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THE IMPACT OF FINANCIAL LITERACY ON INDIVIDUAL SAVING: AN EXPLORATORY STUDY IN THE MALAYSIAN CONTEXT

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ABSTRACT. *This study examines the influence of financial literacy on individual saving in the context of an emerging market, Malaysia. A survey was conducted on approximately 200 individuals in Klang Valley, Malaysia to study the relationship under investigation. Other determinants of individual saving were also examined, in particular, saving regularity, risk-taking behaviour, and socio-demographic characteristics. Results of a Probit regression revealed that the level of financial literacy had a significant, positive impact on individual saving. In addition, saving regularity, gender, income and educational level influenced the probability of saving positively. Results of this study suggest that it is important for policymakers to increase financial literacy of households by implementing various financial education programmes, to further influence saving rates at the national level.*

KEYWORDS: financial literacy, saving behaviour, household saving, Probit regression, Malaysia.

JEL classification: D01, D12, D14.

Introduction

Amidst current evolutions in financial markets, it now becomes increasingly necessary for consumers to be more knowledgeable and competent in administering their finances. This is because changes in financial markets have resulted in the availability of a wider selection of financial products and services, making financial decisions multifaceted and more complicated. Easier access to credit cards, deregulation of financial markets, and technological improvements in the way financial services are distributed have undoubtedly left many consumers with a confusing array of investing opportunities and decisions to be made (Consumer and Financial Literacy Taskforce, 2004).

The literature suggests that there is a strong relationship between financial literacy and household welfare. Studies indicate that households with less financial knowledge or literacy, tend not to plan for their retirement (Lusardi, Mitchell, 2007a), receive lower asset levels (Lusardi, Mitchell, 2007a), and usually borrow at higher interest rates (Stango, Zinman, 2006). These results have convinced policy makers in both, developed and developing countries to increase efforts in advancing financial education, so they can increase household saving and participation in financial markets, to improve well-being and reduce poverty ultimately. Increasing financial literacy and capability promotes better financial decision-making, thus, enabling better planning and management of life events such as education, illness, housing purchase, or retirement.

At the macroeconomic level, individual saving benefits the entire nation. Saving has a positive impact on the economy as a whole because funds that are placed in financial assets are then channelled through financial intermediaries to fund investments by firms. Subsequently, investments by firms will ultimately benefit the nation through higher productivity and economic growth. Furthermore, high savings can also hedge countries against economic downturns and financial crisis.

One of the avenues to boost national saving is by encouraging individuals to increase personal saving. This can be achieved by implementing financial educational programmes to increase individuals' financial literacy, i.e. to heighten understanding of their own financial circumstances, enable them to make financial plans for the future, and choose the most appropriate financial instrument that will help them achieve their financial goals.

The objective of this paper is to examine the relationship between financial literacy and individual saving. It is posited that higher levels of financial literacy have a positive impact on saving amongst individuals, because increased literacy implies that individuals who have better understanding of their financial circumstances, would be able to plan their future finances better, hence make more informed financial decisions. Since there are not many known research investigating the relationship between these factors in the context of an emerging market, this study can be regarded an exploratory study in the context of the Malaysian market.

1. Literature Review

1.1 Financial Literacy

Financial literacy can be defined as the ways how people manage their money in terms of insuring, investing, saving and budgeting (Hogarth, 2002). Financial capability, or literacy, is determined by experience, expertise and person's needs, and can have a positive impact on consumers' personal involvement in financial markets and services. Schagen, Lines (1996) defined financial literacy as "the ability to make informed judgments and to take effective decisions regarding the use and management of money", while Roy Morgan Research (1993, p.16) defined the terms as "being knowledgeable and assured in the areas of saving and spending, budgeting and the measures of financial literacy should show the individual circumstances. The knowledge should only be tested against an individual's needs and circumstances rather than against the entire array of financial products and services, some of which they will neither use nor need".

Researchers assert that financially literate people would know how to manage their money, understand how financial institutions work, and possess a range of analytical skills. Furthermore, they would know how they should handle their financial affairs and how to be responsible financially (Beal, Delpachtra, 2003). In some studies, financial literacy has been described as the understanding and knowledge of basic financial concepts, and the ability to use them to plan and manage their financial decisions (Hogarth, 2002).

Various types of surveys have been conducted to measure the degree and spread of financial literacy. Results of a study by Lusardi, Mitchell (2007a), for example, show that people with a low level of education, females, African-Americans and Hispanics, demonstrate low levels of financial literacy, which subsequently affect financial decision-making. Results of the study found that these groups of respondents fail to plan properly for their retirement period, have less participation in the stock market, and have poor borrowing behaviour, possibly due to lack of knowledge in basic financial concepts (Lusardi, Mitchell, 2007a).

A popular survey on financial literacy is the Jump\$tart Coalition in the US, which measures individual personal capability amongst high school students (Jumpstart Coalition Survey, 2008). Four different types of questions were asked in the survey, specifically, in the area of spending and credit; saving and spending; money management; and income. The survey also includes questions regarding investments in stocks, bonds, and insurance. According to Mandell (2003), "the survey demonstrates that graduating high school seniors continue to struggle with financial literacy basics". Because the tests are conducted upon graduation of senior high school students, it shows the maximum degree of financial literacy among schooling adolescents (Hogarth, 2002). From a series of the survey, it can be noted that the measured degree of financial literacy has declined since first survey which was conducted in 1998.

In the UK, a study conducted on financial literacy for NatWest Group Charitable Trust focused on people renting government-owned houses, young generation, single parents and students. Questions of the survey asked about money management, saving and buying attitudes and their confidence in facing with money issues. Moreover, they asked about financial decision making, financial instruments and markets (Schagen, Lines, 1996). The study found that single parents have less confidence in dealing with their financial problems, but the majority had good confidence level. A study conducted on financial literacy of Malaysian degree students explored student's background, financial attitude and knowledge

(Ibrahim, Harun, MohamedIsa, 2009). The study found that most of students required more proper practice on money management skills.

Chen and Volpe (1998) examined financial literacy amongst more than 900 students in 14 American universities. By linking the scores to individuals' socioeconomic and demographic attributes, results showed that young females with non-business majors and little work experience have very low degrees of financial literacy. They also concluded that income and race were not important factors in determining financial literacy. Meanwhile, in the survey of an Australian regional university, most of the participating students scored fairly well for financial literacy and knowledge. Business students, in particular, scored better in comparison with other majors (Beal, Delpachtra, 2003).

1.2 Saving Behaviour of Individuals

As previously discussed, saving benefits not only households but also the entire nation as it provides the base for long-term investments and infrastructure development for every country that contribute towards economic growth. Saving also acts as a hedge for nations against economic downturns and financial crisis.

Is a high level of saving advantageous or disadvantageous for an economy? Some may argue that high levels of saving reflect societies that are not spending, hence not contributing towards boosting national aggregate demand and economic growth. However, in a study of the Malaysian economy, Tang, Chuna (2009) assert that high levels of saving indicate an economy that is in good condition. They argue that policies which support saving should be performed because saving is a source of economic development through its effect on capital structure. Thus, high saving rates display the meaning of a 'boosting economy', rather than a 'freezing economy' (Tang, Chua, 2009).

The life-cycle saving theory (Modigliani, Brumberg, 1954) posits that individuals will follow a hump-shaped saving pattern over their lifetime. During high earning periods of employment, individuals will save increasing amounts and smooth out expenditure. During low income levels (for instance, prior to employment earning periods, and later, during retirement), people will use up their savings to fund their lifetime spending needs.

Some of the studies conducted in the US show that financial behaviour and the level of saving are significantly different between genders. Since women generally have lower earnings, they tend to have a lower level of saving and wealth, as opposed to men. Women also face more difficulty in their retirement period because they spend five years more in retirement due to longer life expectancies, as opposed to men (Gottschalck, 2008).

Schmidt, Sevak (2006) suggest that women in the US have historically been dependent on men for financial security. Although this trend is changing, there are still large differences in economic well-being that influence all women of different age groups (Levine, Mitchell, Moore, 2000). The authors found that there are large gender gaps in current and planned retirement income. In general, there is a sizeable gap between the two genders in income resources like saving, pensions, and after-retirement earnings. Moreover, the poverty rates were significantly higher amongst women in most developed countries (Burnes, Schultz, 2000).

Other studies also showed that saving behaviour has a significant gender gap (Embrey, Fox, 1997; Yuh, Hanna, 1997). Women were found to be less likely to have a defined retirement saving plan compared to men (Sunden, Surette, 1998), although other studies showed contradictory results (Agnew, 2006). Thus, it is not really clear whether women are more likely to spend more than their income.

The concept of risk aversion is related to financial decision making. Croson, Gneezy (2004) show that there is a significant difference in risk-taking between men and women, such that women are more risk-averse compared to men. The authors show that, in general, males are more risk-taking when they want to attract their future partner, and females are more risk-averse in their child-bearing periods (Croson, Gneezy, 2004). However, while the psychology literature indicates a significant difference in risk tolerance between different genders, research in the area of finance and economics showed that there is no gender difference in the investment behaviour (Zhong, Xiao, 1995), hence implying insignificant variations in risk-taking attitudes between genders.

Lusardi, Mitchell (2007) showed that women were usually less financially informed than men, and financial literacy was found to influence the level of saving. Researchers have shown that male and female have different risk preferences, which influence the saving and spending decisions they make (Croson, Gneezy, 2004), but there is not much information about how saving behaviours differ between males and females.

1.3 The Relationship between Financial Literacy and Saving

Lusardi, Mitchell (2007b) examined how financial literacy impacts people's preparedness for their retirement. Using data of elderly individuals from the Health and Retirement Survey in the US, the authors investigate whether financially literate people are more likely to plan for retirement, and whether planning have an impact on retirement wealth. Results of the study found that financial literacy increases the likelihood of planning for retirement and that people who plan for retirement have higher levels of wealth compared to people who do not plan. They show that financial literacy, by its significant effect on planning, indirectly impacts household saving behaviour.

Research has shown that people with higher knowledge of finance are more capable of preparing themselves for retirement through better saving and insurance plans. Meanwhile, Clark and Madeleine (2008) showed that financial knowledge and saving programs can be very effective in overcoming the decrease in saving. However, the exact process that shows how learning changes the level of saving and investment decisions is not clear (Maki, 2004).

2. Methodology

2.1 Sampling Design

The context of this study is Malaysian individuals, and employs a convenience sampling method since it is an exploratory study aimed to provide preliminary knowledge on the issues being examined. In particular, the respondents were people directly or indirectly acquainted to the researchers, and mainly included working individuals undergoing the Master of Business Administration (MBA) course at the University of Malaya, and other employed individuals, retirees, undergraduate students, housewives, and other unemployed people located in urban Malaysia (Klang Valley area). Although this method poses limitations to generalizing the results, the study can be regarded as a preliminary step to allow the researchers approximate the relationship between the variables being researched. Hence, the purpose is not to make generalizations regarding the overall Malaysian population.

The questionnaires, which were formulated in English, were distributed via email using an electronic survey form and also via paper questionnaires. A total of 200 paper questionnaires were distributed, and 148 questionnaires were returned. However, only 95 of

them were complete and usable. Meanwhile, the online questionnaire was distributed to about two thousand (2000) potential respondents via the University of Malaya's mailing list and only 97 usable and complete forms were collected via online spreadsheet. So in total, 192 complete and useable questionnaires were collected, indicating a response rate of about 9%. The questionnaires were distributed and collected in August 2010. The process lasted for three weeks.

2.2 Measurement of Variables

To gather data on these variables a questionnaire based on Lusardi (2008) was designed. The dependent variable is individual saving, while the independent variables are financial literacy, saving regularity, gender, ethnicity, age, children, experience, nationality, risk aversion, income, and education.

2.2.1 Dependent Variable: Individual Saving (SVG)

The dependent variable is individual saving, which is measured as a binary variable where 1 indicates having positive saving, and 0 indicates no saving. More specifically, respondents were asked about their income and spending over the past year. If spending exceeded or equaled income, individual saving was coded 0 (no saving). If spending was less than income, individual saving was coded 1 (positive saving). Such qualitative measures of saving have been employed by other renowned researchers from various countries, such as Harris, Loundes, Webster (2002) in the context of Australia, Alessie *et al.* (1999) in the context of Netherlands, and Bucks, Kennickell, Moore (2006) in the context of US.

2.2.2 Independent Variables

Financial literacy was measured by a series of questions based on Lusardi (2008) and Lusardi and Mitchell (2007a, 2007b, 2008).

Financial literacy: Financial literacy is divided into two groups:

1. basic (*BASIC_LITERACY*);
2. advanced literacy (*ADV_LITERACY*).

The first section tests the respondent's knowledge on basic financial literacy such as working of interest rates, inflation, and risk diversification; the second section tests advance financial literacy such as knowledge about stock markets, unit trusts, and bonds. Correct responses were coded 1, and incorrect answers were coded 0. The sum of scores, which ranged from 0 to 13 provides a measure for '*TOTAL_LITERACY*'. A higher score indicates a higher financial literacy level, and vice versa.

Risk-Taking Behavior (RISK_TOLERANCE): Risk-taking behavior also was coded from 1 to 4 from the person who was willing not to take any financial risk to the person who was willing to take substantial financial risk. A higher value indicates a higher level of risk tolerance, and *vice versa*.

Saving regularity (SVG_REGULARITY): Saving regularity shows the frequency that people save money; or in other words, how often they save. There are five levels of saving regularity: never save, save very rarely, save occasionally, save very frequently and always save.

Demographic variables: Demographic variables included gender (*MALE*) (dummy variable), *AGE* (continuous variable indicating reported age of a respondent), marital status

(dummy variables where 1 indicates married and 0 otherwise), income level (dummy variable indicating annual income above RM36,000 or otherwise), educational level (*EDU*) (dummy variable where 1 indicates postgraduate degree, or 0 for those with bachelor's degree or lower), number of children (*CHILD*) (continuous variable ranging from 0 to 6), and working experience (*WORK_EXP*) (continuous variable indicating years of work experience).

2.3 Hypotheses

The following relationships between the dependent and independent variables are predicted:

Financial Literacy: We posit that financial literacy has a significant impact on individual saving, as more knowledge on financial matters enable individuals to make more substantive financial plans and more informed decisions regarding allocations of their money and saving. Hence, it is predicted that the relationship between financial literacy and individual saving is positive.

Age: It is expected that when age increases, people save more money, because elderly people are more likely to be concerned about their retirement period. Furthermore, elderly people have lower life-cycle expenses such as education, wedding and house expenses. It is posited that age is positively related to individual saving.

Gender: Generally, studies suggest that men are more able to save. For example, Lusardi, Mitchell (2007) showed that women were usually less financially informed than men, and financial literacy was found to influence the level of saving (spending less than income). Some studies have shown that women are less likely to have a defined retirement saving plan (Sunden, Surette, 1998), although others have shown contradictory results (Agnew, 2006). Hence, it is hypothesized that gender is a significant predictor of individual saving.

Work Experience: It is also expected that the number of years of work experience is positively related to saving, because through their career people have dealt with numerous financial decisions, and they can be assumed to have greater realization of the importance of saving.

Number of Children: It is predicted that the number of children may be positively related to the level of saving, as this will be related to a greater sense of responsibility towards children's future.

Income: It is predicted that income is positively related to individual saving, simply because people have or should have more money to save (assuming other factors constant). So they may be able to save more, or at least have some saving.

Education Level: It is hypothesized that education level has a positive impact on individual saving. Higher education levels imply that people to have a better understanding of their personal financial matters, so they will be better able to make financial decisions and have more ability to plan for their future. There is evidence to show that more educated people can manage their money in terms of insuring, investing, saving and budgeting (Hogarth, 2002).

Risk Tolerance: Previous studies have shown that when people are willing to take more risks, they are less willing to save for emergency purposes. In other words, the more risk-tolerant people are, the less likely they will save. Overall, risk-taking behavior of individuals can affect financial decision making and of course their saving level (Zhong, Xiao, 1995). It is predicted that risk tolerance will have a negative influence on individual saving.

Saving regularity: We posit that people who save more regularly, as opposed to those who do not, will be more likely to have positive individual saving.

In summary, the hypotheses to be tested are:

Hypothesis 1: *Individual's financial literacy level is positively related to individual saving (+).*

Hypothesis 2: *Demographic characteristics are significantly related to individual saving.*

This hypothesis can be broken into details as follow:

- a. *Age is significantly related to individual saving (+)*
- b. *Gender is significantly related to individual saving (+)*
- c. *Number of children is significantly related to individual saving (+)*
- d. *Length of work experience is significantly related to individual saving (+)*
- e. *Income is significantly related to individual saving (+)*
- f. *Education level is significantly related to individual saving (+)*
- g. *Risk tolerance is significantly related to individual saving (-)*

Hypothesis 3: *Individual's saving regularity is positively related to individual saving (+).*

2.4 Model Specification and Analysis

The model specification is as follows:

$$\text{SVG} = \alpha + \beta_1 * \text{TOTAL_LITERACY} + \beta_2 * \text{SVG_REGULARITY} + \beta_3 * \text{MALE} + \beta_4 * \text{AGE} + \beta_5 * \text{CHILD} + \beta_6 * \text{WORK_EXP} + \beta_7 * \text{RISK_TOL} + \beta_8 * \text{INCOME} + \beta_9 * \text{EDU} + \beta_{10} * \text{Controlvariables} + \varepsilon$$

whereby, α is a constant term, β_n are the coefficients to be determined, and ε is the error term.

Since the dependent variable is dichotomous, probit analysis was used. Probit analysis is a type of regression used to model dichotomous or binary outcome variables. In the probit model, "the inverse standard normal distribution of the probability is modeled as a linear combination of the predictors" (SPSS Survival Manual, 2005, p.109). The analyses were conducted using SPSS.

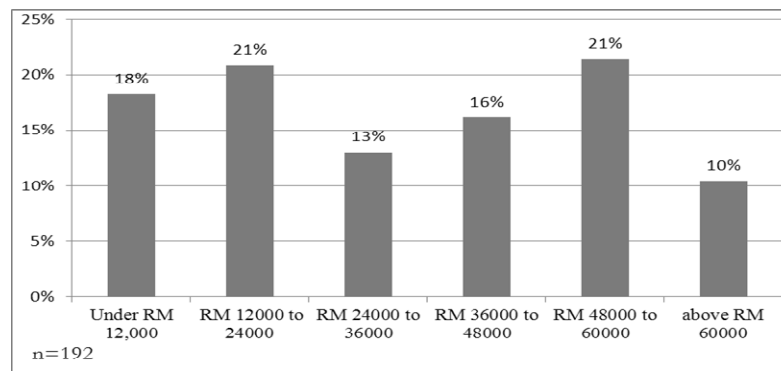
3. Results

3.1 Descriptive Analysis

3.1.1 Socio-demographic Variables

From a total of 192 respondents, 54% of them were male and 46% of female. In terms of ethnicity, about half were Malays/Bumiputera, about 30% of them were Malaysian Chinese, and about 10% were of Malaysian Indians. The breakdown of ethnicity groups shows close similarity to the Malaysian population, with Malay 53.3%, Chinese 26.0%, indigenous 11.8%, Indian 7.7%, and others 1.2%. In regards to occupational status, 31% of the respondents were employed individuals, 36 % were students, 14% were housewives, 6% were unemployed individuals and 13% were retirees.

Figure 1 illustrates the gross annual income level of the respondents. About 52% of the respondents had income less than RM 36,000 per year while the remaining 48% had income levels exceeding RM 36,000.



Source: created by authors.

Figure 1. Respondents' Gross Annual Income

3.1.2 Financial Literacy

Basic Financial Literacy. The first part of this survey measures financial literacy. The financial literacy part measures respondents' basic financial knowledge (*BASIC LITERACY*) and advanced financial knowledge (*ADV LITERACY*). The basic knowledge is mainly about their understanding of inflation, interest and percentage calculation. Table 1 shows the summary of the specific questions asked and the percentages of correct and incorrect answers to each question.

Table 1. Basic Financial Literacy

Basic Financial literacy Questions	n=192	
	Correct Answers (%)	Incorrect Answers (%)
Percentage Calculation: If the chance of getting a disease is 10 %, how many people out of 1,000 would be expected to get the disease?	86.5%	13.5%
Inflation Rate: Imagine that the interest rate on your saving account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?	79.7%	20.3%
Interest Rate: Suppose you had \$100 in a saving account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?	86.5%	13.54%

Source: created by authors.

As Table 1 shows, general knowledge of respondents regarding basic financial topics can be considered as high. Although these topics may seem familiar and relatively simple, it should be taken into account that some participants of this survey are housewives and retirees, presumably with low level of education. Nonetheless, the percentage of approximately 80% correct answers for each question can be considered relatively high.

Advanced Financial Literacy. The second part of the financial literacy measurement explores the advanced financial knowledge of respondents relevant to stocks, unit trusts, and bond. Below given Table 2 summarizes how participants answered these questions. Evidently, the lowest score recorded (30%) relates to the question about the link between bond price and inflation rate. The second lowest correct answer recorded (31%) pertains to the knowledge regarding unit trust's functions. This suggests that about one third of the total respondents have a good understanding regarding unit trusts and bond prices. More than 60%

of the respondents have an understanding of risk diversification. Interestingly, more than 70% of the respondents could calculate the compound interest over a two year period. This may be due to the fact that a large number of participants, whether employed, unemployed, or retired have an education level of a Bachelor's degree or higher.

Table 2. Advanced financial literacy

Advanced Financial Literacy	n= 192	
	Correct (%)	Incorrect (%)
1) Which statement describes the main function of the stock market?	58.3%	41.7%
2) Function of unit trust.	31.3%	68.8%
3) If the interest rate falls/rises, what should happen to bond prices: rise/fall/stay the same/none of the above?	29.7%	70.3%
4) Buying a company fund/stock unit trust usually provides a safer return than a stock unit trust/a company fund. True or false?	59.9%	40.1%
5) Stocks/Bonds are normally riskier than bonds/stocks. True or false?	55.7%	44.3%
6) Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return: saving accounts, bonds or stocks?	39.1%	60.9%
7) Normally, which asset displays the highest fluctuations over time: saving accounts, bonds, stocks?	68.8%	31.3%
8) When an investor spreads his money among different assets, does the risk of losing money increase, decrease or stay the same?	61.98%	38.02%
9) Let's say you have 200 dollars in a saving account. The account earns 10 % interest per year. How much would you have in the account at the end of two years?	72.9%	27.1%

Source: created by authors.

Overall Financial Literacy. As explained in section 3.2.2, the overall total financial literacy score is obtained from the summation of scores of basic and advanced financial literacy. *Table 3* given below summarizes the average and standard deviation of participants' answers:

Table 3. Overall financial literacy

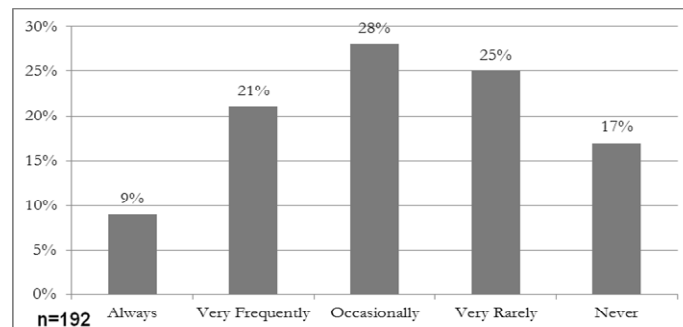
	N	Range	Min	Max	Mean	Std. Dev.
<i>BASIC_LITERACY</i>	192	4	1	4	3.16	0.761
<i>ADV_LITERACY</i>	192	9	1	9	4.95	1.541
<i>TOTAL_LITERACY</i>	192	11	2	13	8.11	2.786

Source: created by authors.

As *Table 3* shows, the average of basic financial literacy is relatively high, 3.16 out of 4, which indicates that the overall basic knowledge about finance can be considered being high. This suggests that the respondents have a good understanding of interest and inflation rates, and percentage calculation, possibly because a number of them are MBA students. *Table 3* also shows that the average score on advanced financial knowledge is about 50% (4.95 out of 9), which indicate that the respondents have a moderate level of advanced financial knowledge. Hence, it can be inferred that the high average of 8.11 for total financial literacy is partly due to high average of basic literacy scores.

Another important factor was the regularity of the respondents' saving money, because this would be able to give an indication of the saving behavior of participants. *Figure 2* shows the saving regularity among the respondents. Five levels of regularity were defined: always, very frequently, occasionally, very rarely and never. From the five responses for saving

regularity, the highest response was 'occasionally' (28%), followed by 'very rarely' (25%), 'very frequently' (21%), 'never' (17%) and 'always' (9%).



Source: created by authors.

Figure 2. Saving Regularity of Respondents

3.2 Multivariate Analysis

3.2.2 Probit Analysis

For the multivariate analysis, a probit regression was run in view that the dependent variable is dichotomous in nature. Table 4 shows the result of the probit regression. For the multivariate analysis, a probit regression was run in view that the dependent variable is dichotomous in nature. Table 4 shows the result of the probit regression.

Table 4. Probit regression on individual saving

	Parameter	Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
		Lower Bound Upper Bound	Lower Upper Bound	Lower-Bound	Upper Bound		
PROBIT	<i>TOTAL_LITERACY</i>	.024	.005	4.572	.000	.012	.029
	<i>SVG_REGULARITY</i>	.071	.012	4.435	.000	.035	.090
	<i>MALE</i>	.151	.021	6.773	.000	.105	.191
	<i>AGE</i>	.005	.003	4.689	.000	.005	.011
	<i>CHILD</i>	.029	.010	2.789	.006	.010	.056
	<i>WORK_EXP</i>	.000	.001	4.532	.989	-.004	.004
	<i>INCOME</i>	.154	.008	5.374	.000	.010	.041
	<i>EDU</i>	.043	.005	2.483	.002	.021	.084
	<i>RISK_TOLERANCE</i>	-.010	.013	-.905	.351	-.034	.012
	Intercept(b)	0					
		-1.368	.085	-16.142	.000	-1.459	-1.289
		1					
		-1.316	.092	-14.978	.000	-1.464	-1.280

Source: created by authors.

The results of the probit regression reveal that the relationship between overall total financial literacy (*TOTAL_LITERACY*) and the probability of having positive saving (*SVG*) is significant at 0.01 level, which supports the first hypothesis. This suggests that people with high financial literacy level, are more likely to save compared to those with low level of financial literacy (holding other variables constant). This finding is also consistent with prior research in the context of US. For example, Lusardi and Mitchell (2007b) showed that people

with higher knowledge of finance are more capable to prepare themselves for their retirement period through better saving and insurance plans. Other studies showed that financial knowledge and saving programs can be very effective to overcome the decrease in saving (Clark, Madeleine, 2008).

Table 4 also shows that saving regularity is significantly related to the probability of having positive saving. This finding is intuitive, as regularly setting aside part of income as saving would likely lead to higher probability of having positive saving.

Results show that the relationship between gender and the probability of having positive saving is significant at 0.01 significance level, indicating that men have a higher probability of having positive saving as opposed to women, *ceteris paribus*. This finding supports the second hypothesis which has predicted that there is a significant difference among men and women in terms of their saving behavior. This reason conforming findings of other research – Lusardi, Mitchell (2007a), for example, showed that women were usually less financially informed than men, and financial literacy was found to influence the probability of having positive saving. This is consistent with studies that have shown that women are less likely to have a defined retirement saving plan (Sunden, Surette, 1998). Studies have shown that historically, women have been dependent on men for their financial security (Schmidt, Sevak, 2006), which may be a likely explanation for the results of this study. Furthermore, there is a sizeable gap between the two genders in terms of financial resources such as saving, pensions, and after-retirement earnings. Results also relate to past research which showed that poverty rates were significantly higher among women in all the developed countries (Burnes, Schultz, 2000).

The relationship between number of children and the probability of having positive saving is significant at 0.01 significance level, holding other variables equal. A likely explanation is that people who have more children feel more responsible for their children's future, so they have to develop sound financial plans and they may start to save for children's education expenses, or perhaps to save more in order to leave an inheritance for each of the children.

Income also appears to play an important role in people's saving behavior. The positive sign indicates that as income rising, the probability of saving increasing, thus, hypothesis 2e is supported. Moreover, it can be seen that people with higher education levels (for example, Master and PhD) have higher saving than people with low education levels. This finding supports hypothesis 2f, and is also consistent with previous literature.

Conclusions

Saving is essential for the long-term development and economic growth of a nation. In addition, saving acts as a contingency for individuals and countries in the event of economic downturns and financial crisis. This paper has examined the factors that influence individual saving with a focus on financial literacy, in the Malaysian context.

Overall, this study has shown the financial literacy is an important determinant of individual saving. Financial literacy, which is defined as individuals' knowledge about basic and advanced financial topics, such as knowledge/computation on interest rate, inflation rate, percentage calculation, stocks, and unit trusts, has been found to be positively related to the probability of having positive saving amongst individuals, *ceteris paribus*. This result, although a preliminary finding from this exploratory research, suggests that if the government aims to increase saving amongst households, it should increase efforts in promoting financial literacy through basic educational programs regarding financial issues. As shown in *Table 2*,

people have the least knowledge about the function of unit trust, bonds, and risk-return issues. Hence, these areas should be the focus of educational programs. Although the results indicate that individuals have a relatively good level of basic financial knowledge, such as computing interest rates/percentages and knowledge on relative riskiness of financial assets, the understanding of the stock market, unit trusts and risk-return of assets are relatively low. Hence, educational programs should include increasing of knowledge regarding various financial assets and the advantages/disadvantages of saving in each type of asset.

Effects of demographic factors have been also analysed and the results show that older people are more likely to have positive saving, holding other factors constant. This finding is intuitive as older individuals would have saved for a longer period, hence, would have accumulated more saving. Such finding renders support to the Life Cycle Hypothesis (Modigliani, Brumberg, 1954) that people tend to save during high earning periods for their future retirement.

However, there are several limitations of the study. The first limitation is that the results are not generalizable to the population since a non-probability, convenience sampling method was conducted. To offer valid generalizations, a more comprehensive study on a more representative sample of the population is suggested for future research.

Another limitation of the study relates to the extent to which the findings were plausibly biased towards more knowledgeable people. Non-respondents may have been people who are afraid of financial issues, and hence, refused to fill the questionnaire. It is possible that non-respondents to the survey may have had different outcomes to those that did participate. This limitation is, however, common among most survey-based studies.

This topic is relatively a new topic in Malaysia; hence, further research should be conducted in this area. Such research should focus on the following questions: how financial literacy can increase people's involvement in investing in stocks and unit trusts; how financial literacy affects allocations in long-term saving programs such as insurance or endowment plans; or what is the association between financial literacy and socio-demographic variables in the context of emerging markets. In addition, researchers are suggested to not only focus on college or degree students but also on other strata of the population, because most of the studies noted in the literature used student samples, perhaps due to easy data collection procedures.

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FINANSINIO RAŠTINGUMO POVEIKIS ASMENINIAM TAUPYMIUI: TIRIAMOJI STUDIJA MALAIZIJOS KONTEKSTE**Nurul Shahnaz Mahdzan, Saleh Tabiani****SANTRAUKA**

Tyrimai rodo, kad finansinis raštingumas ir namų ūkių gerovė yra glaudžiai susiję. Pavyzdžiui, ankstesni tyrimai parodė, kad mažiau finansinių žinių turinčios šeimos nelinkusios planuoti savo pensinio laikotarpio, gauna mažesnes lėšas ir skolinasi už didesnes palūkanas. Šie rezultatai įtikino politikos strategus tiek išsivysčiusiose, tiek besivystančiose šalyse dėti daugiau pastangų gerinant finansinį švietimą. Tuo siekiama, kad padidėtų šeimų taupymas ir dalyvavimas finansų rinkose. Tai galėtų pagerinti gyvenimo kokybę ir sumažinti skurdą.

Šiame straipsnyje nagrinėjama finansinio raštingumo įtaka asmeniniam taupymui kylančios rinkos, t. y. Malaizijos, kontekste. Tyrimas buvo atliktas apklausus apytiksliai 200 asmenų Klang Valley, Malaizijoje. Buvo ištirti ir kiti asmeninį taupymą lemiantys veiksniai: taupymo dažnis, rizika ir sociodemografinės ypatybės. Probit regresijos rezultatai parodė, kad finansinio raštingumo lygmuo ženkliai ir pozityviai veikia asmeninį taupymą. Akcentuotina, kad taupymo tikėtinumui teigiamos įtakos turi taupymo reguliarumas, lytis, pajamos ir išsilavinimo lygis. Šio tyrimo rezultatai rodo, kad politikos strategams svarbu padidinti namų ūkių finansinį raštingumą įgyvendinant įvairias finansinio švietimo programas, siekiant pagerinti taupymo rodiklius nacionaliniu mastu.

REIKŠMINIAI ŽODŽIAI: finansinis raštingumas, taupymas, namų ūkių taupymas, Probit regresija, Malaizija.