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Ahmad et al.: Determinants of Financial Behaviours among Malaysians

Determinants of Financial Behaviours among Malaysians

Zauwiyah Ahmad *, Maimun Simun and Md Shukor Masuod

The importance of financial literacy in promoting good financial behaviour has been established in previous studies. Nonetheless, a study that specifically analyses Malaysian or Asian general public is very rare, despite various cases involving bankruptcies, suicides and harassment that result from improper financial decisions within the region. This study focuses on Malaysians' financial literacy and financial behaviour. It is hypothesized that financial behaviour is significantly correlated with financial literacy. It is also expected that Malaysians' financial behaviour and financial literacy vary significantly among those from different education and income levels. A quantitative approach was adopted for this study, utilizing questionnaire survey as the main research instrument. Results showed significant, positive correlation between financial literacy and financial behaviour. Moreover, less educated individuals and lower income earners were found to have lower financial literacy. This paper provides a discussion on educational programmes that could be conducted in order to enhance the public's financial literacy and promotes good financial practices, especially among these groups of individuals.

Keywords: *financial literacy, financial behaviour, lower income earners.*

Introduction

Lusardi and Mitchell (2006) reveal that basic economic concepts related to savings and investment decisions could be alien to many households in various nations including the United States, New Zealand, United Kingdom, Japan, Korea and German. This phenomenon poses serious implications for retirement planning, savings, loans, mortgages and other financial decisions. Moreover, the increased complexity of financial markets causes such decisions to become more difficult as a large number of financial products are available to consumers. Malaysia, one of the developing countries in the Asia Pacific region, also faces a grave issue relevant to financial behaviours among the general public. Improper financial decisions among the public has caused various problems such as harassment from loan sharks, bankruptcy, and even suicide. Bankruptcy statistics among Malaysians are also on the rise (Jabatan Insolvensi Malaysia, 2006). Cases such as these are due to improper financial behaviours among the public. It is believed that improper financial decisions are a result of low financial literacy.

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Financial literacy is often referred to as a basic understanding of investing, insurance, credit management and other personal finance topics (Hill & Perdue, 2008). Financial literacy is also referred to as financial knowledge. Hence, it is the interest of this study to investigate whether the financial behaviours of Malaysians are related to their financial literacy. Should such association exists, the overseeing bodies such as the Credit Management and Counselling Agency, the Central Bank, Permodalan Nasional Berhad and the Ministry of Internal Affairs could therefore place efforts in enhancing financial literacy among the public, apart from promoting good financial practices. This study also examines the impact of education and income levels on Malaysian's financial literacy so that appropriate measures in educating the public could be targeted to the right segment of the population.

In view of this background, this study investigates the relationships between financial knowledge and financial behaviour among Malaysians. Specifically, this study carries the following objectives: (i) to study the relationship between financial knowledge and financial behaviour; and (ii) to determine the impact of education and income levels on financial literacy and financial behaviour. This study is expected to shed light on the current financial literacy among Malaysians and measures that could be taken in order to increase financial literacy and promotes good financial behaviours among the public. Findings from this study may also be relevant to other countries in the Asia-Pacific region due to the similarity in the social system and values.

Literature Review

The life-cycle theory has been used to explain financial behaviours, especially those related to savings. The theory posits that savings rises with income and age whereby younger individuals tend to borrow from the future to fulfil current consumptions, while middle-aged individuals are savers and wealth accumulators (Mitchell & Utkus, 2006). However, Mitchell and Utkus (2006) further argue that there are other factors that could be associated with saving behaviours, which are education and total wealth, and actual behaviours related to savings appear to be inconsistent with the theory.

Lusardi and Mitchell (2006) document that individuals, who are single, less educated, earned lower income and are either young or elderly (not the middle-aged), are more likely to be less financially knowledgeable. The authors also report similar findings in previous studies in other nations whereby low levels of financial literacy could be associated with low education and income levels. Hence, this study is conducted with the premise that financial behaviour is associated with financial literacy and both financial behaviour and financial literacy are influenced by individual's education and income levels. Figure 1 diagrammatically explains these relationships.

Consumers who are well-informed and financially educated are believed to be able to make better decisions especially those related to economic security and financial well-being. Failure to manage personal finances can have serious social and societal consequences. Empirical evidences in Xiao et al. (2009) suggest that positive financial behaviours contribute to financial satisfaction, which in turn contributes to life satisfaction. Good financial practices have also been found to improve health. It has also been found that participants in a credit counselling session who reported having improved health since their participation are more likely to engage in positive financial behaviours and experience improved finances (O'Neil et al., 2005).

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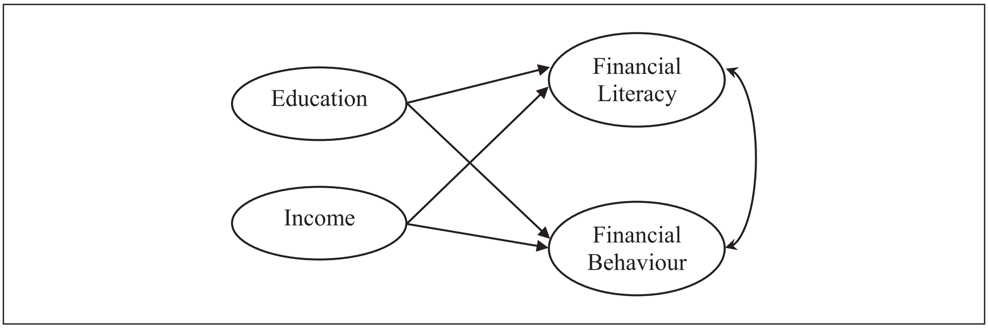
Figure 1. Theoretical Framework



Hilgert and Hogarth (2003) note that previous studies found a correlation between financial literacy and behaviour whereby those who are more financially literate are more likely to engage in recommended financial practices such as paying bills on time and having an emergency fund. The authors explore the linkage between specific financial behaviours and knowledge about such behaviours and have determined that financial knowledge can be linked to financial practices. Moreover, consumers' propensity to save, budget and control spending are found to be partly dependent on their perceived control over outcomes, financial knowledge and financial resources (Perry & Morris, 2005). Financial knowledge has also been found to influence consumer evaluations and intentions related to retirement investments (Howlett et al., 2008).

Other studies have linked financial knowledge and investment behaviours (Morrin et al., 2008), risk taking behaviour (Dulebohn & Murray, 2007), and responsible financial behaviours (Grable et al., 2009). In Lusardi and Mitchell (2007), it is documented that older women have low levels of financial literacy and have done little planning for retirement although retirement planning is more common among participants who are financially literate. The study investigates the impact of financial literacy on retirement planning among mature women of at least 50 years of age. The study covers matters related to inflation, interest rates, risk diversification and retirement planning.

Nonetheless, empirical findings that linked financial behaviours and financial literacy have produced inconsistent results. For example, in Robb and Sharpe (2009), financial knowledge, though significant, seem to have a negative impact on college students' credit card decision. College students with higher levels of financial knowledge had significantly higher credit card balances. The authors conclude that the broad volume of materials in a personal finance course might make it hard for students to apply the knowledge in real-life circumstances. In addition, Mandell and Klein (2009) have found that those who took a personal financial management course are no more financially literate or appear to have better financial behaviours than those who have not. Moreover, these respondents did not perceive themselves as more saving-oriented.

Hilgert and Hogarth (2003) maintain that the direction of the causality between financial literacy and financial behaviour is unclear because causality may be reversed in the sense that people may gain financial knowledge as they save and accumulate wealth. College students who are yet to face varying financial circumstances may lack the necessary experience in order to make favourable financial decisions. Hence, the following hypothesis is developed:

H1: There is a significant correlation between financial literacy and financial behaviour.

Researchers typically conclude that financial education contributes positively towards behaviour change (Lyons et al., 2006). Zhan and Scott (2006) examine the effects of a large financial management training programme for low-income people. Both pre- and post-training data on participants' financial knowledge have been collected. Although it is found that the programme was effective in improving the financial knowledge of participants, other factors are also found to contribute to the knowledge gained from the programme, including English proficiency, ethnicity and marital status.

In Lyons et al. (2006) study, results suggest that the amount of financial education received by low income individuals may contribute to an overall improvement in financial behaviours. Nonetheless, prior level of financial experience may be a better predictor of financial behaviours than the number of lessons received. The study, which examines the impacts of a financial programme, shows greater impacts on participants with lower level of financial behaviours prior to the programme. Similar results are also exhibited in a later study by Chang and Lyons (2008).

Other studies have also documented positive influence of financial education on participants' behaviour. Financial education seminar has been found to increase college students' financial knowledge and responsible attitudes toward credit while reducing their avoidant attitudes toward credit (Borden et al., 2008). Similarly, Hershey et al. (2003) have determined that information-based seminars can influence saving practices. The effectiveness of educational programmes in increasing financial literacy has also been recorded in Varcoe and Fitch (2003)

Apart from financial education, socioeconomic background has also been found to be associated with financial literacy and financial behaviours. Grable (2000) maintain that financial success can be partly explained by socioeconomic background. In Australia, financial literacy has been found to be highest for individuals who are professionals, business owners and university/college graduates (Worthington, 2006). The same study has also determined that unemployed individuals, females and those from a non-English speaking background with low-level of education have the lowest financial literacy. Anderson et al. (2007) note that low-income families often do not access the mainstream banking services and are subject to predatory financial practices. Low income communities also substantially lack knowledge about basic financial issues including savings and investing (Anderson et al., 2005; Zhan et al., 2006).

In Gough and Nurullah (2009), higher financial literacy related to purchase decision in pension and investment products is associated with higher income individuals. Lachance et al. (2006) have determined that young adults' knowledge of credit is positively related to personal income while Gonyea (2007) has found that higher income is one of the predictors of retirement savings behaviour. The effect of demographic and socioeconomic background on financial literacy is also documented in Valentine and Khayum (2005).

These studies have documented two significant predictors of financial literacy and financial behaviours, namely exposures on personal finance (via education, financial programmes and seminars) and income levels. The current study therefore hypothesised that individuals who are more educated are more exposed to personal finance matters and are more resourceful. More educated people exhibit better

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financial behaviour and financial literacy. The second premise of the study holds that individuals with higher economic income may exhibit higher financial literacy and better financial behaviours. Thus, the following hypotheses are constructed:

H2: There is significant difference in financial literacy among respondents of different education levels.
H3: There is significant difference in financial behaviours among respondents of different education levels.
H4: There is significant difference in financial literacy among respondents of different income levels.
H5: There is significant difference in financial behaviours among respondents of different income levels.

Methodology

The study adopts a quantitative research approach in achieving its objectives. A research questionnaire was specifically developed as the main instrument for this study. The instrument elicits data on respondents' financial literacy, financial behaviours and demographics. Financial literacy items tests respondents' knowledge on various financial matters including investments, credit card usage, interest rates, insurance and personal taxation. Financial behaviours items measure respondents' decisions and behaviours related to their personal finance matters such as savings, spending monitoring, loan repayments and budgeting.

Research questionnaires were distributed to various offices and business complexes in two states, namely Melaka and Kuala Lumpur using a quota sampling method. Six-hundred completed questionnaires were returned and subsequently screened for errors and later transferred into SPSS software for data analysis purposes. A series of analyses, including descriptive analysis, correlations and Analysis of Variance were performed on the gathered data.

Result and Discussion

Responses were received from various levels of working adults. The majority of the respondents are male (53.3%), Bumiputras[1] (65%), and married (59.3%). Respondents' age varies from below 20 years old to 55 years of age. Education-wise, the highest qualification obtained by most respondents is a school certificate (38.8%), followed by a bachelor's degree (27.2%). Respondents are from various occupational backgrounds, ranging from professionals (29.8%), self-employed (22.6%) to executives (10.6%). A majority of the respondents are from the lower income bracket, i.e. below RM2,500 (48.8%). The demographic and employment distribution of respondents is presented in Table 1.

Financial Literacy

Financial literacy gauges respondents' knowledge on various personal finance matters. Respondents were required to indicate whether the statement given was correct or incorrect. Respondents were also given an "uncertain" choice in order to avoid respondents from guessing the answers. In order to determine respondents' financial literacy, their correct responses were added to become a total score. The higher score indicates higher literacy level. Responses therefore range between 0, where all responses are incorrect, to 18, where all responses are correct.

[1] Bumiputras are the indigenous people of Malaysia, consisting of the Malays and the indigenous natives from each state.

Table 1. Respondents' Demographics

		N*	Percentage
Gender:	Male	319	53.3
	Female	279	46.7
Ethnic:	Malay and Bumiputra	380	65.0
	Chinese	101	16.8
	Indian	101	16.8
	Others	8	1.3
Age	Below 26 years old	112	18.7
	26 – 30	110	18.3
	31 – 35	114	19.0
	36 – 40	96	16.0
	41 – 45	85	14.2
	46 – 55	52	8.7
	Above 55 years old	31	5.2
Marital status	Single	214	35.7
	Married	356	59.3
	Divorced/separated/widower	30	5.0
Education level	School certificate	230	38.8
	Diploma	129	21.8
	Bachelor's degree	161	27.2
	Post-graduate	73	12.3
Occupation	Self-employed	134	22.6
	Non-executive	71	12.0
	Executive	63	10.6
	Professional	177	29.8
	Others	148	25.0
Monthly income	Less than RM2,500	288	48.8
	RM2,500 – RM5,500	225	38.1
	RM5,501 – RM8,500	67	11.3
	Above RM8,500	10	1.7

* Difference in N is due to missing values.

Table 2 summarises their response on each statement. A majority of the respondents responded correctly to statement 1, i.e. the need for financial knowledge. Respondents also seemed to be well versed on matters related to loans (statements 9 and 19) whereby more than 70% of them responded to this statement correctly. On the other hand, a majority of respondents (43.8%) could not provide correct responses to statements related to investments (statement 13).

Respondents tend to respond as "uncertain" on most of the statements. The most uncertain response is received for statement 10, which tests respondents' knowledge about CTOS, a body that provides individuals' credit background. Statements relating to investments also received higher "uncertain" responses, including those relating to investment in gold (statement 2, 47.6%), government bonds (statement 15, 46.7%), return on investment (statement 8, 43.5%), investment plan (statement 12, 41.1%) and investment practice (statement 13, 40.9%). This indicates the lack of respondents' knowledge on investments.

Financial Behaviour

Ten items were constructed to test respondents' financial behaviours. These items focus on good spending and saving habits such as monthly savings, maintaining emergency funds and monitoring financial situation. Respondents were required to state the level of their agreement with each statement, ranging from "1", strongly disagree to "5", strongly agree. Table 3 presents the mean and standard deviation related to respondents' financial behaviours. The construct validity of the tested items was established through the use of factor

Table 2. Financial Literacy

	Statements	% of correct answer	% of incorrect answer	% of uncertain
1.	Knowledge in personal finance helps you to avoid being conned in an investment scam.	91.4	1.7	6.9
2.	Disposing a house is much easier than selling Kijang Emas (gold coin).	36.1	16.3	47.6
3.	You are spending more if the amount charged to your credit card is more than your salary.	47.6	34.1	18.3
4.	Purchase of books and periodicals are tax deductibles up to a maximum of RM1,000 per annum.	45.6	16.3	38.0
5.	The total amount paid for zakah (tithe) can be used to reduce the tax payable within the same year.	56.0	6.7	37.3
6.	Car insurance premium is determined based on the age of the car owner.	52.8	21.9	25.3
7.	The main purpose of buying insurance policy is for personal protection against losses due to natural disasters such as tsunami.	37.3	41.0	21.7
8.	With an investment of RM1,000 at interest rate of 4% per annum, compounded monthly, the total investment will be RM1,040 within a year.	46.7	9.7	43.5
9.	If you are the guarantor for your friend's loan, you will be responsible to repay the loan in the event your friend defaulted.	76.6	9.1	14.3
10.	CTOS is a private company that provides borrower's credits background information.	40.0	5.0	55.0
11.	Car iinsurance premium is fixed based on type and age of the vehicle.	69.1	9.1	21.8
12.	It is more appropriate for a pensioner that receive fixed monthly pension to invest in high risk investment that provide high return.	40.4	18.5	41.1
13.	A mutual fund investor has the right to advise the investment manager on the type of shares to be invested.	15.3	43.8	40.9
14.	Long term investment refers to investment period of 2 to 5 years.	44.8	20.5	34.7
15.	Investment in the Malaysian government bon is more risky than investment in the share market.	43.0	10.3	46.7
16.	As a guarantor for a friend's loan, you are entitled to receive part of the loan.	75.0	6.9	18.0
17.	EPF members can withdraw from their EPF second account for monthly repayments of their housing loan.	61.4	10.5	28.2
18.	Credit cards can be used to obtain cash loan or advance.	62.3	12.3	25.4

Table 3. Financial Behaviour

Items	Mean	Standard deviation
I have monthly financial planning and observed it strictly.	3.42	1.06
I always review my spending.	3.53	1.04
I record every expense.	3.06	1.11
I know the value my entire assets.	3.09	1.14
I save every month.	3.54	1.17
I always review my financial position.	3.38	1.13
Investment is very important matter to me.	3.54	1.26
I am very cautious with my spending.	3.59	1.06
I have savings that can be used in case of emergency.	3.34	1.13
I am prepared to face any financial problem.	2.96	1.86

analysis. The principal component analysis method was employed and Varimax rotation was applied. The factor analysis for these 10 items resulted in one factor only (Keiser – Meyer – Olkin measure of sampling adequacy was considered acceptable at 0.918). Cronbach's alpha for all items is 0.898, which is considered good.

Respondents rather agree that they are cautious with their spending (mean = 3.59), that investment is important (mean = 3.54), and they have monthly savings (mean = 3.54) and always review their spending (mean = 3.53). However, they quite disagree that they are prepared to face any financial problems (mean = 2.96). Perhaps the current uncertain economic condition creates a feeling of uncertainty among the

Table 4.Correlation Analysis

		Financial literacy
Financial behaviour	Pearson correlation	0.386**
	Kendall's tau-b	0.251**

** Correlation is significant at 0.01 level, 2 tailed.

general public. Respondents are also least likely to record their expenses (mean = 3.06) and to know the value of their assets (mean = 3.09).

Hypothesis testing

Five hypotheses have been developed for the purpose of this study, in accordance with the theoretical framework. The hypotheses test the relationship between financial literacy and financial behaviour and the impact of education and income levels on both financial literacy and financial behaviour.

H1: There is a significant correlation between financial literacy and financial behaviour.

A Pearson correlation analysis was performed in order to determine the interrelationship between financial literacy and financial behaviour. A positive, significant correlation was found between these variables (r = 0.386, significant at 0.01 level). Similar result is obtained from the non-parametric test of Kendall's tau-b. Hence, the above hypothesis is accepted.

This finding further supports that financial literacy has positive influence on financial behaviour. Financial literacy can be obtained either through education or experience. Not all individuals will have the opportunity to experience various financial situations or decision-makings. Hence, for this group of individuals, it is imperative that they are exposed to personal finance matters via special educational programmes.

H2: There is significant difference in financial literacy among respondents of different education levels.

H3: There is significant difference in financial behaviours among respondents of different education levels.

Table 5 summarises the results from the Analysis of Variance performed in order to test the above hypotheses. The influence of education levels on financial literacy and financial behaviour are significant. Respondents from different education backgrounds responded differently on both variables. Those who obtained a bachelor's degree and a post-graduate degree seem to have higher levels of financial literacy compared to those with a diploma and below. On average, degree and post-graduate degree holders achieved more than 11 correct responses out of 18. Those with school certificates only managed to obtain about 7 correct responses and those with diploma, 9 correct responses. In terms of financial behaviour, those with lower education exhibit less favourable financial behaviours. Those who only have school certificate rated lower good financial practices, compared to diploma holders and higher.

H4: There is significant difference in financial literacy among respondents of different income levels.

H5: There is significant difference in financial behaviours among respondents of different income levels.

Table 6 summarises results from the Analysis of Variance that tested the above hypotheses. Significant differences were detected in responses among respondents from different income levels. Respondents who were higher income earners were found to have higher financial literacy levels compared to those in the lower

Table 5. Analysis of Variance

		Mean	*F*-value	Sig.
Financial literacy	School certificate	6.70	68.718	0.000
	Diploma	9.21		
	Bachelor's degree	11.83		
	Post-degree	11.97		
Financial behaviour	School certificate	3.10	14.332	0.000
	Diploma	3.36		
	Bachelor's degree	3.60		
	Post-degree	3.57		

Table 6. Analysis of Variance

		Mean	*F*-value	Sig.
Financial literacy	RM2,500 and lower	6.99	71.841	0.000
	RM2,501 – 5,500	10.93		
	RM5,501 – 8,500	13.10		
	Above RM8,500	12.80		
Financial behaviour	RM2,500 and lower	3.10	20.508	0.000
	RM2,501 – 5,500	3.55		
	RM5,501 – 8,500	3.71		
	Above RM8,500	3.87		

income bracket (RM2,500 and lower). This group only obtained about seven correct responses out of 18. The middle income earners (RM2,500 – RM5,500) were found to have moderate financial knowledge (about 11 correct responses). Low income earners also seemed to indicate lower good financial practices compared to the other groups (mean = 3.10). This result further supports the notion that financial literacy is enhanced as individuals have resources to manage. Those who are low income earners may not have the opportunity to consider investment choices.

These results suggest that any personal finance programme should focus on those from the lower education and lower income backgrounds. Perhaps, these programmes could also emphasise on creating the awareness toward financial management as well as equipping participants with financial knowledge necessary for wealth accumulation that cater specifically to their background.

Conclusion

Increasing financial literacy and promoting good financial behaviour are challenges faced by the government and its agencies. Financial illiteracy could let people to, among others, choose the wrong financial products and to unwittingly save less than they should. This study has shown that focus should be given to the lower income earners and the less educated citizens. The study has also shown that monetary concepts as simple as compound interest are alien to this group of respondents. One of the ways to impart financial knowledge is via financial education. It is believed that financial education may prove to be beneficial in improving financial literacy. Studies have shown that people fail to make correct decisions because they have not received a sound personal finance education (Hira, 1993; O'Neill, 1993). There are two avenues for the delivery of financial education which are schools and the workplace.

According to Bernheim et al. (2001), it is possible to assess the effects of financial education exposed during childhood on adults. Adults who were exposed to education mandates and financial education during high school were shown to have higher savings rates and to have accumulated more wealth than adults who were not exposed to financial education during high school. Financial education programme and workshops need to be developed particularly for secondary school students, as money habits, just like other habits, are formed early in life. So the earlier individuals learn how to be money savvy, the less susceptible they may be to financial marketing. Moreover, these youngsters may join the work force as soon as they finish their schooling. Lusardi (2009) found that financial education in high school could have lasting effect on an individual's financial literacy. Perhaps, the Asia-Pacific region could also adopt similar financial education framework and introduce financial literacy curricular at the school levels.

At the workplace, especially the private companies, employers could offer financial education via training and short courses. Nonetheless, there are a few issues that need to be considered. If the education programmes are voluntary in nature, it may not attract those who are really in need of such exposure. This group of workers may lack the interest and awareness on the significance of such knowledge. If the education programmes are made compulsory, it may cause dissatisfaction and the objectives of the course may not be achieved. To overcome these issues, employers could provide other incentives in order to promote voluntary participation such as making the financial training as part of the employees' performance assessment criteria. Employers can also collaborate with the non-governmental organization such as Consumers' Association and regulatory bodies such as Central Bank and Securities Commission in order to create awareness and increase participation.

People may not understand the concept of personal finance which has caused them to be burdened with debt. Organising regular financial literacy talks by experts to educate the public on how to better manage their personal finances with topics related to retirement planning, investment planning, children's education, and debt consolidation, for example, will develop their confidence in managing their finances. In Malaysia, one of the efforts taken by the government is by organising an annual event called "Minggu Saham Amanah" or Unit Trust Week. It is a week-long exhibition that gathers participation from various institutions in the finance and investment industry such as financial institutions, insurance companies, and investment firms. Representatives from other industries also take part in the exhibition in order to introduce their products and services. The programme adopts an interactive approach whereby various investment-based activities are conducted throughout the week. Nonetheless participation from the public is very much voluntary. To overcome this problem, the organisers provide other attractions such as competitions and gifts.

References

Anderson, S. G., Zhan, M., and Scott, J. (2007), Improving the Knowledge and Attitudes of Low-Income Families about Banking And Predatory Financial Practices, *Families in Society, 88*(3), pp. 443-452.

Anderson, S.G., Zhan, M., and Scott, J. (2005), Developing Financial Management Training In Low-Income Communities: Assessing Needs and Community Practice Implications, *Journal of Community Practice, 13*(4), 31-49.

Bernheim, D. B., Garrett, D. M.,and Maki, D. M.(2001), Education and Saving: The Long-Term Effects of High School Financial Curriculum Mandates, *Journal of Public Economics*, 80(3), 435-465.

DOI: 10.21002/icmr.v2i2.3663

Borden, L.M., Lee, S.A., Serido, J., & Collins, D. (2008), Changing College Students' Financial Knowledge, Attitudes, and Behaviour Through Seminar Participation, *Journal of Family and Economic Issues, 29*(1), 23-40.

Chang, Y , and Lyons, A.C. (2008), Are Financial Education Programmes Meeting the Needs of Financially Disadvantaged Consumers? , *Journal of Personal Finance, 7*(2), 84-109.

Dulebohn, J.H. and Murray, B. (2007), Retirement Savings Behaviour of Higher Education Employees, *Research in Higher Education, 48*(5), 545-582.

Gonyea, J.G. (2007), Improving the Retirement Prospects of Lower-Wage Workers In A Defined-Contribution World, *Families in Society, 88*(3), 453-462.

Gough, O.and Nurullah, M. (2009), Understanding What Drives the Purchase Decision In Pension And Investment Products, *Journal of Financial Services Marketing, 14*(2), pp.152-172.

Grable, J.E. (2000), Financial Risk Tolerance and Additional Factors That Affect Risk Taking In Everyday Money Matters, *Journal of Business and Psychology, 14*(4), 625-631.

Grable, J.E., Park, J.Y., & Joo. S.H. (2009), Explaining Financial Management Behaviour For Koreans Living In The United States, *Journal of Consumer Affairs, 43*(1), 80-107.

Harris/Scholastic Research (HSR), (1993), *Liberty Financial Young Investor Survey*. New York, NY.

Hershey, D.A., Mowen, J.C., and Jacob-Lawson, J.M. (2003), An Experimental Comparison Of Retirement Planning Intervention Seminars, *Educational Gerontology, 29*(4), 339-390.

Hilgert, M.A.and Hogarth, J.M. (2003), Household Financial Management: The Connection Between Knowledge and Behaviour, *Federal Reserve Buletin,* 89(7),309-322.

Hill, R.R.and Perdue, G. (2008), A Methodological Issue In the Measurement of Financial Literacy, *Journal of Economics and Economic Education Research, 9*(2), 43-57.

Hira, T. (1993), *Financial Management Knowledge and Practices: Implications for Financial Health,* Paper presented at the Personal Economics Summit '93, Washington, D.C.

Howlett, E., Kees, J., and Kemp, E. (2008), The Role of Self-Regulation, Future Orientation, and Financial Knowledge In Long-Term Financial Decisions, *Journal of Consumer Affairs, 42*(2), 223-242.

Jabatan Insolvensi Malaysia (2006). Statistik Kebangkrapan. Available at http://www.bheuu.gov.my/jim/index.php?option=com_content&view=article&id=55&Itemid=72 [Access on 14 November, 2008).

Lanchance, M.J., Beaudoin, P.,and Robitaille, J. (2006), Quebec's Young Adults' Use Of And Knowledge Of Credit, *International Journal of Consumer Studies, 30*(4), 347-359.

Lusardi, A. (2009), The Importance of Financial Literacy., *NBER Reporter,*(2), 13-16.

Lusardi, A. ,and Mitchell, O.S. (2007), Planning and Financial Literacy: How Do Women Fare?, *American Economic Review, 98*(2), 413-417.

Lusardi, A.,and Mitchell, O.S. (2006), Financial Literacy and Retirement Preparedness: Evidence And Implications For Financial Education, *Business Economics*, 42(1), 35-44.

Lyons, A.C., Chang, Y., and Scherpf, E.M. (2006), Translating Financial Education Into Behaviour Change For Low-Income People, *Journal of Financial Counseling and Planning, 17*(2), 27-44.

Mandell, L.,and Klein, L.S. (2009), The Impact of Financial Literacy Education on Subsequent Financial Behaviour. *Journal of Financial Counseling and Planning, 20*(1), 15-24.

Mitchell, O. S. & Utkus, S. P. (2006), How Behavioural Finance Can Inform Retirement Plan Design, *Journal of Applied Corporate Finance, 18*(1), 82-94.

Mitchell, O. S. (2001), Worker Knowledge of Pension Provisions, *Journal of Labor Economics, 6*(1), 21-39.

Morrin, M., Broniarczyk, S., Inman, J. J., and Broussard, J. (2008), Saving For Retirement: The Effects of Find Assortment Size and Investor Knowledge On Asset Allocation Strategies, *Journal of Consumer Affairs, 42*(2), 206-222.

O'Neill, B. (1993), *Assessing America's Financial IQ: Reality, Consequences, and Potential For Change,* Paper Presented At the Personal Economics Summit '93, Washington, D.C.

O'Neill, B., Sorhaindo, B., Xiao, J.J., and Garman, E.T. (2005), Financially Distressed Consumers: Their Financial Practices, Financial Well-Being, and Health, *Journal of Financial Counseling and Planning, 16*(1), 73-87.

Perry, V.G. and Morris, M.D. (2005), Who Is In Control? The Role of Self-Perception, Knowledge, and Income In Explaining Consumer Financial Behaviour, *The Journal of Consumer Affairs, 39*(2), 299-313.

Robb, C.A. and Sharpe, D.L. (2009), Effects of Personal Financial Knowledge on College Students' Credit Card Behaviour, *Journal of Financial Counselling and Planning, 20*(1), 25-38.

Valentine, G.P. and Khayum, M. (2005), Financial Literacy Skills of Students In Urban And Rural High Schools, *Delta Pi Epsilon Journal, 47*(1), 1-10.

Varcoe, K.P., and Fitch, P.R. (2003), Money Talks – A Programme To Improve Financial Literacy of Teens, *International Journal of Consumer Studies, 27*(3), 225-226.

Worthington, A.C. (2006), Predicting Financial Literacy In Australia, *Financial Services Review, 15*(1), 59-79.

Xiao, J., Tang, C, and Shim, S. (2009), Acting for Happiness: Financial Behaviour and Life Satisfaction of College Students, *Social Indicators Research, 92*(1), 53-68.

Zhan, M, Anderson, J., and Scott, J. (2006), Financial Management Knowledge of The Low-Income Population: Characteristics and Needs, *Journal of Social Service Research, 33*(1), 93-106.