# Financial Literacy and Retirement Planning of Working-Age People

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## ABSTRACT

**Objective** – This study aimed to investigate the level of understanding of financial knowledge and the relationship between financial literacy and retirement planning of working-age people.

**Methodology/Technique** – The participants of the study were residents of Sakon Nakhon, Nakhon Phanom and Mukdahan, Thailand. The questionnaire is the research tool for collecting data with 1,200 adults, aged between 25-60. This study will use a descriptive statistical analysis to describe frequency, percentage, mean and mode. Ordinary Least Squares (OLS) method is widely used to describe the relationship between financial literacy and retirement planning.

**Findings** – The result show that the level of education has a positive relationship with financial literacy. Most of middle lower income people have a moderate to low level of the basic financial literacy and are not involved in retirement planning. The respondents of women in Sakon Nakhon, Nakhon Phanom and Mukdahan have more understanding of retirement planning than men; this result is different to the previous research undertaken by Lusardi and Mitchell (2011), Bucher-Koenen and Lusardi (2011) Grohmann et al. (2016).

**Novelty** – This paper will study the level of understanding of financial knowledge and the relationship between financial literacy and retirement planning of working-age people. Most of the previous research concentrated on people who live in the big city; there was. little focus on people living in the countryside, especially in the Northeastern part of Thailand. Not too many papers have focused on the working-age people, who in due course will contribute to Thailand becoming an Aging Society. It could help to the government, labor union, Bureau of Financial Inclusion Policy and Development and related departments to know the level of financial knowledge and retirement planning. So, they could provide guidance of financial literacy to community.

**Type of Paper:** Empirical

*Keywords*: Financial Literacy; Retirement Planning; Working-Age People

## 1. Introduction

Financial knowledge (financial literacy) is a crucial and fundamental factor in peoples' life because it enables them to enjoy quality of life and without debts. This topic has become an important one in Thailand. Many Thai people are facing non-performing loans especially for working-age people.

They know how to earn money and spending it on many products and services. As we know, money is a medium tool used in the exchange of products and service. Unfortunately, Thailand does not provide financial knowledge to people, namely understanding of financial disciplines, plans and effective money management, for good financial decision and stability. According to a survey of the Bank of Thailand (2019), many Thai people are in debts quite early and are unable to pay back their debts punctually. This is a point that reflects their lack of skills on financial management and financial knowledges, thus resulting in a lot of bad debts among those who lack such a knowledge.

Thailand will be facing pressure concerning demographic structural changes or, in short, an emergence of senior society in the near future. Thai people are having new forms of life values, such as less newborn and more single people. The number of old people is increasing rapidly while the number of younger people is decreasing. Therefore, the emergence of a society dominated by seniors rather affects economic conditions, particularly small number of workforces, less ability or potential on governmental and household savings and low national income. Governmental agencies must allocate its welfare to accommodate increasing number of the seniors every year. This implies government's expenses to prepare for future expenses. However, there are risks that affect the ability of government to service old people; other factors are also at work here.

The importance of the above-mentioned issue encouraged the researchers to study financial knowledge and retirement planning of working-age people in Sakon Nakhon, Nakhon Phanom and Mukdahan, Thailand. All three provinces are a group of provinces in the upper part of north-eastern Thailand; they are under the supervision of Tourism Authority of Thailand in Nakhon Phanom. They are centers that connect sub-regions of Mekong. This paper will study the level of understanding of financial knowledge and the relationship between financial literacy and retirement planning of working-age people. Most of the previous research concentrated on people in the big city; not too much on the countryside especially in the Northeastern of part of Thailand. Not too many papers have studied the working-age people of Thailand, who will in due course contribute to Thailand becoming an Aging Society. It could help the government, labor union, Bureau of Financial Inclusion Policy and Development and related departments to know the level of financial knowledge and retirement planning. So, they could provide guidance of financial literacy to community. So, it is very important to support people to obtain financial literacy and practice retirement planning, which is necessary for  good financial planning  and retirement wellbeing.

The remainder of the paper is organized as follows. In Section 2, we review a previous study of financial literacy and retirement planning and propose the hypothesis. We describe the sample and research designed in Section 3. In Section 4 and Section 5, we report and discuss the empirical results. Finally, we conclude and summarize the study in Section 6.

## 2. Literature Review

### 2.1 Financial Literacy and Retirement Planning

Financial literacy refers to  the financial knowledge and understanding of the financial management, which is important, especially for retirement purposes  (Aka, Hervani, & Arnott-Hill, 2015). The Organization for Economic Co-Operation and Development (OECD) has defined the word of "Financial Literacy" as the knowledge and the understanding of the concept of finance and financial risk, which includes the skills and the motivation. People who possess financial literacy would be able to make decisions confidently thereby contributing to a country's financial and economic well-being. On the other hands, (OECD 2005, 2016) has reported that the population of 30 countries have not undertaken research on financial literacy but obtained some information indirectly by reading a newspaper, having a conversation with bank employees and financial service employees.  Most of the customers view finance as too complicated to understand, so they will always give up to learn and look  for a good financial information. (Pahlevan Sharif, Ahadzadeh, & Turner, 2020) However, everyone has a responsibility to take care of their own personal finance and preparing for future retirement (Bernheim, Skinner, & Weinberg, 2001).

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The Bank of Thailand has been concerned about and focused on the financial skill of Thai population, which they surveyed for the purpose of knowing their level of financial knowledge. Its study could be used to develop a suitable financial strategy in support of financial skills. The acquisition of financial knowledge is a life basic skill and people need to acquire knowledge of it. People, who enjoy financial literacy, will understand how to invest in the financial product, manage personal finances to have a financial well-being and retirement financial planning (Bank of Thailand, 2016). Financial literacy also helps people to know how to assess products and make good decisions; they could use their knowledge to fix a financial problem, reduce risk and have more saving (Johnson, Selvaraj, & Sakthivelrani, 2016).

The "retirement" concept refers to people who are in the aged category or have been out of work for a long time, or only work part-time. The average age for retirement in Thailand is 60-65 years. These people in this age group are considered 'elderly' and they may have physical, psychological, and social needs. Doshi, Cen, & Polsky (2008) stated the retirement definition as changing the situation from full time employment (part time employment) to unemployment. They found that about 6 people of 10 people, who are already transitioning to retirement may not go back into full-time employment.

Thailand is rapidly becoming an aging society. Thailand has established a pension fund for more than ten years, but it has not achieved access to sustainable retirement savings. Most of Thai population have been considering how to make a saving plan from throughout their working life but they still have less understanding in financial literacy and retirement planning. So, Bank of Thailand (BOT) has recognized the need to support and promote the financial knowledge to Thai population to ensure they are able to plan for retirement. In the previous research, Lusardi (2003), Lusardi & Mitchell (2007), Lusardi & Mitchell (2011), designed a module consisting of three basic questions to examine how people understand financial literacy. These big three questions will aim to examine a basic knowledge of the effect of inflation, the compound interest rate, and the risk diversification.

Lusardi & Mitchell (2007) have studied the planning, financial literacy and housing wealth of Baby Boomer retirement planning. They found that education and financial literacy could have a positive correlation with the Baby Boomer people, who practiced financial planning and wealth generation. The Baby Boomer people, who have a low level of education and low income, would encounter more risks in their retirement. So, most of the people, who had a good financial knowledge, may have a good financial planning for retirement. They also could make a good investment decisions that are appropriate for themselves and their family (Christelis, Jappelli, & Padula, 2010). Their findings are confirmed by Ameriks, Caplin, & Leahy (2003) Bucher-Koenen & Lusardi (2011), Hung, Parker, & Yoong (2009), Lusardi & Mitchell (2011), Stango & Zinman (2008) and Van Rooij, Lusardi, & Alessie (2012), who found that financial literacy also has a positive relationship with retirement planning and wealth. They also found that people, who enjoy financial literacy, could plan financially with confidence, which they could reduce a loss of financial investment. If they make a plan for retirement, they will follow their plan until they succeed. (Van Rooij et al., 2012) Seelajaroen et al (2016) report that people, who are financially astute, could be able to understand how to make a better financial decision and sustainable finance. So, they could have a retirement wellbeing.

Hypothesis: *Financial literacy is positively correlated with retirement planning.*

## 3. Research Methodology

### 3.1 Data collection

The sample of the population of this study is about 1,200 adults, who are 25-60 years and live in Sakon Nakhon, Nakhon Phanom and Mukdahan, Thailand. The questionnaire is used to be a tool for collecting the data and analyzing the data by using a statistical application. The questionnaire will be covered in three parts, including personal information, financial literacy part and retirement planning part.

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**3.2 Measures**

To evaluate the basic financial literacy and retirement planning in Sakon Nakhon, Nakhon Phanom and Mukdahan, the researchers asked three questions in the questionnaire, which was developed by Lusardi & Mitchell (2011) in their analysis of Health and Retirement Study (HRS) in the 2004. The questionnaire will be covered in three parts, which includes personal information, financial literacy, and retirement planning. The financial literacy questionnaire will separate in three questions: inflation, interest rate and risk. In the previous research, Lusardi (2003), Lusardi & Mitchell (2007), Lusardi & Mitchell (2011), have shown that the people, who had a plan and possessed financial skills, would be able to enjoy a good financial retirement.

**3.3 Data analysis**

The research used will be a descriptive statistical analysis to describe frequency, percentage, mean and mode. Ordinary Least Squares (OLS) method is widely used to describe the relationship between financial literacy and retirement planning in Sakon Nakhon, Nakhon Phanom and Mukdahan, Thailand. The data were collected during October 2018 to September 2019.

**4. Results**

This is a summary of the answers to the three questions which were collected during the survey in three provinces. Table 1 shows that the respondents from Sakon Nakhon and Nakhon Phanom had similar levels of the basic financial literacy, but Mukdahan had the lowest levels of basic financial literacy of these three provinces. In the interest rate question, the respondents of Sakon Nakhon could answer the correct choice with 76 percent and Nakhon Phanom with 78 percent. The respondents of Sakon Nakhon could answer the inflation question correctly with 72 percent and Nakhon Phanom with 69 percent. Both respondents of Sakon Nakhon and Nakhon Phanom have not many respondents who could answer correctly the risk question, which is answered correctly in Sakon Nakhon by about 52 percent and in Nakhon Phanom about 49 percent. On the other hands, more than 69 percent of the respondents in Mukdahan could get a correct answer in the question about interest rate. The respondents also understand the concept of inflation and got t the correct answer more than 63 percent. A low number of respondents did not know and understand the interest rate and inflation questions. On the other hand, less than 31 percent could answer the correct choice on the third question, and more than 42 percent did not know about the risk and diversification. In Table 2, we could see that Mukdahan have a financial literacy different from Sakon Nakhon and Nakhon Phanom with a significance level of 0.05. The average of choosing correctly to answer from Mukdahan is about 1.844. Otherwise, Sakon Nakhon had the average of correctly answer is about 2.204 and Nakhon Phanom is 2.164.

There is no difference between female and male persons with a significance level of 0.05. We could see that females will have more financial literacy than men. . On the other hands, the people, who had a high income would have more financial literacy than the people, who had low income. It was also found that all four income groups had a different answer with a significance level of 0.05, which the most respondents could choose the correct answer is the income group of people who had income more than 45,001 Baht.

Table 1 Distribution of Financial Literacy across Demographics

| | Interest | | Inflation | | Risk | |
|---|---|---|---|---|---|---|
| | Correct (%) | DK (%) | Correct (%) | DK (%) | Correct (%) | DK (%) |
| **Province** | | | | | | |
| Sakon Nakhon | 76.00 | 9.00 | 72.00 | 6.00 | 52.00 | 25.00 |
| Nakhon Phanom | 78.00 | 2.00 | 69.00 | 13.00 | 49.00 | 33.00 |
| Mukdahan | 69.00 | 10.00 | 63.00 | 10.00 | 31.00 | 42.00 |
| **Gender** | | | | | | |
| Male | 73.25 | 7.14 | 68.35 | 9.66 | 42.86 | 34.03 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Female | 75.93 | 6.79 | 67.49 | 9.67 | 45.68 | 32.30 |
| **Income** | | | | | | |
| Less than 15,000 Baht | 41.18 | 15.69 | 42.16 | 15.69 | 7.84 | 59.80 |
| 15,001-30,000 Baht | 67.23 | 7.40 | 57.51 | 10.99 | 32.98 | 38.27 |
| 30,001-45,000 Baht | 84.51 | 5.39 | 79.12 | 8.08 | 56.90 | 26.26 |
| More than 45,001 Baht | 96.77 | 3.23 | 100.00 | 0.00 | 83.87 | 6.45 |
| **Education** | | | | | | |
| Primary school | 52.08 | 13.19 | 52.78 | 13.89 | 18.06 | 51.39 |
| Secondary school | 62.91 | 8.52 | 50.38 | 12.03 | 23.56 | 43.11 |
| Undergraduate | 85.74 | 4.75 | 80.82 | 7.70 | 60.16 | 24.92 |
| Graduate | 91.49 | 4.26 | 97.87 | 2.13 | 87.23 | 4.26 |

In Table 1, we could see that respondents with a higher education could choose a correct answer, which discloses their financial literacy. When we examine the statistical test of the education factor, we found that each education level would give a different average number of correct answers. The education level of primary school and secondary school will have the average in the number of correct answers approximately at 1.4 - 1.5. On the other hands, undergraduate level and graduate level will have the average of numbers of correct answers approximately at 2.4 and 2.8, respectively.

Table 2 Planning Distribution of Number correct across Demographics

| | Number correct (%) | | | | P-value |
|---|---|---|---|---|---|
| | **0** | **1** | **2** | **3** | |
| **Province** | | | | | **0.000*** |
| Sakon Nakhon | 0.50 | 27.00 | 44.50 | 28.00 | |
| Nakhon Phanom | 2.25 | 23.50 | 50.25 | 24.00 | |
| Mukdahan | 4.25 | 39.00 | 46.25 | 10.50 | |
| **Gender** | | | | | **0.926** |
| Male | 2.94 | 29.13 | 48.46 | 19.47 | |
| Female | 1.44 | 30.86 | 44.86 | 22.84 | |
| **Income** | | | | | **0.000*** |
| Less than 15,000 Baht | 8.82 | 91.18 | 0.00 | 0.00 | |
| 15,001-30,000 Baht | 3.17 | 45.88 | 41.01 | 9.94 | |
| 30,001-45,000 Baht | 0.67 | 8.08 | 61.28 | 29.97 | |
| More than 45,001 Baht | 0.00 | 0.00 | 19.35 | 80.65 | |
| **Education** | | | | | **0.000*** |
| Primary school | 6.25 | 64.58 | 29.17 | 0.00 | |
| Secondary school | 3.76 | 55.64 | 40.60 | 0.00 | |
| Undergraduate | 0.66 | 7.05 | 57.21 | 35.08 | |
| Graduate | 0.00 | 0.00 | 23.40 | 76.60 | |

We found that people, who had a financial planning, could correctly answer all financial questions. With regards to the interest question, they could answer correctly at 84.30 percent and 78.90 percent for the knowledge of the inflation. They could answer correctly the question relating to the risk at 59.6 percent as shown in Table 3. Most of the respondents, who had a financial plaining, could choose the right answer than the people, who had no financial plan at the statistical significance at 0.05. The respondents, who do not have a financial planning, will have an average correct answer at 1.34, while the respondents, who have the financial planning, will answer correctly at the average of 2.34.

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Table 3 Number correct by Retirement Planning

| | | Plan | Not plan |
|---|---|---|---|
| **Financial Literacy** | | | |
| Interest | Correct (%) | 84.3 | 55.4 |
| | DK (%) | 5.2 | 10.4 |
| Inflation | Correct (%) | 78.9 | 47.5 |
| | DK (%) | 7.8 | 13.3 |
| Risk | Correct (%) | 59.6 | 14.5 |
| | DK (%) | 24.2 | 50.6 |
| **Number correct** (%) P-value 0.000* | 0 | 0.51 | 5.78 |
| | 1 | 8.03 | 71.08 |
| | 2 | 59.62 | 23.13 |
| | 3 | 31.85 | 0.00 |

Table 4 Logistic regression

| | 1 | 2 |
|---|---|---|
| Gender | 0.422 | 0.186 |
| | (0.062) | (0.358) |
| 15,001-30,000 Baht | 19.527 | 22.039 |
| | (0.996) | (0.996) |
| 30,001-45,000 Baht | 21.671 | 23.282 |
| | (0.996) | (0.995) |
| More than 45,001 Baht | 19.831 | 22.737 |
| | (0.996) | (0.995) |
| Secondary school | -0.378 | -1.737 |
| | (0.453) | (0.000) |
| Undergraduate | 1.327 | 1.662 |
| | (0.018) | (0.001) |
| Graduate | 1.276 | 1.897 |
| | (0.224) | (0.079) |
| Financial Literacy | 2.166 | |
| | (0.000) | |
| Nakhon Phanom | -0.033 | 0.361 |
| | (0.900) | (0.132) |
| Sakon Nakhon | 0.698 | 0.898 |
| | (0.010) | (0.000) |
| Constant | -24.222 | -21.030 |
| -2 Log likelihood | 550.146 | 666.455 |
| Chi-square | 997.443* | 881.135* |
| Cox & Snell R2 | 0.564 | 0.520 |
| Nagelkerke R2 | 0.779 | 0.718 |
| Column 1 dependent variable = 1 Have a financial planning Column 2 dependent variable = 1 Have a high overall score of financial literacy | | |

As the result according to Table 4 column 1, when financial planning was used as a dependent variable, it was found that when considering the -2 Log likelihood of all 10 independent variables models, the -2 Log likelihood appeared to equal to 550.146. The chi square value was equal to 997.443. It indicated that the logistic regression coefficients of all independent variables were not statistically significant at the .05 level

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(Chi-square = 997.443, df = 10, p = 0.000). Therefore, it meant that all of 10 independent variables have an influence on financial planning. When considering the predictability of the logistics model, it was found that the model was able to predict 56.4% variation in financial planning (Cox & Snell R2 = 0.564) at the .05 level. There were three variables: Undergraduate, Financial Literacy, Sakon Nakhon. The efficiency of the logistic regression equation was able to be predicted on financial planning for 90.0%, which means Financial Literacy has an impact on financial planning, especially the higher the financial literacy is, the higher financial planning will be. . For the comparison of financial planning, it was found that the bachelor's degree had the financial planning higher than the primary education level, and people from Sakon Nakhon had the financial planning more than people from Mukdahan.

As the result according to Table 4 column 2, financial literacy was used as a dependent variable, which we found that the -2 Log likelihood value of model with 9 independent variables was 666.455. The chi square value was 881.135, indicating that the logistic regression coefficient of all independent variables was not equal to zero statistically significantly at level of .05 (Chi-square = 881.135, df = 9, p = 0.000). Therefore, it meant that all of 9 independent variables influenced to the financial literacy. When we considering the predictability of logistic model, we found that the model was able to predict the variation of financial literacy about 52.0 percent (Cox & Snell R2 = 0.520). There were three variables affected to different proportion of education statistically significant at level of .05, consisting of Secondary school, Undergraduate, Sakon Nakhon. The efficiency of Logistic Regression equation was able to predict the financial literacy of 88.6 percent. When comparing to the elementary level, it was found that the higher education will have more financial literacy the respondents from Sakon Nakhon had the financial planning more than the respondents from Mukdahan.

## 5. Discussion

The results of the study deal with the relationship between financial literacy and financial planning for retirement. They complimented the study in this field because most studies existing in Thailand often investigated only the retirement planning. There were a few studies that investigated the relationship between these two variables. Most of the studied material focus only on the people, who were close to retire. This study investigated in those who were working people age in three provinces of Northeastern Thailand (Sakon Nakhon, Nakhon Phanom and Mukdahan), which they will have more time to plan the financial planning for retirement in the future. The research also established that women are slightly more understanding of financial planning and were able to correctly answer the questions more than men. Women are more focused on retirement planning than men too; this result differs from previous research by Lusardi & Mitchell (2011), Bucher-Koenen and Lusardi (2011) Grohmann, Hübler, Kouwenberg, & Menkhoff (2016). In Sakon Nakhon, Nakhon Phanom and Mukdahan, most women may have to take care of financial documents of their family, so they might understand and have more financial literacy acumen than men.

However, our findings are in agreement with previous studies concerning the positive relationship between the level of education and financial literacy. Some of respondents were graduates who were able to understand and choose the correct answer in all three questions. This compares favorably with people with other levels of education. Moreover, this finding is consistent with Lusardi (2003) and Lusardi & Mitchell (2007) Bucher-Koenen & Lusardi (2011), who found that higher education will be correlated with a good financial literacy and retirement planning.

Most of middle to lower income people have a moderately low level of basic financial literacy and no plan for retirement. Lusardi & Mitchell (2014) found that lower income was correlated to lower financial literacy, which income and education were an important factor to financial literacy and retirement planning. Otherwise, when we examine the relationship among the variables, we found that education has an effect on financial literacy, and both of education and financial literacy have an effect to financial planning too. As the

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result of the study, the level of education has strong positive relationship and significant to financial literacy and retirement planning.

## 6. Conclusion

This study aimed to investigate the understanding level of financial knowledge and the relationship between financial literacy and retirement planning of working-age people. The participants of the study were residents of Sakon Nakhon, Nakhon Phanom and Mukdahan, Thailand. The questionnaire is the research tool for collecting data and analyzed the data by using a statistical application. The total of the sampling group is 1,200 working-age people, which separate 400 respondents in each province and have an age between 25-60 year.

In conclusion, Sakon Nakhon, Nakhon Phanom and Mukdahan had a moderately acceptable level of financial literacy, which more than sixty three percent able to choose a correct answer on the interest rate and inflation question. They have more than twenty five percent of people who do not know about the risk and diversification. In comparison of three province, Sakon Nakhon and Nakhon Phanom people have more financial understanding than Mukdahan. They also have a few of people, who do not know the answer, less than Mukdahan too. So, Mukdahan had the lowest levels of the basic financial literacy of these three provinces. Females have a good financial literacy more than male a little bit. Moreover, people, who had an income more than 45,001 Baht, are able to satisfactorily understand the basic of financial literacy more than other people, who have an income less than 15,000 Baht. High education has a strong financial literacy than low education level. So, the level of education has strong positive relationship and significant to financial literacy and retirement planning. This paper investigated the level of understanding financial knowledge and the relationship between financial literacy and retirement planning of working-age people, who live in Sakon Nakhon, Nakhon Phanom and Mukdahan, Thailand. Future research may explore more in the different provincesl and have more value detail of how people prepare for retirement.

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