



# The Linkages of Financial Self-Efficacy and Financial Decision Behaviour: Learning from Female Lecturers in East Coast Malaysia

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## ABSTRACT

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The goal of the study is to examine how the financial self-efficacy can explain the personal financial behaviour of female lecturers on a financial decision, through the application of a psychometric instrument. The study employed the survey approach on the 239 female lecturers in East Coast Malaysia, selected based on simple random sampling. The analysis uses the multivariate Probit method. The results showed that financial self-efficacy is negatively related to the likelihood of a female lecturer having any credit card, loan and insurance products. Furthermore, there was no positive impact on the level of individual efficacy with the possibility of female lecturers having savings accounts. Meanwhile, lecturers who attended financial courses were less likely to have credit cards than women lecturers who had never attended a financial course. Besides, female lecturers with higher education levels and household income possessed a more substantial probability of having loan products. The critical factor affecting the likelihood of female lecturers having any insurance products was ethnicity, marital status, household income level, Media electronic and magazine references, and investment consultants. The implication of this study suggests that financial self-efficacy is essential to a personal financial advisor, the credit counselling, and debt management agency to help their customer to solve personal financial problems and make a decision.

An understanding of the macroeconomic condition is an essential factor in investment decision making, as well as affecting the personal finances. Through an efficient financial system, it can identify the kind of profitable investment. Sources of savings and investment can come from an excess of income as well as loans. Therefore, an individual and household need to understand how to make efficient financial decisions in order to increase their wealth. Personal Finance is a study

of essential resources for individuals and families in achieving successful finance involving how individuals spend, make savings, protect, and invest their resources (Garman & Fargue, 2011).

Human behaviour towards financial decisions differs as they manage financial shortages or surplus. They will make investments, savings or loan decisions. To get more financial resources or wealth should invest (Kiyosaki & Lechter, 1997), but not everyone will be investing, as each investment has its own risk. Therefore, some people will only run savings. It is because the risk for savings in financial institutions or banking is small, and most people do not think savings is also an investment.

One of the critical issues is the number of women in Malaysia can be said to be almost the same as the number of men, but until now, financial institutions are still less focused on women. Based on data from the Jabatan Insolvensi Malaysia [Department of Statistics, Malaysia] (2017), most women are engaged in high jobs, such as financial and insurance/takaful activities, professional, scientific and technical activities, education, humanitarian activities and social work. Because the rate of female workers participation is less than the male, then the gross household income of women is less than the average male. However, women in Malaysia are currently increasingly employed in the job market and various industries (Mohamad & Ng, 2006).

Also, we found 101,958 bankruptcy cases from 2012 to December 2016, 69.34% were males, and 30.66% were females (Department of Statistics, Malaysia, 2017). It shows that women's bankruptcy is smaller than men. However, Parkins (2012) shows that women are more emotional than men, but the percentage of the bankruptcy of women is less than men. Theoretically, the more emotional groups they are behaving tend to be less rational. It shows that they will be increasingly irrational. Therefore, her mutual decision making is excellent, but in the real situation, this is the opposite.

In the higher education industry, according to the Ministry of Education, the number of female lecturers is more than male lecturers. Besides, lecturers are a high-paid job and skilled labour. The highest level of certificates obtained to lecturers is at least a master's degree. It indicates that lecturers are those who receive higher education. People who are highly educated, then personal affairs are also increasingly high (Chan et al., 2015). This means that an increase in one's knowledge will enhance their alternative experience.

Hence, to what extent financial efficacy and literacy, financial risk, social-demographic information, and referral options can explain financial decisions? Based on this research question, the specific objectives of the present study are as strict: To understand financial efficacy and literacy, choice of financial risk, social-demographic information, and resource references can explain financial decision behaviour.

The basic theory of personal finance based on logic and rationale of human behaviour (Olsen, 1998), in the real sense, is that human action will be influenced by one's psychological factor (Talha, Ramanakumar, & Neelakantan, 2015). It is due to the personal effectiveness of our attitudes (Bandura, 1997). Among the factors that transform personal change and our personal experiences are alternative experiences, oral questions, and other influencing factors. Other factors point to social, emotion, and cognition. These factors are also known as behavioural tendencies. The primary function of personal effectiveness is to control behaviours through behavioural rules to have a positive impact on individuals.

The contribution of this study is that the cost of self-esteem for everyone is the same, and everyone is rational. High income will result in excess money that can be invested by lecturers. If

the lecturers' level of behaviour is rational, they will be able to accumulate more wealth than the low-income person. In the real situation, there is, or no degree of leverage between lecturers is rational. If their behaviour is rational, they will get their wealth from one type of investment and the factors that cause them to make this decision rate is essential.

### **Literature Review**

The behavioural economy relies on scientific research to determine how people act in different situations (Wilkinson & Matthias, 2012). Studies on behavioural economics show more sophisticated human motivational models need to explain the human response to stock market changes, good luck and wrong, and humans often make decisions contrary to their interests (Schwartz, 2005). It has had a high impact on the financial economy and has led to the field of financial behaviour (Walsh, 2007). Therefore, financial behaviour is a study of psychological influence on the behaviour of financial investors/practitioners and the impact on financial markets.

The study of financial behaviour is divided into two types of efficient and inefficient market hypothesis. Inefficient market hypothesis based on cognitive psychology that examines how people think and arbitrage limits should be accepted when the market becomes inefficient (Ritter, 2003). In contrast the efficient market hypothesis - the traditional financial theory is the basis for many articles to understand financial markets with the assumption that everyone is the rational and the market is efficient (Barberis & Thaler, 2003). It is because conventional economies feel emotional and other factors will not affect individuals when making economic choices. This is why standard economics can not explain why actual behaviour and decisions are unlike the expected results (Hilltop Securities Inc., 2017).

The basic theory of personal finances did base on logic and rationale of human behaviour, but in the real sense, human beings influenced by one's psychological factors causing individual financial decisions to be irrational (Talha et al., 2015). Psychological factors will lead to the actions and decisions made by humans in contrast to what is expected. Therefore, the effectiveness of each human being is different. This is also known as discriminatory behaviour. Therefore, individual reactions and perceptions play an important role in financial markets (Bikas et al., 2013).

According to Barberis and Thaler (2003), the two psychological factors commonly seen by financial economists are beliefs and preference. Bandura (1986) states that cognitive, intermediary, self-regulation, and self-reflective processes in human adaptation and change play a significant role in social function. Factors affecting self-efficacy of self-efficacy are direct experience, alternative experience, social persuasion, and physical and emotional states (Bandura, 1994). Self-efficacy is also affected by confidence level, optimism and desire thoughts, representativeness, conservatism, trustworthiness, anchoring, and the tendency to availability (Barberis & Thaler, 2003). Bandura (1997) states that self-efficacy is the self-esteem of what is capable of being done, and not what needs to be done. Personal effectiveness refers to 'perceive' the ability to learn or executive action at a certain level (Schunk, 2000). It shows that personal effectiveness will change and will affect the choice of life, the level of motivation, adaptation to difficulty, and susceptibility to stress and depression, similarly in the decision of use and investment.

Generally, according to Jiang, Xue, and Wang (2004), personal effectiveness plays a role to adjust and control behaviour. People who are self-effected will be increasingly picking up the challenges that suit their capabilities, which results in their probability of being successful in dealing with people with low self-efficacy. The effectiveness of a person is low on the self-doubt

of self-esteem, which has led them to pursue successful opportunities solely and vice versa. People with high self-efficacy will give more time to analyse problems and solve problems.

In their study, Akhtar et al. (2016) showed a positive relationship between the level of women's financial effectiveness and the probability of having investment or savings goods and services. On the other hand, there was a negative correlation between the level of women's financial effectiveness and the likelihood of having a loan or goods. Joseph, Dhanuraj, and Antony (2017) also indicated that credit behaviour has a positive relationship with financial self-efficacy. Meanwhile, the level of financial inclusion has a negative relationship with credit behaviour, and investment bias is due to the profit from the investment that the investor earns.

Bandura's (1986) socio-demographic, financial literacy, economic conditions, and family structure factors do not directly affect human behaviour. Delafrooz and Paim (2011), Hon (2012), Gautam and Matta (2016) and Mindra et al. (2017) concluded that socio-demographic attributes, financial features, and savings motifs affect the confidence of personal financial effectiveness and the level of financial performance. Fisher (2010) and Mindra et al. (2017) have shown that gender factors result in different levels of financial behaviour. Fisher (2010) and Mindra et al. (2017) showed different levels of behaviour between sex and time deposits. Health conditions do not affect men, but in poor condition cause women less likely to make savings in the short term.

Delafrooz and Paim (2011) found that different age, education, and financial literacy affect changing financial behaviour. On the other hand, Qiao (2012) showed that there is no difference in financial behaviour between male and female students. Delafrooz and Paim (2011) and Gautam and Matta (2016) stated that the annual household income and investment periods play an essential role in influencing the financial behaviour of an individual investor. Fisher (2010) and Akhtar et al. (2016) found that education factors have a positive impact on men to make savings.

Also, Fisher (2010) and Hon (2012) showed that risk tolerance factors play a role in the level of financial performance. Fisher (2010) reported that low-risk tolerance negatively affect the level of savings behaviour of women. It contrasts with Hon (2012) who studied investment behaviour, therefore, this study attempts to know what its impact on the level of behaviour towards other types of financial products.

Furthermore, Mandell and Klein's (2009) study has shown that financial literacy is not significant to the level of financial performance. The results of this study showed that there was no significant effect on the effects of personal financial management courses on secondary school students. However, Robb and Sharpe (2009) and Mien and Thao (2015) found that financial literacy is significant to financial management behaviour. Delafrooz and Paim (2011) indicated that financial literacy influences changes in financial behaviour. Besides, Hon (2012) found that referral groups affect financial behaviour. Reference groups are different from financial literacy. The referral group is the latest informational material referred by individuals to make financial practice decisions. It is due to asymmetric information in financial markets.

The study conducted by Talha et al. (2015) shows no significant difference between the monthly income and the type of risk preferred by the investor. Investment bias is due to the profit from the investment that the investor earns. The impact of arrest, the mental and mental retardation effects of excessive confidence cause investors to make rational decisions and face losses. Hon (2012) examines five factors influencing the behaviour of small investors such as personal background, reference group, return performance, risk tolerance, and cognitive style. The findings proved that

the relationship between personal financial effectiveness and savings behaviour after self-discipline positively.

## Method

### Research Model

This study examines the financial decisions of women lecturers. The type of financial products held by a female lecturer is the result of the financial behaviour of a female lecturer. Therefore, we modeled the types of financial products ( $Y_{im}$ ) as the probability of independent variables that are affected by independent variables, using the binary Probit model specification. The Probit model set up based on a latent variable model. This is because the decision of a female lecturer to hold certain financial products cannot be measured directly by using numerical variables, but can be measured by a nominal scale categorical variable.

Since the probability of holding certain financial products may be affected by the probability of holding other financial products, we used 'regressed' the 'likelihoods' concurrently as a Probit multivariate specification. Therefore, the model was set up in equation (1) as proposed by Cappellari and Jenkins (2003) and applied by Farrell, Fry and Risse (2016). The multilevel Probit model from the conceptual framework can be expressed in an equation as follows:

$$y_{mi}^* = \beta_0 + \beta_1'P_{mi} + \beta_2'L_{mi} + \beta_3'R_{mi} + \beta_4'S_{mi} + \beta_5'X_{mi} + \varepsilon_{mi} \quad \dots\dots\dots (1)$$

$$y_{mi} = \begin{cases} 1 & \text{if } y_{mi}^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

Where  $m = 1, \dots, M$

In equation (1),  $y_{mi}$  indicates the probability outcome for each of the  $M$  different type of financial products,  $P_{mi}$  indicates the psychometric instrument,  $L_{mi}$  indicates a vector of variables that contribute to financial literacy,  $R_{mi}$  indicates the individual's financial risk preferences,  $S_{mi}$  is reference sources.  $X_{mi}$  indicates a vector of socio-demographic characteristics serving as control variables.

The analysis of this study focused on isolating the relationship between psychometric instruments ( $P_{mi}$ ) and the results of individual behavioural decisions ( $Y_{mi}$ ). All other explanatory variables ( $X_{mi}$ ,  $L_{mi}$ ,  $R_{mi}$ , and  $S_{mi}$ ) in equation (1) are independent variables that will affect the results of individual behavioural decisions ( $Y_{mi}$ ).  $\varepsilon_{im}$  is a random variable that is distributed separately, and follows the normal distribution of multivariate, with a mean of zero. The estimation of this study was done using the maximum likelihood simulation method. This is because the budget model of the linear specification is not limited by zero and one. It also shows that this model is non-linear regression; the resulting curve is "S" which is always between 1 and 0. Therefore, we used a probit model for expected decision.

### Measurement of Variable

Financial results are related to an individual level of financial risk. It is also known as financial planning and wealth management of a household. The type of financial product owned by a female lecturer present the financial decision of a female lecturer. The types of financial products included in this study are investments (such as property or shares), mortgages, savings accounts, credit cards, loans, and insurance or takaful. The data of the type of financial product held by a female lecturer is the numerical scoring of multilevel.

Self-efficacy towards finances is the self-ability of what can be accomplished in the financial management of an individual to achieve personal satisfaction with finances (Nguyen, 2012). To obtain data on self-efficacy against finances, we used the instrument of "financial self-efficacy scale" (FSES) replicated by Lown (2011). Six items were used in this survey where individuals responded to statements about their ability to manage their finances and their confidence to do so.

Financial literacy is a skill and knowledge of financial matters confidently taking practical action that best meets the goals of individual personal, family and global communities (Financial Literacy Definition, 2013). Financial literacy is also an education and understanding of how financial resources are available, spent, and stored, as well as the skills and capabilities to make financial resource decisions (Mandell & Klein (2009). The respondents' financial literacy data is obtained by using factors that affect the level of financial literacy throughout their life. Among the information to be collected is the level of general education, financial education, formative experiences that can affect financial literacy.

The risk preference is a concept that describes what someone does when facing more risky and alternative options. Risk choice is an essential predictor for one's behaviour under risk. Risk choices also refer to individual attitudes toward risk, which are a critical factor in the study of decision-making behaviour. The individual has a choice against different risks and can be part of risk seeker, risk aversion and risk-neutral. Risk tolerance is an essential factor and affect personal financial decisions (Snelbecker, Roszkowski, & Cutler, 1990). Therefore, this study will use the category scale of the respondents to answer the risk preference questions of this section.

Social-demographic refers to a group defined by sociological and demographic features. It involves a combination of social and demographic factors. Hogarth and O'Donnell (2000) state that individual demographic and socioeconomic conditions affect the type of financial products he holds. Whereas, Delafrooz and Paim (2011) have proven demographics (gender, ethnicity, age, education, income and financial literacy) that have had storage behaviour. Social-demographics for individuals is their background.

The source of reference here is the source of information that affects the individual's decision on its finances. The source of reference in this study comprises analyst's recommendations from newspapers, magazines, media electronic (TVs), relatives and friends, the internet sources, and investment consultants or advisers about company annual reports or other information. The scale used to measure data is dichotomous.

### **Data Sources and Sampling Technique**

Data sources used in this study are primary data. Respondents are university lecturers in Terengganu and female gender. As reported by Higher Education Department (2017), public universities located in the state of Terengganu are Universiti Sultan Zainal Abidin, Universiti Malaysia Terengganu, and Universiti Teknologi MARA Terengganu Branch. The number of population of academic staff - female lecturers of public universities in the state of Terengganu, is 544 people.

The sampling method used for this study was random sampling, and via Electronic mail, i.e. google form. However, we were not sure that all female lecturers would answer this questionnaire, so data was only considered from female lecturers who answered the questionnaire. We used the solved formula sample size determination (Altares et al., 2003). With the highest confidence level of 95% of the number of samples, finally 239 respondents were selected.

## Results and Discussion

### Descriptive Statistic

The data of this study was collected via email using Google form from February 1 until March 31 2018. The questionnaire was sent to 544 female lecturers of the public university located in the state of Terengganu. However, 239 women lecturers answered this questionnaire. Of the 239 respondents, 92.5% were Bumiputra, 4.6% Chinese, 2.1% other ethnic groups and 0.8% Indians. Most of our respondents were in the age group of 30 to 39 (58.6%), followed by age groups between 40-49 and 50-59 by 29.7% and 10%. Only .4% and 1.3% of respondents consisted of the age group 60 and above and 20-29, respectively. As many as 82% of the respondents were married, only 15.5% of respondents were single.

Table 1 in panel (a) shows that most respondents' monthly income was at range RM4000 - RM6000 (35%). Majority of respondents' education shows that 62% of respondents had a PhD. We found that most respondents for this study were people who are neutral for risk (49%). Only 9% of respondents were risk-taking people. Also, 42% of respondents did not like to risk (risk-averse). For financial products (See Table 1 panel (b)) were found to have the highest savings account of 96.2% of 239 respondents. The other most-owned product was Insurance or Takaful (75.3%). Whereas the most exceptional financial products people own were mortgages, only 8.4% of respondents had this product. Investments (such as property or shares) were the other financial products moderate, as much as 49.4% of respondents had investments. The percentage of respondents who had a credit card and loans had an almost similar percentage value of 65.3% and 69.9%. Before respondents decided to buy a product, respondents had received information from relatives and friends (66.1%) and internet 65.7%).

Table 1

#### Descriptive Statistics

##### Panel (a)

Income (RM)	Frequency (%)	Education	Frequency (%)	Risk Preference	Frequency (%)
4,000 – 6,000	35	Bachelor	5	Risk neutral	49
6,001 – 8,000	33	Master	28	Risk seeker	9
8,001 – 10,000	23	PhD	62	Risk-averse	42
10,001 – 12,000	5	Professional	5		
12,001 above	4				

##### Panel (b)

Financial Products	Frequency (%)	Reference	Frequency (%)
Saving account	96.2	Relatives and friends	66.1
Insurance or Takaful	75.3	Analysts of news	8.8
Mortgage	8.4	Internet sources	65.7
Investment	49.4	Investment advisers	49.4
Credit card	65.3	Media conventional	23.9
Loan	69.9	Media electronic	16.7

### Instrument Analysis

A total of 6 items used to assess the effectiveness of respondents' financial responses that are listed in Table 2. Only 13% of the respondents' responses to the first item were not true at all. A total of 35.15% of respondents answered moderately true and hardly true on this item. Only 16.7% of respondents answered exactly true to this item. Second items, most respondents answered moderately true (44.7%) to the second item, followed by hardly true (31.8%), and exactly true

(17.2%). The respondents who responded not true at all were the lowest on this item, which is 6.3% only.

For the third item, most respondents answered not true at all (34.3%) of this item. Respondents who answered exactly true (10.5%) was least. The answers moderately true and hardly true was only 29.7% and 25.5% of this item respectively. About 45.6% and 38.9% of respondents gave hardly true and not true at all with the item number four. Respondents answered 3.8% exactly true and 11.7% moderately true on the item 4. Totally, 77% of respondents responded strongly disagree and 3.3% exactly true to the item number five. Furthermore, 38.5% and 31.4% of respondents responded hardly true and not true at all to the item number six. Respondents gave 17.6% moderately true and 12.5% exactly true answer to the six item.

Therefore, we found that most respondents answered hardly true and not true to items 3, 4, 5 and 6. Only on the first item, there was no difference between feedback and hardly true. However, on the second item, the given answer “moderately true” by the respondents was more than the “hardly true”.

Table 2

*The Respons on Financial Self-Efficacy Scale (FSES) (%)*

No	Item	Exactly true	Moderately true	Hardly true	Not true at all	Total
1	It is hard to stick to my spending when unexpected expenses arise.	16.7	35.15	35.15	13	100
2	It is challenging to make progress toward my financial goals	17.2	44.7	31.8	6.3	100
3	When unexpected expenses occur, I usually have to use credit	10.5	29.7	25.5	34.3	100
4	When faced with a financial challenge, I have a hard time figuring out a solution.	3.8	11.7	45.6	38.9	100
5	I lack confidence in my ability to manage my finances.	3.3	6.3	13.4	77	100
6	I worry about running out of money in retirement.	12.5	17.6	38.5	31.4	100

The Cronbach alpha method was used to verify the reliability of FSES instrument. As shown in Table 3, the internal consistency for the FSES instrument is .74 which is more than .70 but smaller than .80, meaning that the reliability of the FSES instrument is accepted. The alpha Cronbach values for items 1, 2, and 4 are in the range of .60 to .70 showing a moderate reliability. Whereas, the Cronbach alpha value for items 3, 5 and 6 is between .70 to .80, then the reliability is accepted.

Table 3

*Results of Cronbach's Alpha Analysis for Instruments FSES.*

Item	Obs	Sign	Item-Test Correlation	Item-Rest Correlation	Average Interitem Covariance	$\alpha$
Item 1	239	+	.71	.54	.23	.68
Item 2	239	+	.67	.51	.25	.69
Item 3	239	+	.63	.41	.25	.72
Item 4	239	+	.68	.53	.25	.69
Item 5	239	+	.63	.47	.26	.70
Item 6	239	+	.64	.43	.25	.72
Test scale					.25	.74



Testing of principal-component factor is to assess the underlying correlation strength of all six items in the FSES instrument. In Table 4, the results of the principal-component factors show six survey items used to measure data against financial self-efficacy loaded with weights on one factor. This is because only eigenvalue factor 1 is greater than 1, while factor 2 to 6 is between 1 and .4. Results of the principal-component factors demonstrated that the instrument development was effective in capturing the behavioural elements of the common, and was able to achieve the objectives of this study.

Table 4

*Factor Analysis Using Principle-Component Factors*

Factor analysis/correlation		Method: principal-component factors		
Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	2.67	1.72	0.44	0.44
Factor2	0.95	0.17	0.15	0.60
Factor3	0.77	0.17	0.12	0.73
Factor4	0.60	0.02	0.10	0.83
Factor5	0.57	0.16	0.09	0.93
Factor6	0.41	-	0.06	1.00
Factor loadings (pattern matrix) and unique variances				
Survey item	Factor1	Uniqueness		
Survey item 1	.72	.47		
Survey item 2	.69	.51		
Survey item 3	.59	.64		
Survey item 4	.70	.50		
Survey item 5	.65	.57		
Survey item 6	.61	.61		
LR test:		Independent VS. Saturated		
Chi2(15)	***293.44			
Prob>chi2	.001			
The number of obs.	239			
Retained factors	1			
Number of params	6			

Note. \* $p < .05$ , \*\* $p < .01$ , and \*\*\* $p < .001$

### Financial Efficacy and Financial Decision Behaviour

Table 5 shows the results of the marginal estimation of the Probit regression for the respondents' ability to own a financial product. The study also uses multivariate Probit models to carry out this study. This is because the multivariate Probit model is a generalisation of the Probit model used to estimate multiple correlations of binary outcomes together. The results stated that the  $\chi^2$  test for a model of potential female lecturers for investing ( $\chi^2_{(24)} = 55.55$ ), and credit cards ( $\chi^2_{(24)} = 44.57$ ) are significant at the .01. Subsequently, the  $\chi^2$  test for a model of female lecturers likely to have loans ( $\chi^2_{(24)} = 42.18$ ) and insurance ( $\chi^2_{(24)} = 40.71$ ) was significant at the .05. Only the  $\chi^2$  test for the probability model of female lecturers with pensions and savings accounts alone was not significant. We also found differences in employee status and types of reference: review articles from newspapers, TVs, and magazines did not affect the likelihood of female lecturers having a savings account.

Table 5 shows that personal financial effectiveness, financial literacy factors, financial risk preferences, social-demographic factors, and referral sources only accounted for 16.80% of the potential for female lecturers to invest. Additionally, 18.00% of the variables: personal financial effectiveness, financial literacy factors, financial risk preferences, social-demographic factors, and referral sources could reduce the likelihood of female lecturers having pawn tax. A total of 14.44% of the potential variables of female lecturers have credit cards were explained by personal financial effectiveness, financial literacy factors, financial risk options, social-demographic factors, and referral sources. A total of 14.42% of all independent variables in this study were able to explain the possibility of female lecturers having loans and 15.20% of the female lecturers may have insurance described by all the independent variables in this study. Meanwhile, only 30.11% of the independent variables such as financial efficacy, financial literacy factors, financial risk preferences, social-demographic factors, and referral sources influent the likelihood of female lecturers having a savings account.

Table 5

*Results of Multivariate Probit for Respondents Having Financial Product (with constant variable)*

Independent variables	Financial Product					
	Investment	Mortgage	Saving	Credit Card	Loans	Insurance
<b>Psychometric instruments:</b>						
<i>Financial self-efficacy scale</i> (FSES)	-0.01	-0.02	-0.01	-0.03	***-0.09	**-.007
<b>Factors contributing to financial literacy:</b>						
Educational level	0.03	-0.14	0.07	0.09	0.15	-0.05
Attend financial course	0.32	-0.33	-0.73	-0.33	-0.13	-0.20
Positive financial experience of childhood	0.02	0.02	-0.18	-0.01	0.09	-0.04
Receiving money from parents during a teenager	-0.18	***-1.58	1.87	0.43	0.27	0.55
Working during teenagers	0.28	0.39	-0.91	0.001	-0.19	-0.04
Responsible for managing a teenager's bank account	0.27	0.64	-0.81	0.15	-0.26	0.01
<b>Financial risk options:</b>						
Availability of financial risk	0.05	0.31	-0.38	-0.08	0.16	0.006
<b>Social-demographic information:</b>						
Age	0.14	-0.17	0.20	**0.36	0.16	*0.34
Ethnic	-0.08	-0.07	-0.47	-0.07	-0.08	-0.19
Marital status	0.32	0.08	0.24	-0.22	-0.21	-0.27
Monthly income earning	0.18	0.13	0.15	*0.21	**0.27	***0.32
Employment status	-0.48	-0.35	0.000	***0.96	**0.74	-0.01
Children liability	-0.28	0.38	-0.03	-0.11	0.15	0.01
Home location	*0.34	0.10	-0.05	0.16	-0.29	-0.18
Use English after working	0.20	**-.072	*-1.04	*0.31	-0.09	0.15
Educational level -father	-0.005	0.07	0.23	0.04	0.01	-0.03
Educational level- mother	0.01	-0.03	0.003	0.001	*0.11	0.10
<b>Reference source:</b>						
Analyst of news	*0.67	-0.81	0.001	-0.43	0.22	0.21
TV	-0.19	0.32	0.001	***0.89	0.19	-0.47
Magazines	0.17	0.32	0.001	-0.37	-0.48	*0.82
Internet	-0.10	*0.67	-0.67	-0.05	0.04	0.06
Investment consultant	***0.57	-0.08	*0.90	0.15	0.31	***0.78
Company Annual report	***1.06	0.47	0.69	0.18	0.34	0.13
Constant	-0.954	-0.64	1.89	-1.43	-0.06	0.64
<b>Model criteria:</b>						
The number of obs.	239	239	171	239	239	239
Pseudo R2	0.16	0.18	0.30	0.14	0.14	0.15
Log likelihood	-137.87	-56.36	-24.64	-132.05	-125.16	-113.21
LR chi2(24)	***55.55	24.78	21.23	***44.57	**42.18	**40.71
Prob > chi2	0.001	0.41	0.38	0.007	0.01	0.01

Note. \* $p < .05$ , \*\* $p < .01$ , and \*\*\* $p < .001$

## Discussion

The results of this study revealed that there was a significant increase in the financial self-efficacy scale of a female lecturer, so the less likely the female lecturer had a loan, insurance credit card. Meanwhile, Farrell et al.'s (2016) study show that women with higher personal effectiveness are more likely to have investments, pawnshops or savings accounts, while less to have a credit card or loan. However, this study does not prove to be significant that the level of personal effectiveness can affect the likelihood of female lecturers investing, pawnshops or savings accounts. It may be because our study showed a negative correlation between the level of personal effectiveness and the possibility of a woman makes an investment or pawnshops. It is evident from the economic condition of the country and the unstable exchange rate. Besides, Table 1 indicates that about 96.20% of our respondents have savings accounts (refer to panel (b)). This is because today's savings account plays significant role in money transactions because employers pay lecturers' salary directly to their savings account. This is why all lecturers are directed to open a savings account as a transaction objective. Due to this fact, the relationship between the level of personal effectiveness and the possibility of a female guard having savings account is not significant. Therefore, the relationship between the level of personal effectiveness and the possibility that women have an investment or the pawnshops is positive.

Furthermore, Farrell et al. (2016) show that there is no significance between the level of personal effectiveness and the possibility of female lecturers having insurance. However, his study has proven significant ties between the level of personal effectiveness and the probability of a woman having insurance is negative. It is likely to be due to the different policy of insurance for both Malaysia and Australia. In Malaysia, anyone who buys insurance or does not pay a salary deduction will have a tax income deduction. Besides, Malaysia also has a policy that protects buyers from losing insurance benefits. Its causes Malaysians to believe in the financial system, as well as to believe in insurance companies. It also encourages the residents of Malaysia to buy insurance products. Thus, this study has shown a significant negative relationship between the level of personal effectiveness and the possibility of female lecturers having credit cards, loans and insurance.

Also, our findings show that there is no significant difference between financial risk options and the likelihood of female lecturers having financial products. Farrell et al.'s (2016) study shows significant linkages between financial risk options and the possibility of female lecturers with investments, savings accounts, credit cards, or private health insurance, but not significant to the likelihood of female lecturers having pawnshops, loans, or life insurance. The difference between the present study and the study of Farrell et al. (2016) may be due to the specification of this study on the lecturer's post. It was found that 49% of our respondents do not care about risk (risk-neutral), and as many as 42% of respondents do not like risk (risk-averse). This suggests that the willingness to take financial risks for women lecturers is not high. This may also be because they are more focused on conducting a lecture and mentoring students. In addition to this, women can have excellent knowledge, causing their IQ and EQ to be high. It causes them to have the means to moderate and control their financial risks.

We found that the source of reference also plays an essential role in the financial decisions of female lecturers. However, the type of reference source changes according to the type of financial products. The study also shows that referral sources do not affect the female lecturers who choose savings and loan accounts. Although Hon (2012) found a significant source of references influence

the behaviour of small investors, this study, however, revealed that reference sources affect the decision of owning investment financial products, pawnshops, credit cards, and insurance.

Also, this study found that TVs and the Internet will be able to influence the level of personal effects of a female lecturer. It is probably because today we can access all the information from the internet quickly and easily. This will cause people to believe in the information or learn from the internet directly to our mindset. This procedure also works against TVs, and when we watch TVs, our mindset will continue to learn from TVs. Next, it will affect our behaviour, as stated in "Social Cognitive Theory" and is known as a self-reflective process.

The results of this study also show that female lecturers influence their likelihood of having investment products. However, in their study, Hon (2012), and Gautam and Matta (2016) showed that age, education, income and financial literacy factors influence investors' behaviour. The argument is that the study has focused on women and lecturers, taking into account the factors of personal effectiveness and referral as well. However, this result is credible and correct, we found a relationship between the monthly income variable and the employee status. This is due to age, and lecturer's education level affect income levels (McConnel, 2015). Whereas, financial literacy is not significant, influencing investor behaviour is because reference sources have replaced financial literacy.

Additionally, this study also shows that financial literacy factors have no significant effect on the possibility of female lecturer's participation in insurance. Furthermore, the variable age of marriage and monthly earnings have a significant relationship with the female lecturers to have insurance products. While the results of Rubayah and Hamizah (2017) indicate the status of marriages, race, income, ownership of residential units and types of residential units have a significant relationship with insurance ownership, but gender and age is significant with the ownership of insurance. However, this study also found that age variable, types of employment, income and education level have a significant relationship with insurance ownership. However, marital status and the number of dependents have no relationship, which is significant with the ownership of insurance. Curak, Dzaja, and Pepur's (2013) study showed that age variables, job types and levels of education have significant relationships with insurance demand, but gender, marital status, and the number of dependents have no significant relationship with insurance demand. Therefore, it was concluded that age variable, marital status and month earnings will affect the likelihood that women may have insurance products.

This study also found that the possibility of female lecturers with loans will be influenced by the level of education, employment status, monthly income and employment status. It is due to the high level of education of female lecturers so that employers will pay their high monthly income. This will cause the borrowers to be more willing to borrow money. If their employment status is permanent, mutual traditions find that loans are larger. However, their marriage is likely to cause the borrowers less willing to borrow from them. Kosen (2013) notes that age variables, education and gender status have no significant relationship with the performance of the loan. Chong, Morni, and Suhaimi (2010) also indicate that age, educational and employment status have no significant relationship to repayment performance. Furthermore, the study also estimates the age variables, the monthly income of the employee status, and the presence of financial courses will affect the likelihood of female lecturers having a credit card. The results of this study show that the higher the age and monthly income, the higher the likelihood that female lecturers have credit cards.

## Conclusion

The results showed that female lecturers with higher levels of personal effectiveness lacked debt-related products such as credit cards and loans since there was a negative correlation between the level of personal effectiveness and the likelihood of a female lecturer with investment instruments, or a pawnbroker. Furthermore, there was no significant positive impact on the level of personal effectiveness with the possibility of female lecturers having savings accounts. It was also found that women lecturers with high personal effectiveness were also less likely to have insurance or takaful products.

The study also found that the effects of financial literacy, social-demographic, and referral resources on financial behaviour will always change according to the types of financial products. The result also revealed that because of high expectations of female lecturers, most likely they will hold credit cards or insurance or takaful. Additionally, findings stated that a higher level of female lecturer education will cause them to have a higher probability of having a loan. Meanwhile, lecturers who attended financial courses were less likely to have credit cards than women lecturers who had never attended a financial course.

We also found that monthly income has a positive relationship with the likelihood of female lecturers having a credit card or loan. This is due to the higher education level of female lecturers, so the higher their monthly income will be paid by the employers. It will cause the borrowers to be more willing to borrow money from them. However, the study cannot prove the impact of financial risk on financial behaviour. Besides, the study also found that female lecturers would have investments by referring to news commentators, investment consultants, and company annual reports. Women lecturers also refer to the internet and the company's annual report to have a pawnbroker. Moreover, the source of TVs referrals is a source that will affect the female lecturer to have a credit card. The findings also show statistically significant negative relationships between TVs and the likelihood of female lecturers having insurance or takaful.

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