greater than 0.40, which were accepted (Hair et al., 2006). Additionally, the average variance extracted (AVE) of each variable of retirement planning is equal to 0.80, which is accepted (AVE $\geq$ 0.50) (Fornell & Larcker, 1981; Hair et al., 2006). Therefore, it can be concluded that all variables of retirement planning were reliable as found from the second order confirmatory factor analysis.

The results of the second order confirmatory factor analysis reveal the test of standardized factor loadings, showing that the first order of importance of retirement planning is push factors (RFP2), followed by supporting factors (RFP3) and pull factors (RFP1), respectively.

4.6.3 Results of Factor Loadings of Observed Variables

Factor loading of most observed variables is greater than 0.40 with the statistical significance at the 0.01 level. The results of factor loadings of a set of observed variables were explained in Figure 4.11 – 4.15.

Financial Literacy

The model fit of the financial literacy construct is tested in the first order confirmatory factor analysis. The tested construct has a set of observed variables: financial knowledge (FL1), financial behavior (FL2), and financial attitudes (FL3). The test is conducted with empirical data and the results are shown in Table 4.36.

Table 4. 36 The goodness of model fit of the financial literacy model measurement in the first order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	0.12	-
df	-	1	-
p-value	p > 0.05	0.73	Accepted
χ^2 / df	$\chi^2 / df < 2$	0.12	Accepted
CFI	$\geq$ 0.90	1.00	Accepted

Table 4.36 (continued)

Goodness of Fit Statistics	Description	Value	Interpretation
GFI	≥ 0.90	1.00	Accepted
AGFI	≥ 0.90	1.00	Accepted
RMSEA	< 0.05	0.000	Accepted
SRMR	< 0.05	0.002	Accepted

Table 4.36 demonstrates the goodness of fit of the financial literacy measurement model in the first order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is 0.12 with the statistical significance of the 0.73 level (p-value=0.73). The relative chi-square is 0.12 and the comparative fit index is 1.00. The goodness of fit index is 1.00 and the adjusted goodness of fit index is 1.00. The root mean square error of approximation is 0.000 and the standardized root mean square residual is 0.002. All values of fit statistics were accepted, indicating that the model fit the empirical data. Therefore, it is appropriate for conducting factor analysis as found from the financial literacy model measurement by the first order confirmatory factor analysis. Figure 4.11 illustrates the results of the financial literacy model measurement in the first order confirmatory factor analysis.

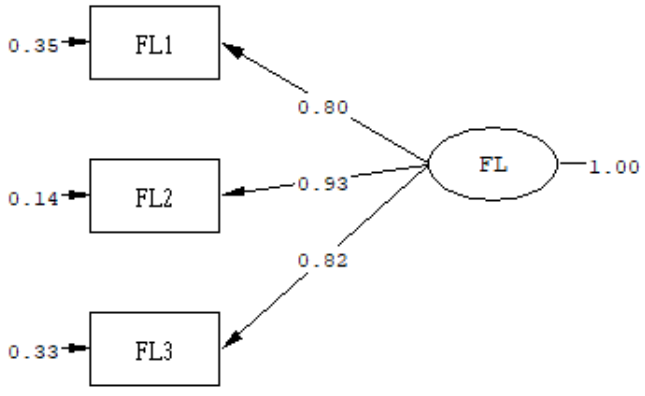


Figure 4. 11 Results of the financial literacy measurement model in the first confirmatory factor analysis

Table 4. 37 The financial literacy measurement model in the first order confirmatory factor analysis

Observed Variables	Factor Loadings		t	R^2	Factor Score Coefficient
	Beta	b (SE)			
FL1	0.80	0.59(0.03)	18.65**	0.65	0.27
FL2	0.93	0.65(0.03)	23.18**	0.86	0.88
FL3	0.82	0.62(0.03)	19.51**	0.67	0.29

** $p < 0.01$

Table 4.37 shows that the order of most importance and the least importance of the factor loadings of the financial literacy indicator: financial behavior (FL2), financial attitudes (FL3), and financial knowledge (FL1), respectively. The factor loadings were 0.93, 0.82, and 0.80, respectively. In addition, their covariances were 86.0, 67.0, and 65.0, respectively.

Self-Efficacy

The model fit of the self-efficacy construct is tested in the first order confirmatory factor analysis. The tested construct has a set of observed variables: proactive personality (SE1), perception (SE2), and responsibility (SE3). These variables were tested with empirical data and the results were shown in Table 4.38.

Table 4. 38 The goodness of model fit of the self-efficacy model measurement in the first order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	0.64	-
df	-	1	-
p-value	$p > 0.05$	0.434	Accepted
χ^2 / df	$\chi^2 / df < 2$	0.64	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	1.00	Accepted
AGFI	≥ 0.90	0.99	Accepted
RMSEA	< 0.05	0.000	Accepted
SRMR	< 0.05	0.003	Accepted

Table 4.38 illustrates the goodness of fit of the self-efficacy measurement model in the first order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is 0.64 with the statistical significance of the 0.43 level (p-value=0.43). The relative chi-square is 0.64 and the comparative fit index is 1.00. The goodness of fit index is 1.00 and the adjusted goodness of fit index is 0.99. The root mean square error of approximation is 0.000 and the standardized root mean square residual is 0.003. All values of fit statistics were accepted, meaning that the model fit the empirical data. Therefore, it is appropriate for conducting factor analysis as found from the self-efficacy model measurement by the first order confirmatory factor analysis. Figure 4.12 depicted the results of the self-efficacy model measurement in the first order confirmatory factor analysis.

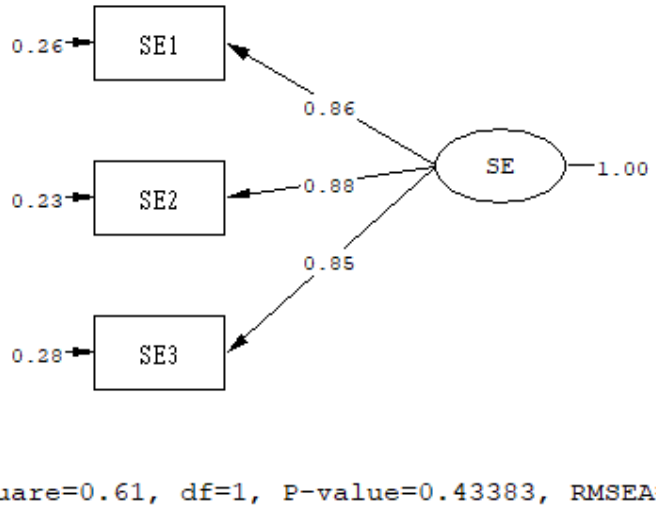


Figure 4. 12 Results of the self-efficacy measurement model in the first confirmatory factor analysis

Table 4. 39 The self-efficacy measurement model in the first order confirmatory factor analysis

Observed Variables	Factor Loadings		t	R^2	Factor Score Coefficient
	Beta	b (SE)			
SE1	0.86	0.63(0.03)	20.74**	0.74	0.46
SE2	0.88	0.66(0.03)	21.92**	0.77	0.52
SE3	0.85	0.66(0.03)	20.34**	0.72	0.41

** $p < 0.01$

Table 4.39 demonstrates that the order of most importance and the least importance of the factor loadings of the self-efficacy indicator: perception (SE2), proactive personality (SE1), and responsibility (SE3), respectively. The factor loadings were 0.88, 0.86, and 0.85, respectively. In addition, their covariances were 77.0, 74.0, and 72.0, respectively.

Financial Planning Motivation

The model fit of the financial planning motivation construct is tested in the first order confirmatory factor analysis. The tested construct has a set of observed variables: direction and goal (MFP1), persistence (MFP2), and dedication (MFP3). These variables were tested with empirical data and the results were shown in Table 4.40.

Table 4. 40 The goodness of model fit of the financial planning motivation model measurement in the first order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	0.07	-
df	-	1	-
p-value	p > 0.05	0.79	Accepted
χ^2 / df	$\chi^2 / df < 2$	0.07	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	1.00	Accepted
AGFI	≥ 0.90	1.00	Accepted
RMSEA	< 0.05	0.000	Accepted
SRMR	< 0.05	0.001	Accepted

Table 4.40 explains the goodness of fit of the financial planning motivation measurement model in the first order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is 0.07 with the statistical significance of the 0.79 level (p-value=0.79). The relative chi-square is 0.07 and the comparative fit index is 1.00. The goodness of fit index is 1.00 and the adjusted goodness of fit index is 1.00. The root mean square error of

approximation is 0.000 and the standardized root mean square residual is 0.001. All values of fit statistics were accepted, meaning that the model fit the empirical data. Therefore, it is appropriate for conducting factor analysis as found from the financial planning motivation model measurement in the first order confirmatory factor analysis. Figure 4.13 depicted the results of the financial planning motivation model measurement in the first order confirmatory factor analysis.

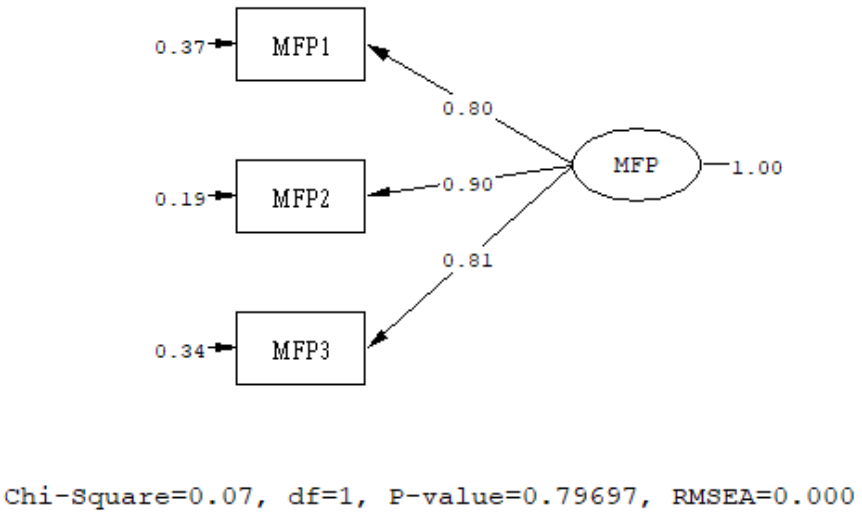


Figure 4. 13 Results of the financial planning motivation measurement model in the first confirmatory factor analysis

Table 4. 41 The financial planning motivation measurement model in the first order confirmatory factor analysis

Observed Variables	Factor Loadings		t	R^2	Factor Score Coefficients
	Beta	b (SE)			
MFP1	0.80	0.62(0.03)	18.08**	0.63	0.31
MFP2	0.90	0.71(0.03)	21.59**	0.81	0.67
MFP3	0.81	0.64(0.03)	19.15**	0.66	0.34

** $p < 0.01$

Table 4.41 indicates the order of most importance and the least importance of the factor loadings of the financial planning motivation indicator: persistence (MFP2), dedication (MFP3), and direction and goal (MFP1). The factor loadings were 0.90, 0.81, and 0.80, respectively. In addition, their covariances were 81.0, 66.0, and 63.0, respectively.

Risk in Financial Planning

The model fit of the risk-in-financial planning construct is tested in the first order confirmatory factor analysis. The tested construct has a set of observed variables: return on investment (RKP1), economy (RKP2), and attitudes toward retirement planning (RKP3). These variables were tested with empirical data and the results were shown in Table 4.42.

Table 4. 42 The goodness of model fit of the risk-in-financial planning model measurement in the first order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	0.33	-
df	-	1	-
p-value	p > 0.05	0.57	Accepted
χ^2 / df	χ^2 / df < 2	0.33	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	1.00	Accepted
AGFI	≥ 0.90	1.00	Accepted
RMSEA	< 0.05	0.000	Accepted
SRMR	< 0.05	0.003	Accepted

Table 4.42 describes the goodness of fit of the financial planning motivation measurement model in the first order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is 0.12 with the statistical significance of the 0.73 level (p-value=0.73). The relative chi-square is 0.12 and the comparative fit index is 1.00. The goodness of fit index is 1.00 and the adjusted goodness of fit index is 1.00. The root mean square error of approximation is 0.000 and the standardized root mean square residual is 0.003. All values of fit statistics were accepted, meaning that the model fit the empirical data. Therefore, it is appropriate for conducting factor analysis as found from the risk-in-financial planning model measurement in the first order confirmatory factor analysis. Figure 4.14 illustrates the results of the risk-in-financial planning model measurement in the first order confirmatory factor analysis.

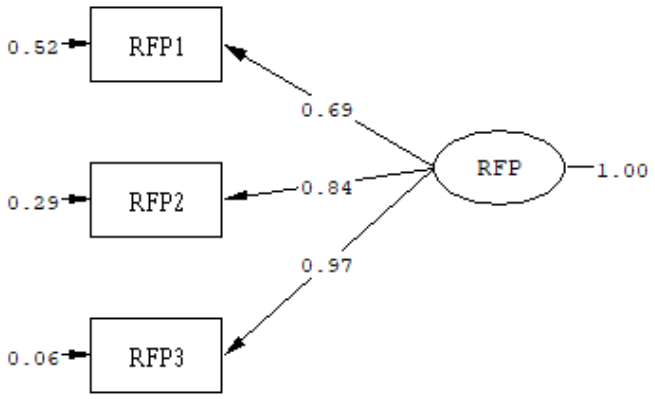


Figure 4. 14 Results of the risk-in-financial planning measurement model in the first confirmatory factor analysis

Table 4. 43 The first order confirmatory factor analysis of the risk-in-financial planning measurement model

Observed Variables	Factor Loadings		t	R^2	Factor Score Coefficients
	Beta	b (SE)			
RKP1	0.69	0.44(0.03)	15.39**	0.48	0.10
RKP2	0.84	0.53(0.03)	19.58**	0.71	0.22
RKP3	0.97	0.61(0.03)	24.14**	0.94	1.28

** $p < 0.01$

Table 4.43 indicates the order of most importance and the least importance of the factor loadings of the risk-in-financial planning indicator: attitudes toward retirement planning (RKP3), economy (RKP2), and return on investment (RKP1). The factor loadings were 0.97, 0.84, and 0.69, respectively. In addition, their covariances were 94.0, 71.0, and 48.0, respectively.

Retirement Planning

The model fit of the retirement planning construct is tested in the first order confirmatory factor analysis. The tested construct has a set of observed variables: pull factors (RFP1), push factors (RFP2), and supporting factors (RFP3). These variables were tested with empirical data and the results were demonstrated in Table 4.44.

Table 4. 44 The goodness of model fit of the retirement planning model measurement in the first order confirmatory factor analysis

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	0.16	-
df	-	1	-
p-value	p > 0.05	0.69	Accepted
χ^2 / df	χ^2 / df < 2	0.16	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	1.00	Accepted
AGFI	≥ 0.90	1.00	Accepted
RMSEA	< 0.05	0.000	Accepted
SRMR	< 0.05	0.003	Accepted

Table 4.44 indicates the goodness of fit of the retirement planning measurement model in the first order confirmatory factor analysis. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is 0.16 with the statistical significance of the 0.69 level (p-value=0.69). The relative chi-square is 0.16 and the comparative fit index is 1.00. The goodness of fit index is 1.00 and the adjusted goodness of fit index is 1.00. The root mean square error of approximation is 0.000 and the standardized root mean square residual is 0.003. All values of fit statistics were accepted, explaining that the model fit the empirical data. Therefore, it is appropriate for conducting factor analysis as found from the retirement planning model measurement in the first order confirmatory factor analysis. Figure 4.15 shows the results of the retirement planning model measurement in the first order confirmatory factor analysis.

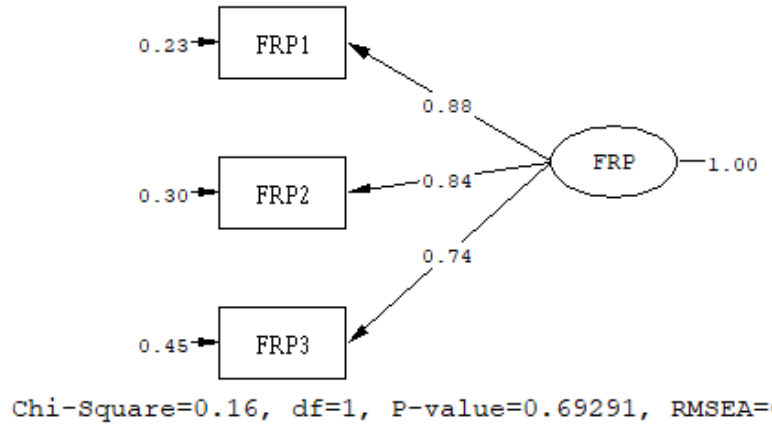


Figure 4. 15 Results of the retirement planning measurement model in the first confirmatory factor analysis

Table 4. 45 The retirement planning measurement model in the first order confirmatory factor analysis

Observed Variables	Factor Loadings		t	R^2	Factor Score Coefficients
	Beta	b (SE)			
RFP1	0.88	0.62(0.03)	20.16**	0.77	0.67
RFP2	0.84	0.64(0.03)	18.98**	0.70	0.47
RFP3	0.74	0.63(0.04)	16.66**	0.55	0.25

** p < 0.01

Table 4.45 indicated the order of most importance and the least importance of the factor loadings of the retirement planning indicator: pull factors (RFP1), push factors (RFP2), and supporting factors (RFP3). The factor loadings are 0.88, 0.84, and 0.74, respectively. In addition, their covariances were 77.0, 70.0, and 55.0, respectively.

4.7 Structure Model

Results of the Structural Equation Modelling (SEM)

With the results of the confirmatory factor analysis, the structural equation modelling is further employed to test the goodness of fit between defined theoretical causal model and empirical data. In addition, hypotheses testing is conducted. Its results and an analysis of empirical data are demonstrated in Figure 1.1. The details are provided in Table 4.46 and Figure 4.16

Table 4. 46 The goodness of fit indices of the structural equation modelling of financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society against empirical data before the model adjustment

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	190.16	-
df	-	80	-
p-value	p > 0.05	0.00	Failed
χ^2 / df	$\chi^2 / df < 2$	2.38	Failed
CFI	≥ 0.90	0.99	Accepted
GFI	≥ 0.90	0.94	Accepted
AGFI	≥ 0.90	0.91	Accepted
RMSEA	< 0.05	0.059	Failed
SRMR	< 0.05	0.026	Accepted

Table 4.46 shows the goodness of fit indices of the structural equation modelling of financial literacy and retirement financial planning among people living in the northeast of Thailand in the context of an ageing society against empirical data before the model adjustment. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is 190.16 with the statistical significance of the 0.00 level (p-value=0.00). The relative chi-square value is 2.38 and the comparative fit index is 0.99. The goodness of fit index is 0.94 and the adjusted goodness of fit index is 0.91. The root mean square error of approximation is equal to 0.059 and the standardized root mean square residual is equal to 0.026. Some of fit indices were accepted, meaning that the model did not fit the empirical data as shown in Figure 4.16. As a result, model modification is applied to adjust the parameters in the model by the model modification indices (MI). Then, the parameters were adjusted by relaxing the agreement which allowed the errors to be correlated. After the model adjustment, the goodness of fit indices is consistent with empirical data as shown in Table 4.47 and Figure 4.17.

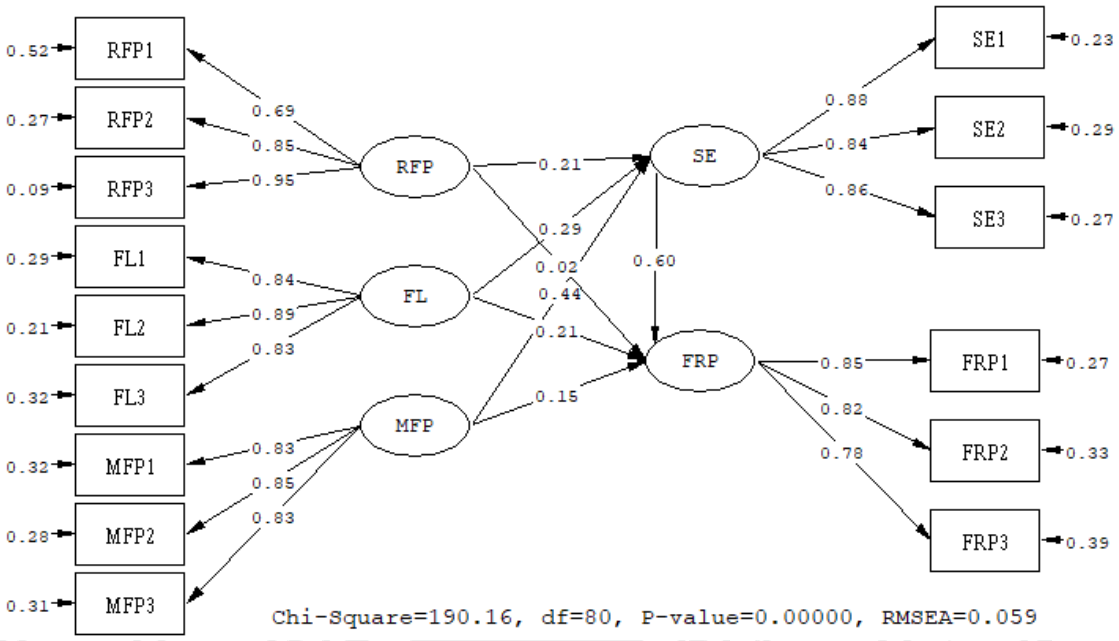


Figure 4. 16 The structural equation modelling of financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society against empirical data before the model adjustment

Table 4. 47 The goodness of fit indices of the structural equation modelling of financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people in the northeastern region of Thailand in the context of an ageing society against empirical data after the model adjustment

Goodness of Fit Statistics	Description	Value	Interpretation
χ^2	Not statistically significant at the level > 0.05	79.59	-
df	-	65	-
p-value	p > 0.05	0.11	Accepted
χ^2 / df	χ^2 / df < 2	1.16	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.97	Accepted
AGFI	≥ 0.90	0.95	Accepted
RMSEA	< 0.05	0.024	Accepted
SRMR	< 0.05	0.016	Accepted

Table 4.47 demonstrates the goodness of fit indices of the structural equation modelling of financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeast of Thailand in the context of an ageing society against empirical data after the model adjustment. The goodness of fit statistics used in the testing indicated the following values. The chi-square value is 79.59 with the statistical significance of the 0.11 level (p-value=0.11). The relative chi-square value is 1.16 and the comparative fit index is 1.00. The goodness of fit index is 0.97 and the adjusted goodness of fit index is 0.95. The root mean square error of approximation is equal to 0.024 and the standardized root mean square residual is equal to 0.016. All fit indices were accepted, meaning that the model did not fit the empirical data as shown in Figure 4.17.

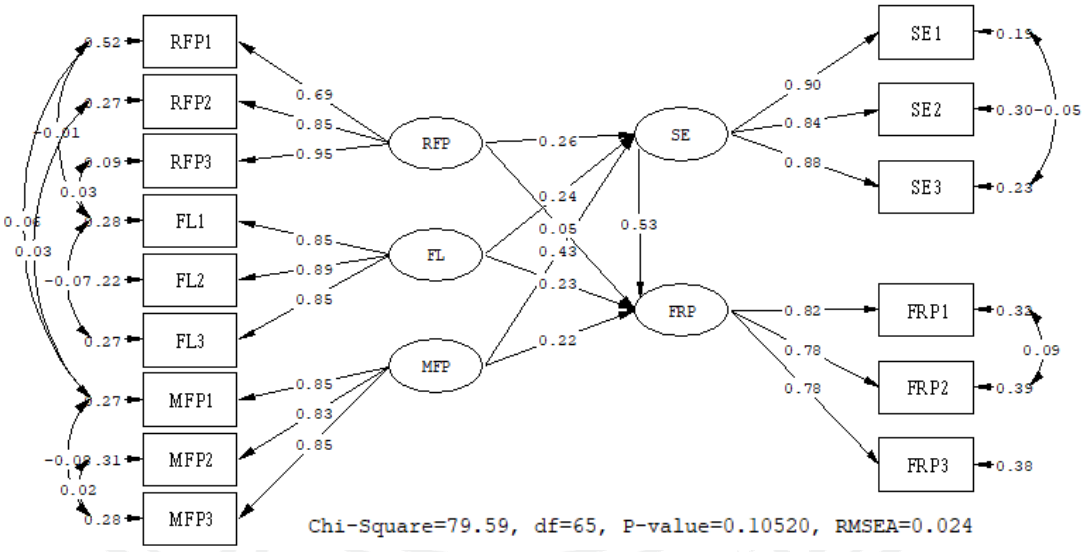


Figure 4. 17 The structural equation modelling of financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeastern region against empirical data after model adjustment

4.8 Hypotheses Testing

Results of Variable Effects According to Research Hypotheses

At this stage, the researcher tested the effects of antecedents and presented the results of causal relationship in financial literacy, self-efficacy, financial planning

motivation, risk in financial planning and retirement financial planning among people living the northeastern region of Thailand in the context of an ageing society. The causal relationship is developed to explain the research hypotheses as demonstrated in Table 4.48.

Table 4. 48 Variable effects according to research hypotheses

Antecedents	Consequences					
	Self-Efficacy (SE)			Retirement Financial Planning (RFP)		
	DE	IE	TE	DE	IE	TE
Risk in financial planning (RKP)	0.26**	-	0.26**	0.05	0.14**	0.19*
Financial literacy (FL)	0.24**	-	0.24**	0.23*	0.13*	0.36**
Financial planning motivation (MFP)	0.43**	-	0.43**	0.22**	0.23**	0.45**
Self-efficacy (SE)	-	-	-	0.53**		0.53**

**p<0.01, *p<0.05; DE represented direct effect; IE represented indirect effect; TE represented total effect.

Table 4.48 indicates that the developed antecedents and the results of causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society has direct, indirect, and total effects. Hypotheses testing is described in the following paragraphs.

Hypothesis 1: *risk in financial planning has a positive direct effect on self-efficacy.*

It is found that risk in financial planning (RKP) has a positive direct effect on self-efficacy (SE) with the values of direct and total effects of 0.26 and 0.26, respectively with the statistical significance of the 0.01 level. Thus, hypothesis 1 is accepted.

Hypothesis 2: *risk in financial planning has a positive direct effect on retirement financial planning.*

It is found that risk in financial planning (RKP) has a positive direct effect on retirement financial planning (RFP) with the values of direct, indirect, and total effects of 0.19 at no statistical significance. As a result, hypothesis 2 is rejected.

Hypothesis 3: *financial literacy has a positive direct effect on self-efficacy*.

It is found that financial literacy (FL) has a positive direct effect on self-efficacy (SE) with the values of direct and total effects of 0.24 and 0.24, respectively at the statistical significance of the 0.01 level.

Hypothesis 4: *financial literacy has a positive direct effect on retirement financial planning*.

It is found that financial literacy (FL) has a positive direct effect on retirement financial planning (RFP). The direct, indirect, and total effects were 0.23, 0.13, and 0.36, respectively at the statistical significance of the 0.05 level. Thus, hypothesis 4 is accepted.

Hypothesis 5: *financial planning motivation has a positive direct effect on self-efficacy.*

It is found that financial planning motivation (MFP) has a positive direct effect on self-efficacy (SE). The direct and total effects has the values of 0.43 and 0.43 at the statistical significance of the 0.01 level. Therefore, the hypothesis 5 is accepted.

Hypothesis 6: *financial planning motivation has a positive direct effect on retirement planning.*

It is found that financial planning motivation (MFP) has a positive direct effect on retirement financial planning (RFP). The direct, indirect, and total effects, respectively, has the values of 0.22, 0.23, and 0.45 at the statistical significance of the 0.01 level. Therefore, the hypothesis 6 is accepted.

Hypothesis 7: *self-efficacy has a positive direct effect on retirement financial planning.*

It is found that self-efficacy (SE) has a positive direct effect on retirement financial planning (RFP). The direct and total effects, respectively, has the values of 0.53 and 0.54 at the statistical significance of the 0.01 level. Therefore, the hypothesis 7 is accepted.

In conclusion, the results of hypotheses testing of the causal relationship in financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeast of Thailand in the context of an ageing society were written in Table 4.49.

Table 4. 49 Summarizes the results of hypotheses testing

Hypotheses	Results
Hypothesis 1: Risk in financial planning has a positive direct effect on self-efficacy.	Accepted
Hypothesis 2: Risk in financial planning has a positive direct effect on retirement planning.	Rejected
Hypothesis 3: Financial literacy has a positive direct effect on self-efficacy.	Accepted
Hypothesis 4: Financial literacy has a positive direct on retirement planning.	Accepted
Hypothesis 5: Financial motivation planning has a positive direct effect on self-efficacy.	Accepted
Hypothesis 6: Financial planning motivation has a positive direct effect on retirement planning.	Accepted
Hypothesis 7: Self-efficacy has a positive direct effect on retirement planning.	Accepted

4.9 Analysis of Qualitative Data

Phase 2: The draft of policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society is written.

At this phase, focus group interview is adopted. The recommended number of participants in focus group interview should be over 6 (Gilmore & Cambell, 1996; Morgan & Scannell, 1998; Grudens-Schuck, Allen, & Larson, 2004), which reduced an error rate to an acceptable level. Participants' qualifications should possess

financial knowledge, experience, and expertise. The following is a list of experts employed in the focus group interview.

1. Miss Nutchari Panyot
   Assistant Branch Manager at the Government Savings Bank Future Park, Rangsit Branch, Government Savings Bank Located,
   Future Park Rangsit Branch
2. Miss Charanchayaphon Tangchai
   Director of Government Savings Bank Branches at Pathum Thani Area 1, Government Savings Bank Area 1 Region 14
3. Mr. Wiwat Waewpet
   Deputy Director of Personal Customer Credit Development and Operation 1, Personal Customer Credit Development and Operation Section 1,
   Department of Personal Customer Credit Development,
   Government Savings Bank Head Office
4. Miss Nichapha Suwanmani
   Assistant Vice President Personal Customer Credit Card Development and Operation 3, Personal Customer Credit Development and Operation 1 Section,
   Department of Personal Customer Credit Development,
   Government Savings Bank Head Office
5. Miss Thanawan Worasing
   Lecturer,
   International College of Srinakharinwirot University Prasarnmit Campus
6. Mrs. Kritsana Sangdet
   Professional Level Teacher, Suratthani Polytechnic College
7. Miss Chalida Sangsawat
   General Administrative Officer, Finance Section of Office of Academic Affair, Chulabhorn Research Institute
8. Mr. Patwut Wirapradit
   Assistant Managing Director of Finance and Administration,
   Aira Factoring Public Company Limited
9. Miss Saowalak Rattanarat
   Financial and Accounting Officer, Chulabhorn Research Institute

Acronyms used for the draft of policy recommendations

FLP1	represented	(draft) financial literacy policy 1
FLP2	represented	(draft) financial literacy policy 2
FLP3	represented	(draft) financial literacy policy 3
SEP1	represented	(draft) self-efficacy policy 1
SEP2	represented	(draft) self-efficacy policy 2
SEP3	represented	(draft) self-efficacy policy 3
MPP1	represented	(draft) motivation in planning policy 1
MPP2	represented	(draft) motivation in planning policy 2
RPP1	represented	(draft) risk in planning policy 1
RPP2	represented	(draft) risk in planning policy 2
REP1	represented	(draft) retirement planning policy 1
REP2	represented	(draft) retirement planning policy 2

After the review has been finished, the experts would make their judgments about the draft of policy recommendations. These judgements will be demonstrated by giving the appropriateness and feasibility scores ranging from 1 to 5. Below is an explanation of appropriateness and feasibility scores.

Appropriateness of the draft of policy recommendations

5	the highest levels of appropriateness
4	high levels of appropriateness
3	moderate levels of appropriateness
2	low levels of appropriateness
1	the lowest levels of appropriateness

Feasibility of the draft of policy recommendations

5	the highest levels of feasibility
4	high levels of feasibility
3	moderate levels of feasibility
2	low levels of feasibility
1	the lowest levels of feasibility

Moreover, the mean values were used to analyze the appropriateness and feasibility of the draft of policy recommendations, and their interpretations were provided as follows (Best, 1997):

Appropriateness		
A mean score ranging	4.50 – 5.00	highest level of appropriateness
A mean score ranging	3.50 – 4.49	high level of appropriateness
A mean score ranging	2.50 – 3.49	moderate level of appropriateness
A mean score ranging	1.50 – 2.40	low level of appropriateness
A mean score ranging	1.00 – 1.40	lowest level of appropriateness
Feasibility		
A mean score ranging	4.50 – 5.00	highest level of feasibility
A mean score ranging	3.50 – 4.49	high level of feasibility
A mean score ranging	2.50 – 3.49	moderate level of feasibility
A mean score ranging	1.50 – 2.40	low level of feasibility
A mean score ranging	1.00 – 1.40	lowest level of feasibility

Table 4. 50 Conclusion of experts' judgement and their appropriateness scores of (draft) policy recommendations

(Draft) Policy Recommendations	Experts									Mean	Level of Appropriateness
	1	2	3	4	5	6	7	8	9		
FLP1	5	5	5	5	5	4	5	4	4	4.67	Highest
FLP 2	4	4	3	3	4	3	3	4	2	3.33	High
FLP 3	4	4	4	5	5	4	4	4	4	4.22	High
SEP1	5	5	5	5	5	4	4	4	3	4.44	High
SEP2	5	5	5	5	5	5	4	5	5	4.89	Highest
SEP3	5	5	5	5	5	5	5	5	4	4.89	Highest
MPP1	5	5	4	4	2	5	3	4	3	3.89	High
MPP2	5	5	5	5	3	5	5	5	4	4.67	Highest
RPP1	5	5	5	5	5	5	5	5	3	4.78	Highest
RPP2	5	5	5	5	5	5	5	4	4	4.78	Highest
REP1	5	5	5	5	5	5	5	5	4	4.89	Highest
REP2	5	5	5	5	5	5	5	5	4	4.89	Highest

Table 4. 51 Conclusion of experts' judgement and their feasibility scores of (draft) policy recommendations

(Draft) Policy Recommendations	Experts									Mean	Level of Feasibility
	1	2	3	4	5	6	7	8	9		
FLP1	4	4	4	4	3	3	5	3	3	3.67	High
FLP 2	4	4	3	3	1	3	2	2	2	2.67	Moderate
FLP 3	3	3	4	4	2	4	3	3	4	3.33	Moderate
SEP1	3	3	3	3	2	3	3	3	3	2.89	Moderate
SEP2	4	4	4	4	2	3	3	3	5	3.56	High
SEP3	5	5	4	4	5	4	3	4	4	4.22	High
MPP1	4	4	4	4	4	4	4	4	4	4.00	High
MPP2	2	2	3	3	1	4	4	3	3	2.78	Moderate
RPP1	4	4	4	4	2	4	3	3	4	3.56	High
RPP2	3	3	3	4	4	3	4	3	4	3.44	Moderate
REP1	3	3	2	2	1	4	2	4	3	2.67	Moderate
REP2	4	4	4	4	2	4	3	3	4	3.56	High

This section drew conclusion from the results of the draft of policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society. The acceptable value of policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning and retirement planning among people living in the northeastern region of Thailand should be over 3.5 of the mean score of appropriateness and feasibility. The policy recommendations (draft) that reached the acceptable level of appropriateness and feasibility were shown in the next sentences:

1. **FLP1 is a policy on financial literacy**, the government should promote financial knowledge and implement a policy on instilling positive financial behavior. A positive financial behavior influenced financial planning and saving greatly.

2. **SEP2 and SEP3 are the policy on self-efficacy**, the government should promote self-confidence among people and awareness of retirement planning. It was an issue that lived near them, and within 15 years, Thailand would become "an aged society". Raising an awareness of retirement planning among all sectors of the society must be done to make individuals realize its importance and get themselves prepared.

3. **MPP1 is a policy on motivation in planning**, it was recommended that the government should implement measures that promoted good financial behavior. For instance, low-borrowing interest rate would be provided to those who showed good saving and financial behaviors, including the government's contribution to savings. Furthermore, the government should initiate a policy on low-interest student loans rate for education promotion or on investment in real estate for building people' security. Besides, commercial banks should be promoted and supported with eased rules and regulations. Those eased rules and regulations allowed commercial banks to offer new forms of saving or savings menu that satisfied the needs of people.

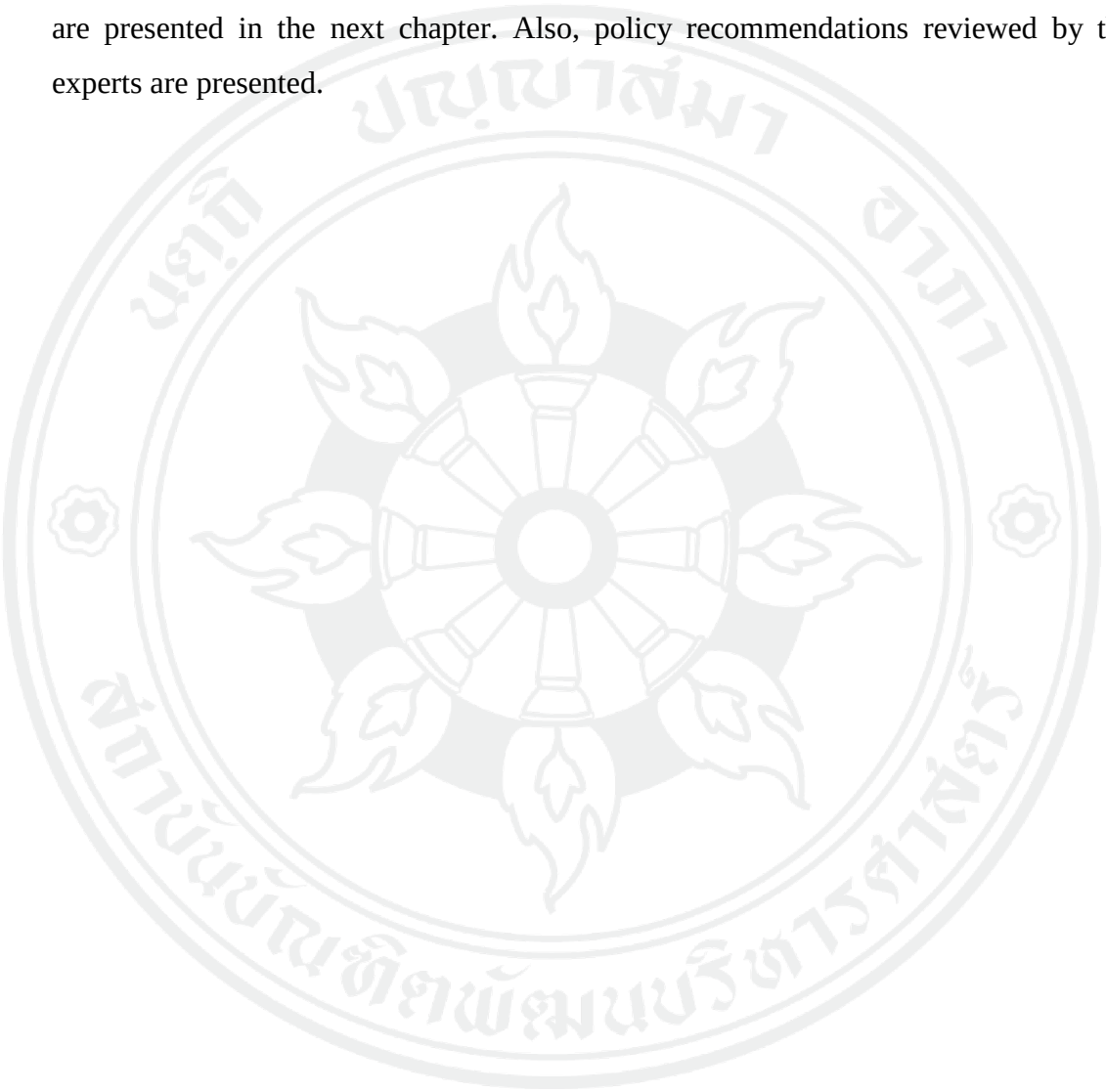
4. **RPP1 is a policy on risk in planning**, the government should reduce any potential risks. For example, financial knowledge and products should be promoted among people in order that they could keep up with modern developments. Recently, financial products had become more complicated and diverse. Without correct financial knowledge, people would be easily deceived and taken advantages from both formal and informal financial markets.

5. **REP2 is a policy on retirement planning**, the government should promote a behavior of earning additional incomes and reducing expenses. Retirement saving should be also promoted through policy on savings tax deduction. Besides, the government should direct companies to establish an employee savings scheme.

4.10 Chapter Summary

This chapter presents the empirical results of quantitative and qualitative research analysis. It concludes that respondents' general information and their level of agreement on the following constructs: financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning. Then, first order confirmatory factor analysis is conducted along with the second order confirmatory factor analysis. The results of structural equation modelling shows that the model fit is in accordance with empirical data. Afterward, the relationship among causal variables is analyzed. Also, direct and indirect effects of these variables were examined whether hypotheses should be accepted or rejected. Their results demonstrates that all hypotheses were accepted. However, only hypothesis 2 is rejected. The draft of policy recommendations on financial literacy, self-efficacy,

financial planning motivation, risk in financial planning, and retirement financial planning intended for people living in the northeast of Thailand in the context of an ageing society is reviewed by 9 financial experts. The results of reviewing these policy recommendations indicated that there were 6 policy recommendations that were accepted by the experts. Conclusions and discussions about the research results are presented in the next chapter. Also, policy recommendations reviewed by the experts are presented.



CHAPTER 5
CONCLUSION, DISCUSSION, AND RECOMMENDATION

5.1 Introduction

This study entitled "The Causal Relationships in Financial Literacy, Self-Efficacy, Financial Motivation Planning, Risk in Financial Planning, and Retirement Financial Planning among People Living in the Northeastern Region of Thailand in the Context of an Ageing Society" adopts a mixed method research approach which integrates both quantitative and qualitative methods. Its objectives are 1) to examine the causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society through empirical data performed by confirmatory factor analysis, 2) to analyze causal relationship of financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society by structural equation modelling, and 3) to present policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning targeted at people living in the northeastern region of Thailand in the context of an ageing society. The research results are written and organized into two phases with the following explanation.

Phase 1: The causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society are examined.

Phase 2: Policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society are made.

5.2 Conclusion of the Research Results

Phase 1: Examining the causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society

Respondents' General Information

In total, 460 of respondents live in 5 provinces in the northeast of Thailand. These 5 provinces are Buriram, Loei, Nakhon Phanom, Udon Thani, and Surin. There were 255 male respondents and 205 female respondents aged between 35 – 39 years (45 percent). Most respondents work in agriculture and fishery (48.25). The majority of them went to primary school (30.25) and their average household monthly income ranged between 10,001 – 15,000 baht (36.5). The respondent's general information in this research is consistent with those of the northeastern population found from an informal employment survey by the National Statistical Office of Thailand (2016, 2019), Ministry of Information and Communication, and population education of labor statistics, Economic and Social Statistics Bureau, the National Statistical Office of Thailand. The results found from these surveys indicate that the northeastern region represents one-third of total population and areas, while its income is one-tenth of the country or 11.2 percent. Most northeastern people are farmers, and the northeast is the poorest region of Thailand. In 2009, the average household income is 14,860.97 baht/month, which is the lowest level in Thailand. Also, its average household monthly income is lower than Bangkok. Average household income in Bangkok is 42,379.83 baht/month. The average household monthly income for the whole country is 18,849.7/month.

Respondents' Information about Financial Literacy

Research results show that most respondents lack a sound understanding toward financial knowledge and products in terms of its return on investment, which is indicated through the wrong answers they provided. These wrong answers include basic calculations of division at 65 percent, principal and interest at 79.75 percent, and return on investment at 90.25 percent. The research results of this study are also in line with these of Thailand's financial literacy survey conducted by the Bank of Thailand which found that Thai people lack financial knowledge receiving less than

average scores. In addition, more than 30 percent of Thai people show low levels of financial knowledge. In 2016, the results of Thailand's financial literacy survey revealed that Thai people are weak at financial knowledge having less than the average score of all items except the calculation of principal and interest rates. Moreover, definitions of inflation rates is the weakest point of Thai people. Thai people do not understand inflation is a financial risk. It allows Thai people to make inappropriate retirement planning since they do not include inflation rate in planning.

Respondents' Information about Self-Efficacy

The results show that the majority of respondents have a high level of agreement on self-efficacy. The results of each variable reveal that perception have a high level of agreement. Result from the question items demonstrate that most respondents are confident that they could select the method of successful retirement planning at the highest level. These results are correspond to the concepts introduced by Bandura (1977, 1986, 1997) stating that self-efficacy establishes confidence. People with high levels of self-efficacy are confident that they are good at working. They are more likely to accept and face any potential challenges with a high level of achievement. Furthermore, it is in line with the concepts of various academics people. Park and Folkman (1997) stated that people with high self-efficacy will be more successful than these with low self-efficacy. Schuchardt et al. (2009) points out that research must be conducted to determine the most efficient strategy that can be used to promote higher levels of financial self-efficacy. Neymotin (2010) adds that confidence or self-efficacy influences personal decision making on financial planning. Farrell et al. (2016) confirms that self-efficacy plays a significant role in explaining personal financial behaviors.

Respondents' Information about Financial Planning Motivation

The results demonstrate that most respondents have a moderate level of agreement on financial planning motivation. It finds that persistence has the highest mean score at a high level of agreement, followed by dedication and goal and direction at a moderate level of agreement. Additionally, research results show that although the majority of respondents are determined plan for retirement at a high level of agreement, they are not active to make financial plans at the lowest level of agreement. Such results are consistent with a study by Khuanuphong (2012) which

argue that more than 50 percent of Thailand's working population do not make a retirement plans. Their attitudes toward retirement planning is too slow. Moreover, they correspond to a study entitled "Preparedness for Retirement Planning Among Formal Workers Aged Between 40 – 60 Years" conducted by Research Institute of Political Evaluation and Design, the University of the Thai Chamber of Commerce (Kilenthong et al., 2012) which found that Thai people began plan for retirement at the age of 42. The prioritized objective is savings for their children's education and inheritance, followed by retirement savings. They made their savings when they are close to their retired age rather than at a younger age.

Respondents' Information about Risk in Financial Planning

Results reveal that the majority of respondents have the highest level of agreement on economic conditions whose risks could influence retirement planning, followed by attitudes toward retirement planning and return on investment, respectively. The topics with the lowest level of understanding are inflation and personal income tax which is in line with the results of Thailand's financial literacy survey 2016 carried out by the Bank of Thailand. The results of Thailand's financial literacy survey 2016 show that Thai people are weakest at financial knowledge receiving less than average scores for all items except calculation of principal and interest rate. The item that demonstrates the weakest aspect of financial literacy among Thai people is the definition of inflation. That Thai people did not understand inflation is considered a financial risk. It could influence them to make inappropriate retirement planning as they did not take a decreasing value of money into consideration. As time went by, value of money reduced. Pettinger (2018) supports the argument that economic conditions affected an increasing rate of savings significantly. The Harrod-Domar model of economic growth indicated that a level of savings is key to determining economic growth rate. Opschoor (2015) points out that savings is truly a determinant that has a positive impact on economic growth rate per capita. In addition, government savings have a more positive impact on economic growth than private savings. Thus, it is obvious that economic conditions can influence levels of savings. Savings is a kind of financial planning. It is a concept that prepares individuals for financial stability. Savings habits, financial discipline, and positive spending habits must be instilled into people in their childhood. When they

become working-age people, they will know how to make a financial plan and allocate their income to meet their daily spending, future spending, and retirement spending. Financial planning is so vital that individuals can live their lives smoothly at all times. It allows them to have strong financial health in the years to come.

Respondents' Information about Retirement Planning

The results indicate that most respondents have the highest level of agreement on push factors that influence retirement planning, followed by pull factors and other supporting factors. The push factor that has the largest impact is the expectation that they will have a happy and comfortable retirement. It is a kind of financial planning motivation influencing financial planning behavior. According to the theory of perception by Bandura (1977, 1986, 1997), human motivation is formed by thought and belief in self-efficacy. People with high self-efficacy and higher goals will be motivated to act and work better than these who have doubts in their self-efficacy. Gist and Mitchell (1992) agree that failure at work is possibly caused by low self-efficacy. Bandura and Wood (1989) confirm that self-efficacy is associated with motivation and self-control, suggesting that low self-efficacy could possibly turn individuals' focus to their possible failures rather than achievement. It can be said that push factors arise from the inside of individuals to a varying degree. In contrast, pull factors occur from external sources. These pull factors are social value and indoctrination by family that can influence human behavior. A survey about children behavior aged between 11 – 15 in the UK households by Brown and Taylor (2016) show that support from family or close person influences children's financial decision making. Although parental behavior does not seemingly affect children's financial decision making, it influences their long-term financial behavior. In other words, children's financial behavior and decision making will be demonstrated when they become adults. To achieve retirement planning among Thai people, push factors and pull factors should be promoted at the same time. Without support from government/related agencies, creating financial understanding and knowledge allows individuals to be equipped with self-financial management. Also, they realize the importance of financial planning and the value of money.

Results of the first order confirmatory factor analysis

The first order confirmatory factor analysis enables the identification of the goodness of fit and confirms the corrections of observed variables that can measure the latent variables of each construct. The constructs consists of both endogenous latent variables and exogenous latent variables. Endogenous latent variables are self-efficacy (SE) and retirement planning. Self-efficacy includes three observed variables: proactive personality (SE1), perception (SE2), and responsibility (SE3). Retirement financial planning (RFP) has three observed variables: pull factors (RFP1), push factors (RFP2), and supporting factors (RFP3). Exogenous latent variables are financial literacy (FL), financial planning motivation (MFP), and risk in financial planning (RKP). For financial literacy, financial knowledge (FL1), financial behavior (FL2), and financial attitudes (FL3) functioned as observed variables. For financial planning motivation, its observed variables are direction and goals (MFP1), persistence (MFP2), and dedication (MFP3). Risk in financial planning has three observed variables: return on investment (RKP1), economy (RKP2), and attitudes toward retirement planning (RKP3). Goodness of model fit is also examined by the first order confirmatory factor analysis through financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning. The model fit is tested with empirical data as illustrates in Table 5.1.

Table 5. 1 Goodness of fit indices of the first order confirmatory factor analysis

Constructs	Goodness of Fit Statistics								
	X^2	df	p-value	X^2/df	CFI	GFI	AGFI	RMSEA	SRMR
FL	0.12	1	0.73	0.12	1.00	1.00	1.00	0.000	0.002
SE	0.64	1	0.434	0.64	1.00	1.00	0.99	0.000	0.003
MFP	0.07	1	0.79	0.07	1.00	1.00	1.00	0.000	0.001
RKP	0.33	1	0.57	0.33	1.00	1.00	1.00	0.000	0.003
RFP	0.16	1	0.69	0.16	1.00	1.00	1.00	0.000	0.003

Table 5.1 demonstrates the results of the model fit and goodness of fit as examined by the confirmatory factor analysis of financial literary, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning. For financial literacy, chi-square is 0.12 with the statistical significance of

the 0.73 level. For self-efficacy, chi-square is 0.64 with the statistical significance of the 0.43 level. For financial planning motivation, chi-square is 0.07 with the statistical significance of the 0.79 level. For risk in financial planning, chi-square is 0.12 with the statistical significance of the 0.73. For retirement planning, chi-square is 0.16 with the statistical value of the 0.69 level. Other related statistical criteria includes p-value > 0.05, X2/df < 2, GFI ≥ 0.90, CFI ≥ 0.90, AGFI ≥ 0.90, RMSEA < 0.05, and SRMR < 0.05 all of which are accepted. Therefore, the model is supported by the empirical data and could be applied to conduct confirmatory factor analysis.

Table 5. 2 Results of the first order confirmatory factor analysis from observed variables

Observed Variables	Factor Loadings		t	R^2	Factor Score Coefficients
	Beta	b (SE)			
FL1	0.80	0.59(0.03)	18.65**	0.65	0.27
FL2	0.93	0.65(0.03)	23.18**	0.86	0.88
FL3	0.82	0.62(0.03)	19.51**	0.67	0.29
SE1	0.86	0.63(0.03)	20.74**	0.74	0.46
SE2	0.88	0.66(0.03)	21.92**	0.77	0.52
SE3	0.85	0.66(0.03)	20.34**	0.72	0.41
MFP1	0.80	0.62(0.03)	18.08**	0.63	0.31
MFP2	0.90	0.71(0.03)	21.59**	0.81	0.67
MFP3	0.81	0.64(0.03)	19.15**	0.66	0.34
RKP1	0.69	0.44(0.03)	15.39**	0.48	0.10
RKP2	0.84	0.53(0.03)	19.58**	0.71	0.22
RKP3	0.97	0.61(0.03)	24.14**	0.94	1.28
RFP1	0.88	0.62(0.03)	20.16**	0.77	0.67
RFP2	0.84	0.64(0.03)	18.98**	0.70	0.47
RFP3	0.74	0.63(0.04)	16.66**	0.55	0.25

** $p < 0.01$

Table 5.2 shows the results of the first order confirmatory factor analysis. For financial literacy, the results of factor loadings are presented in order of importance: financial behavior (FL2), financial attitudes (FL3), and financial knowledge (FL1). Their factor loadings are 0.93, 0.82, and 0.80, respectively. For self-efficacy, the results of factor loadings are written in order of importance: perception (SE2), proactive personality (SE1), and responsibility (SE3). Their factor loadings are 0.88, 0.86, and 0.85, respectively. For financial planning motivation, the results of factor

loadings are presented in order of importance: persistence (MFP2), dedication (MFP3), and direction and goal (MFP1). Their factor loadings are 0.90, 0.81, and 0.80, respectively. For risk in financial planning, the results of factor loadings are presented in order of importance: attitudes toward retirement planning (RKP3), economy (RKP2), and return on investment (RKP1). Their factor loadings are 0.97, 0.84, and 0.69, respectively. For retirement planning, the results of factor loadings are presented in order of importance: pull factors (RFP1), push factors (RFP2), and supporting factors (RFP3). Their factor loadings are 0.88, 0.84, and 0.74, respectively.

Results of structural equation modelling

The results of confirmatory factor analysis are subsequently analyzed by structural equation modelling to assess goodness of fit between empirical data and theoretical causal model. The results of structural equation modelling indicated that some of goodness of fit indices could be accepted, meaning that the model is not supported by empirical data. As a result, model modification is performed. Model parameters are adjusted by recommended model modification indices. Next, parameters are relaxed with initial agreements. Finally, goodness of fit indices is in accordance with empirical data as shown in Table 5.3 and Figure 5.1.

Table 5. 3 Goodness of fit indices of the causal relationships in financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand with empirical data after model modification

Goodness of Fit Indices	Description	Value	Interpretation
X^2	Not statistically significant at the level > 0.05	79.59	-
df	-	65	-
p-value	p > 0.05	0.11	Accepted
X^2/df	$X^2/df < 2$	1.16	Accepted
CFI	≥ 0.90	1.00	Accepted
GFI	≥ 0.90	0.97	Accepted
AGFI	≥ 0.90	0.95	Accepted
RMSEA	< 0.05	0.024	Accepted
SRMR	< 0.05	0.016	Accepted

Table 5.3 reveal that goodness of fit indices of the causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement planning among people in the northeastern region of Thailand against empirical data. After model modification, fit statistics as follows. Chi-square is 79.59 with the statistical significance of the 0.11 (p-value = 0.11). The relative chi-square is 1.16 and comparative fit index is 1.00. Goodness of fit index is 0.97 and adjusted goodness of fit index is 0.95. The root mean square error of approximation is 0.024 and square root error residual is 0.016. All fit indices are accepted, meaning that the model is supported by empirical data as illustrates in Figure 5.1.

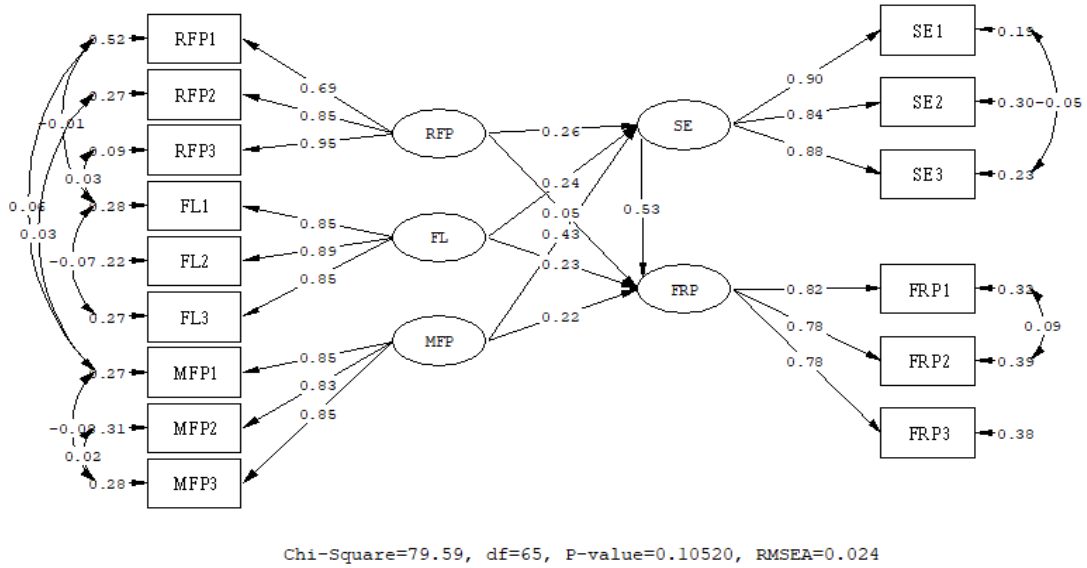


Figure 5. 1 Causal relationship model of financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society against empirical data after model modification

Results from analysis of effects of variables: hypotheses testing

The effect of antecedents is tested and consequences of the causal relationships in financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society are shown in Table 5.4 to explain research hypotheses.

Table 5. 4 Effect of variables based on research hypotheses

Antecedents	Consequences					
	Self-Efficacy (SE)			Retirement Financial Planning (RFP)		
	DE	IE	TE	DE	IE	TE
Risk in financial planning (RKP)	0.26**	-	0.26**	0.05	0.14**	0.19*
Financial literacy (FL)	0.24**	-	0.24**	0.23*	0.13*	0.36**
Financial motivation planning (MFP)	0.43**	-	0.43**	0.22**	0.23**	0.45**
Self-efficacy (SE)	-	-	-	0.53**		0.53**

**p<0.01, *p<0.05; DE represented direct effect; IE represented indirect effect; TE represented total effect

Table 5.4 shows that variables of antecedents and consequences of the causal relationships in financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand includes direct effect, indirect effect, and total effect. They are separated according to research hypotheses.

Hypothesis 1: Risk in financial planning has a direct effect on self-efficacy. The study results find that risk in financial planning has a positive direct effect on self-efficacy (SE) with the value of 0.26 and its total effect is 0.26 with the statistical significance of the 0.01 level. Therefore, hypothesis 1 is accepted. According to the theory of social perception, Bandura (1977) states that self-efficacy is an evaluation of an individuals' ability to create motivation that can drive resources of thoughts and actions required to perform a behavior in question. Tang et al. (2018) find that self-efficacy is positively associated with personal financial management. Self-efficacy is associated with openness to experience (Stajkovic et al., 2018) and mind flexibility (DeYoung, Peterson, & Higgins, 2005). Sex difference influences financial habits in terms financial risk and savings intentions and habits for retirement (Ismail et al., 2017; Magendans et al., 2017; Panno et al., 2017; Topa et al., 2018; Xiao et al., 2011). Individuals with higher perceived self-efficacy of financial management than true financial knowledge will probably see failures in financial management (Moores & Chang, 2009).

Hypothesis 2: Risk in financial planning has a direct effect on retirement planning. The study results find that risk in financial planning has a positive direct effect on retirement planning (RFP) with the value of 0.19 with no statistical significance. Thus, hypothesis 2 is rejected, which is not in line with a study by Moores and Chang (2009). The study results find that behavior that avoids financial risk will lead to financial planning. Moreover, the study results find that females tend to avoid financial risk more than males which is caused by attitudes toward risk avoidance, uncertainty, and challenges. As a result, it leads to behavior of avoiding these challenges. There are many research articles that explore the problems and solutions to financial management in female, for example, Martinez (1994), Genasci (1995), Lewin (1995), and Pasher (1996).

Hypothesis 3: Financial literacy has a direct effect on self-efficacy. The study results find that financial literacy (FL) has a positive direct effect on self-efficacy (SE) with the value of 0.24. Its total effect is 0.24 with the statistical significance of the 0.01 level. Therefore, hypothesis 3 is accepted. The results correspond to a research conducted by Gathergood and Weber (2014) who find that decision making on personal financial management depends on self-control management. Individuals with financial knowledge and literacy are more like to have savings habits or make financial plans. It is also consistent with a study by Farrell et al. (2016) who finds that financial self-efficacy can be used to explain an individuals' financial behavior. Those with high self-efficacy are more likely to decide on savings and investments; in contrast, people with low self-efficacy make their decisions on financial products such as bonds. It is seen that self-efficacy is positive related to financial literacy factors. Ismail et al. (2017) points out that human resources are key to the country's economic development. It is necessary for individuals to have financial knowledge and literacy since they can influence financial behavior. It is a life skill that all people should possess. People with high self-efficacy resulted show positive financial behavior and can handle any challenges.

Hypothesis 4: Financial literacy has a direct effect on retirement financial planning. It is found that financial literacy (FL) has a positive direct effect on retirement financial planning (RFP) with the value of 0.23. Its indirect effect is 0.13 and total effect is 0.36 with the statistical significance of the 0.05 level. Thus,

hypothesis 4 is accepted. The results are in line with previous studies which indicate that financial knowledge is positively correlated to financial management behavior (Amanah, Rahadian, & Iradianty, 2016; Falahati & Paim, 2011; Mien & Thao, 2015). A higher level of financial knowledge demonstrated an individual's breadth of in-dept knowledge which is associated with better financial management behavior. Additionally, it corresponds to a study by Falahati et al. (2012) showing that financial knowledge influenced financial management behavior positively and corresponding to the research results of Prihartono and Asandimitra (2018), Herawati, Candiasa, Yadnyana and Suharsono (2018), and Akben-selcuk (2015).

Hypothesis 5: Financial planning motivation has a direct effect on self-efficacy. The study results find that financial planning motivation (MFP) has a positive direct effect on self-efficacy (SE) with the value of 0.43 and total effect with the value of 0.43 at the statistical significance of the 0.01 value. Therefore, hypothesis 5 is accepted. The results are consistent with a study by Amanah, Rahadian and Iradianty (2016) who state that financial attitudes influence financial management behavior. Financial attitudes are a psychological tendency that can tell operational levels. People with positive financial attitudes are more likely to be free from financial problems as they can respond and manage them well. It is also in line with a concept introduced by Bandura (1977, 1986, 1997) which state that confidence is formed by self-efficacy. Furthermore, individuals with high self-efficacy strongly believe that they can work and are more likely to accept and confront any challenges with high possibility of success. Bandura and Wood (1989) confirm that self-efficacy is related to the feeling of motivation and self-control and suggest that low self-efficacy may lead individuals to possible failures rather than achievements.

Hypothesis 6: Financial planning motivation has a direct effect on retirement planning. The study results find that financial planning motivation (MFP) has a positive direct effect on retirement planning (RFP) with the value of 0.22, indirect effect with the value of 0.23, and total effect with the value of 0.45 at the statistical significance of the 0.01 level. Thus, hypothesis 6 is accepted. The results correspond to previous studies. For example, a study by Hilgert, Hogarth and Beverly (2003) which points out that individuals with rational minds would have tighter financial plans and take control of it in a systematic manner. Also, financial responsibility

allows individuals and their families to manage financial matters properly. Kapoor, Dlabay and Hughes (2012) add that personal financial management can be defined as a process of financial management to achieve economic satisfaction or quality of life. Kholilah and Iramani (2013) also mention that financial management behaviors are responses to the needs of individuals. Their needs vary depending on income.

Hypothesis 7: Self-efficacy has a direct effect on retirement planning. The study results find that self-efficacy (SE) has a positive direct effect on retirement planning (RFP) with the value of 0.53 and total effect with the value of 0.53 at the statistical significance of the 0.01 level. Therefore, hypothesis 7 is accepted. The results are consistent with studies by various researchers, including Rizkiawati and Asandimitra (2018) who state that self-efficacy is a psychological perspective that reflect individuals' confidence in financial management and the achievement of financial goals. Moreover, it corresponds to the concept developed by Bandura (1977, 1986, 1997) which states that when self-efficacy is perceived, individuals will become confident and believe that people with high self-efficacy are capable of working, and more likely to accept and face any challenges with a high possibility of achievement. Asandimitra, Aji and Kautsar (2019) examine the investment behavior of Indonesian women and the results show that they understand financial management in the area of investment by money surplus, financial control, and confidence in financial planning at a high level. Qamar, Khemta and Jamil (2016) add that self-efficacy is positively associated with financial management behavior, as supported by studies by Lown, Kim, Gutter and Hunt (2015) and Asandimitra and Kautsar (2017).

Phase 2: Policy recommendations on financial literacy, self-efficacy, financial motivation planning, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand in the context of an ageing society.

After the results of quantitative method research had been obtained, focus group with experts was the next step to be carried out. There were 9 experts recruited in the focus group who possessed the qualifications of financial knowledge, experience, and expertise. Those 9 experts would participate in the focus group to review policy recommendations on financial literacy, risk in financial planning,

financial planning motivation, self-efficacy, and retirement planning intended for people living in the northeastern region of Thailand. The results of the focus group revealed that fixing financial problems would lead to an increase in stability, wealth, and financial freedom for people who lived in the northeast of Thailand. Inequality of quality of life for people would be reduced, and the government's welfare or budget set aside for the treatment of poor people should be promoted and supported suitably. The factors that could influence retirement planning at the highest level were self-efficacy, financial planning motivation, financial literacy, and risk in financial planning, respectively, which were consistent with the quantitative research results.

5.3 Discussion

According to the results of confirmatory factor analysis and structured equation modelling from financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning among people living in the northeastern region of Thailand, most factor loadings of observed variables are greater than 0.40 with the statistical significance at the 0.01 level.

The smallest values of factor loadings of observed variables that belong to each latent variable includes financial knowledge (financial literacy), responsibility (self-efficacy), direction and goals (financial planning motivation), return on investment (risk in financial planning), and supporting factors (retirement planning). For the causal relationship of the factors influencing retirement planning, it is found that risk in financial planning, financial literacy, and financial motivation planning has direct and indirect effects with the total effects of 0.19, 0.36, and 0.45, respectively. Self-efficacy is the construct that has the direct effect of 0.53. According to the results of total effect, it is obvious that self-efficacy is the construct that has the largest effect on retirement planning, followed by financial planning motivation, financial literacy, and risk in financial planning, respectively. These results are in line with Bandura (1977, 1986, 1997) expressing that self-efficacy would establish confidence. It is believed that people with high self-efficacy are confident in their work capabilities. They are more likely to accept and face potential challenges and become successful. Park and Folkman (1997) also agree that individuals with a high level of perceived self-efficacy tends to be more successful that these who perceived

their self-efficacy is low. (Schuchardt et al., 2009) added that confidence or perceived self-efficacy influences personal financial decision making. Farrell et al. (2016) supported that self-efficacy could be used to explain personal financial management behaviors. According to the theory of self-efficacy developed by Bandura (1977, 1986, 1997), motivation is established by individuals' thoughts and beliefs in their capabilities. People who perceived their self-efficacy and who have set big goals are motivated to work better than these who doubted their capabilities. Gist and Mitchell (1992) also expressed that failures at work will be probably caused by low self-efficacy. Bandura and Wood (1989) confirms that self-efficacy has a relationship with feeling of motivation and self-control. They suggested that individuals with low self-efficacy would place their attention to failure instead of success. According to the research results, most respondents did not have financial knowledge and understanding and returns on investment from financial products. The results are in accordance with Thailand financial literacy survey 2013 conducted by the Bank of Thailand which demonstrates that Thai people lack financial knowledge with a score of less than half of the total. More than 30 percent have a low level of financial knowledge. In 2016, the Bank of Thailand carried out a financial literacy survey and the results reveal that Thai people's financial knowledge remains unchanged with a score of less than average for almost all questions except calculation of principal and interest rates of savings. The weakest point of Thai people is definition of inflation. These respondents did not understand inflation which is considered a financial risk and can result in inappropriate retirement planning.

Therefore, to have a successful retirement planning, self-efficacy should be strengthened, creating confidence, motivation for financial planning and responsibility, and determination to goals. At the same time, financial knowledge and literacy must be promoted to make Thai people realize the importance of financial planning on account of the innovation in financial products and services. As a result, many consumers will probably understand more complicated financial services. Without correct financial knowledge, they will be deceived or taken advantage of easily by formal and informal financial markets. The government/related agencies should support the building of financial knowledge and understanding so that individuals will be equipped with financial management, awareness of financial

planning, and money value. In addition, consumers should strive to realize financial benefits and risks which help create financial self-immunity and the wellbeing of Thai people. Finally, it alleviates financial inequality among Thai people at a certain level.

5.4 Recommendations

5.4.1 Policy recommendation on ageing society

According to the results of focus group interview, five policy recommendations made by 9 financial experts came up. These 9 experts reviewed the draft of policy recommendations on financial literacy, self-efficacy, financial planning motivation, risk in financial planning, and retirement financial planning intended for people living in the northeastern region of Thailand in the context of an ageing society. The policy recommendations made by the 9 experts are a result of their discussions. They agreed that a rising number of senior citizens may not cause any problems to the country's economy in case they are promoted and supported in an appropriate manner. The following is a list of policy recommendations and their details.

Financial literacy: the government should promote financial knowledge and implement a policy on instilling positive financial behavior. A positive financial behavior influenced financial planning and saving greatly. Moreover, the government should increase the elders' capability, senior citizens' occupations should be developed based on their interest and capability. Their jobs should be assigned depending on the age of each group. These jobs should not be exhausting but make them proud and happy. Moreover, they could relieve elders' loneliness. At the same time, senior citizens are beneficial to other people, which meet the needs of society. They would get paid from their jobs.

Risk in financial planning: the government should reduce any potential risks. For example, financial knowledge and products should be promoted among people in order that they could keep up with modern developments. Recently, financial products had become more complicated and diverse. Without correct financial knowledge, people would be easily deceived and taken advantages from both formal and informal financial markets.

Financial planning motivation: it was recommended that the government should implement measures that promoted good financial behavior. For instance, low-borrowing interest rate would be provided to those who showed good saving and financial behaviors, including the government's contribution to savings. Furthermore, the government should initiate a policy on low-interest student loans rate for education promotion or on investment in real estate for building people' security. Besides, commercial banks should be promoted and supported with eased rules and regulations. Those eased rules and regulations allowed commercial banks to offer new forms of saving or savings menu that satisfied the needs of people. Moreover, the government should promote on value-added, an economic and investment policy on value-added promotion: productivity should be increased in the industrial and services sectors. These should be supported with innovation, technology, and machinery. Production procedures should be improved to be more efficient. Industrial and investment policies must be revised in accordance with changes in population structure and the country's long-term development direction to substitute Thailand's workforce growth at a decreasing rate. It should be seriously promoted.

Self-efficacy: the government should promote self-confidence among people and awareness of retirement planning. It was an issue that lived near them, and within 15 years, Thailand would become "an aged society". Raising an awareness of retirement planning among all sectors of the society must be done to make individuals realize its importance and get themselves prepared. Raising an awareness should be done so that all people in Thai society realize the value and dignity of senior citizens. Also, it is recommended that more job opportunities should be provided to senior citizens who are in good health and capabilities. They will have an income for their livelihood without having to rely on their children, grandchildren or the government.

Retirement planning: the government should promote a behavior of earning additional incomes and reducing expenses. Retirement saving should be also promoted through policy on savings tax deduction. Besides, the government should direct companies to establish an employee savings scheme. Moreover, the government should promote policy on extension of the mandatory retirement age, aims at increasing the working population to relieve economic impacts. For example, Singapore extended the retirement age from 65 to 67 while South Korea's retirement

age went to 60 from 55. Japan allows senior citizens to work longer hours which extends retirement age from 62 to 65 by 2025. The extension of mandatory retirement age for civil servants will help reduce the fiscal burden on pensions.

5.4.2 Recommendation for future research

It was recommended that future research should adopt the experiment research approach and in-depth interview method to gain an insight into the applicable method and process of retirement planning. Comparative studies were also recommended. New ways of retirement planning should be sought to obtain broader application. For example, future research may make a comparison between formal workers and informal workers. Additionally, population living in different regions of Thailand could be studied. Finally, future research should focus on reproductive policy. Bongaarts (2008) propose that the government should promote parenthood and reproduction to increase both the male and female workforce in the national economy. The results of the focus group interview reveal that these 9 financial experts agree that a reproductive policy is appropriate. It could increase the population of children which will serve as the future workforce. Furthermore, it will help reduce the proportion of the elderly populations in the long term. However, the reproductive policy is less likely to be feasible due largely to the lifestyles and attitudes of the current generations toward delayed marriage, one-child families, and a growing number of single people and divorcees. If the government has attractive and supportive measures, such problems could be fixed in the long term.

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