



Financial literacy and investment decisions in Malaysia and United Kingdom: A comparative analysis

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Abstract

In today's advance and complex financial landscape, financial literacy (FL) is essential as it does not only influence and impact upon financial decisions at the firm level but also a country's wider financial wellbeing and socio-economic development. This study compares the FL levels of Malaysia and United Kingdom by utilising the results of the survey from the questionnaire developed by the OECD and by examining demographic and socio-economic factors that influence the level of FL. The results show that, overall, the level of FL in both countries are low and necessary measures should be taken by the government to increase awareness of financial related matters. The literature findings also reveal that demographic, economic, social, and psychological factors are the main determinants, that some common themes appear with respect to the consequences of FL on investment decisions, demographic factors, methodology and program effectiveness, and that gaps exist in the literature of FL in Malaysia with respect to types of investment and risk tolerance, measurement of financial literacy, methodology and sources of knowledge. The study provides information that may assist in directing future research and in formulating policies and guidelines for policy makers, administrators and educators in incorporating suitable FL components in their training endeavours.

Keywords: behavioral finance model, financial decision making, financial literacy, investment decisions, risk tolerance, traditional finance theory

Introduction

Financial decision making has been widely acknowledged as one of the important factors that influences financial capability and financial wellbeing. Thus, identifying factors that are significantly associated with financial decisions is relevant and is one of the crucial issues for individual and national development. With the dynamism in the nature of current financial landscape, not only it highlights the importance of research in investment decision but also on the level of financial literacy (FL) and its impact on financial decision. Moreover, wealth accumulation has been identified as an important implication for the relative well-being of households. Prior research suggested that deficiencies in FL is one of the causes of inertia and suboptimal financial decision-making. While studies have found that FL is generally low (Lusardi and Mitchell, 2011), studies on the demographic and socio-economic factors such as gender, education, income and inequality are still debatable and warrant for further studies. Moreover, studies on the impact of FL on investment decisions have also produced mix conclusion and relevant to the current advancement of financial climate.

Several researches on the impact of FL have focused on the relationship between FL and investment decisions. Recent research development in examining the factors that influence investment decisions had utilized the behavioral finance theory rather than relying on the traditional finance theory. Behavioral

finance is the study of the influence of psychology on the behavior of finance practitioners and the subsequent effect on markets (Sewell, 2010). The latter theory states that investors think rationally and make deliberate decisions, by basing on various estimations or using economic models. According to the behavioral finance theory, investors are human beings with unique features; and in various situations make their own decisions since their rational thinking is hampered by their own attitudes, psychological condition and biases. Also, they do not follow traditional financial rules; hence, highlighting the weaknesses and deficiencies of the traditional finance theories. This is confirmed by behavior finance supporters such as Pompian (2008) who provides evidence on the impact of financial behavior on investment decisions. Given the complexity of current financial instruments with new high technological investment instruments, review on literature that links financial literacy to investment decision that relies on this behavioral finance theory could provide better insights into the research development of this topic.

Thus, the main objectives of our study are to examine the level of FL and review its link to investment decisions. We focused on three main components of FL; namely financial knowledge, behavior and attitude. Our study also covers the socio-economic factors that could influence FL and its link to investment decisions such as income, gender occupation etc. This study reviews research studies and literature to gain knowledge of key factors that influence investment behavior in different countries in relation to FL and the ways these factors impact investment risk tolerance and decision making process. Enhanced theoretical and empirical understanding of the factors that are particularly associated with investment choice decisions would enable development of well-targeted financial education programs.

The paper starts with the introduction and followed by the literature review which discusses the concepts, FL level, the link between FL and investment decisions and the determinants of the relationship. Methodology is presented in Section 3 and followed by the findings and discussion in Section 4. The conclusion and implication are presented in Section 5.

Literature review

Financial literacy

The working definition of FL given by the Organisation for Economic Co-operation and Development, 2005 (OECD) is that, it is a combination of awareness, knowledge, attitudes and behavior necessary to make sound financial decisions and ultimately achieve individual financial wellbeing. This definition highlights the three components of FL, namely financial knowledge, attitude and behavior which becomes the focus of this study.

The significance of FL in financial decision making as highlighted in the report of The World Bank include: i) helps to prepare consumers for tough financial times, by promoting strategies that mitigate risk such as accumulating savings, diversifying assets and purchasing insurance. ii) reinforces behaviors such as timely payment of bills and avoidance of over-indebtedness which help consumers to maintain their access to loans in tight credit markets. More financially literate consumers increase the demand for, and responsible use of, financial services, help to underpin financial market stability, and contribute to wider economic growth and development. iii) critical for promoting access to finance by creating incentives and environment that promote desired financial behaviors such as saving, budgeting or using credit wisely. Financially savvy consumers are more likely to save their money, compare financial products and services and discuss financial matters with their families.

Research interest on FL has been developed more than a decade ago in which researches had mainly been conducted for developed countries such as in the United States of America (USA) and the United Kingdom (UK). Although there appears to be consensus regarding the importance of FL especially in economic development, empirical research is limited. In Australia, the first study measuring the FL of Australians was conducted in 2004 by the Commonwealth Bank Foundation, in collaboration with universities and research institutes. The Foundation had commissioned the research to investigate

people's ability to make informed and responsible financial decisions and analyzed the relationship between FL and its impact on individuals. The research displays a profile of those Australians with the lowest levels of FL and demonstrate significant potential benefits for both individuals and the economy from improved FL. The results show that socioeconomic factors such as income are related to FL and those who are more literate have higher income are significantly more likely to own a business; more ability to raise 10 per cent of their annual income within a week, boosting their ability to withstand sudden financial pressure; and illiterate respondents are not able to pay their mobile phone, utility and credit card bills in the last 10 years.

Beside focusing on FL level, studies in the area also examine factors that influence the level. For instance, using US data, Hogarth (2002) explores the FL of adults on topics related to personal finance. The study shows that, in general, less financially knowledgeable respondents are more likely to be single, relatively uneducated, low income, minority, and either young or old (not middle aged). Study using Australian data, Beal and Delpachitra (2002) measure FL of Australian students and find that university students are neither skilled nor knowledgeable in financial matters. Beyond this level, they find that students with higher scores are more likely to be male, have greater work experience and have a higher income. Study by Worthington (2006) on Australia also, uses logit regression models to predict FL of Australian adults. Results of the study suggest that FL is found to be highest for persons aged between 50 and 60 years, professionals, business and farm owners. FL is the lowest for unemployed, females and those from non-English speaking background.

Besides US and UK, significant economic importance of FL has motivated research to examine other countries including developed, developing countries and emerging markets for instance Australia, Korea, India, Indonesia, Malaysia, and United Arab Emirates (UAE). Using Korean data, Sohn et al (2012) examine relationships between financial socialization agents, financial experiences, money attitudes, demographic characteristics, and the FL of adolescents using the 2006 Korean National Financial literacy Test Survey for Adolescents. The findings yield that those who chose media as their primary financial socialization agent, and those who had a bank account, demonstrate higher level of FL. In addition, they find that those who regarded money as good or as a reward for efforts reported higher level of FL than those perceiving money in terms of avoidance or achievement. Students with mid-range monthly allowances showed higher level of FL than the highest allowance group.

Focusing on FL level among investors, Al-Tamimi and Al Anood (2009) assess financial literacy for UAE investors and share the common findings that FL is far from the needed level. FL is found to be affected by income level, education level and workplace activity. In contrast, for Indian investors of Hyderabad city, Agarwal et al. (2010) evaluate FL online and the findings suggest that these investors are generally financially literate. They also observe that there are variations in FL level across demographic and socio-economic groups. Differences in terms of demographic and socio-economic groups has also been observed by Volpe et al. (2002) who examine investment literacy of 530 online investors for Australia. They find that the level of investment literacy varies with people's education, experience, age, income and gender. Specifically, women has much lower investment literacy than men and older participants perform better than young participants.

Another factor that could have influence on the FL is gender. Chen and Volpe (2002) for instance has raised the suggestion that gender is a significant variable impacting the level of FL. Their findings suggest that women, in comparison to men, are more risk-averse when making financial decisions, and are consequently less financially literate. More importantly they find that lack of confidence may explain why men are more financially knowledgeable than women. Their study thus show that factors that are likely to impact on women's financial ability include the lack of financial knowledge, reluctance to take risk and lack of confidence. Possible reasons identified for the lack of confidence and risk taking displayed by women in financial skills may be due to their traditional role as part of society, who undertake the roles of homemaker and other carer duties which may be more significant in affecting their financial decision makings. All of these studies provide evidences that FL level among investors are mixed and the

characteristics of the literacy also varies among countries and different demographic and socio-economic factors.

Financial literacy and investment decisions

Studies on personal finance have examined the significant impact of FL on economic development, for instance through the effects of financial illiteracy on financial decision making. In Malaysia, Faoziah et. al (2013) provide evidence on the effect of FL on financial distress among Malaysian youths. Their study shows that the levels of respondents' financial distress and FL were moderate with a positive but weak relationship between these two variables. The results thus point to the fact that the relevant agencies and organizations should invest in human resources with respect to personal financial management as such knowledge investment would help raise the level of financial literacy among individuals and achieve the nations own objectives of high productivity. Studies for other lesser developed countries, such as India and Indonesia demonstrated by Cole et al. (2008) who examine FL level, its determinants and the effect on the demand for financial services. They observe a strong relationship between FL and financial behavior and that FL is an important correlate of household financial behavior and household wellbeing.

Given the complexity of current financial instruments and the financial decisions required in everyday life, such as comparing different financial instruments to invest, deciding how much to save, when and where to invest, when and where to get the financing, individuals need to know how to read and write their financials. Furthermore, the needs for FL have become increasingly significant with the deregulation of financial markets and the easier access to credit; the rapid growth in marketing financial products and the Government's encouragement for its citizens to be more responsible with their investments and retirement incomes (Marcolin & Abraham, 2006; Binswanger & Carman, 2012). On these issues, individual with less financial knowledge has more negative opinion about finances and makes more incorrect financial decisions. There are studies which suggest that acquiring a low level of financial knowledge limits their ability to make informed decisions. For instance, individuals who lacked FL have been deterred from embracing innovative financial products, making sound financial planning decisions as well as giving serious consideration and commitment to their financial plans, lack of retirement planning and participation in the stock market and poor borrowing behavior. One of the implication from these, is the cost of poor financial decision-making and planning often gets shifted to other members of the community, state and nation through higher prices for financial products and diversion of economic resources.

In regard to the impact of FL on investment decision, most of the theories used have been focusing on the traditional finance which includes portfolio allocation based on expected return and risk; risk-based asset pricing models such as the CAPM and the Miller-Modigliani theorem. These theories are all derived from investors' rationality with the focus on corporate finance. The theory of behavioral finance has been introduced to overcome the limitations of the corporate finance theories in explaining the personal finance behavior such as in understanding the issues of why individual investors trade, their performance and their portfolios' selection. Hence, behavioral models are based on how people actually behaved based on extensive experimental evidence, and could explain evidence better than traditional ones from the aspect of individual decision making.

Previous studies have also documented that gender and age have some implications on investment decisions. For instance Schmidt & Sevak, (2006) describe how household wealth in the United States varies by gender and family type and find that women's investments, historically had been lower than of men's because of social and various demographic concerns. They also observe differences of wealth holdings between single-female-headed households and married couples. By controlling for characteristics such as income and education, the wealth holdings of single females are significantly lower than the wealth holdings of single males. In contrast, observed wealth gaps between genders in a sub-sample of young households disappeared when controlling for observable characteristics, suggesting

either that in the US these gaps are disappearing for younger households or that these gaps do not emerge until later in life. Bertocchi et. al (2011) also support the influence of marriage on the decision.

Previous studies have examined the impact of FL on different types of investment decisions such as retirement (Yoong et al., 2012, Almenberg & Soderbergh, 2011; Klapper & Panos, 2011; Lusardi & Mitchell, 2011) and stock market investment (Van Rooij et al., 2011). Almenberg and Soderbergh (2011) examine the relationship between FL and retirement planning of Swedish adults. FL levels were found to be lower among older people, women and those with low education or earnings. For Russia, Klapper and Panos (2011) found that higher literacy was positively related to retirement planning and investing in private pension funds. For the US, Lusardi & Mitchell (2011) examine the influence of FL on retirement planning as to what extent the Americans were equipped to make decisions in the pension and financial landscape and are they sufficiently knowledgeable about economics and finance to plan for retirement. The findings highlight problems with financial knowledge in which many respondents lacked the key knowledge of critical financial concepts including interest compounding, inflation, and risk diversification; and failed to plan for retirement, even when retirement was close at hand. Such finding is said to be caused by debt illiteracy referring to respondents' lack of knowledge about the workings of credit cards and interest compounding, which could justify the relationship between financial illiteracy and the lower retirement wealth accumulation. FL is also found to be particularly low among the young, women, and the less-educated, older individuals. The study also highlight the importance of different ethnicities in influencing the FL. The study also show that those who scored higher on the FL questions were also much more likely to plan for retirement, which likely to provide them with a better life at old-age. For Malaysia, Yoong et al (2012) show a significant relationship between financial learning and behavioral assessment of personal finance. The study also detected the impact of age differential in which the older age groups more than 50 years) influenced the relationship between financial learning and subjective perception of satisfaction with personal finance.

For stock market investment, Van Rooij et al. (2011) conclude that those with low literacy were much less likely to invest in stocks. They devise two special modules for the Household Survey in Netherland to measure FL and study their links to stock market participation. They find that the majority of respondents demonstrated a basic financial knowledge and have some grasp of concepts such as interest compounding, inflation, and the time value of money. However, many respondents could not distinguish between bonds and stocks, the link between bond prices and interest rates, and the basics of risk diversification; thus, confirming that FL does influence financial decision-making.

Methodology

In examining FL levels, our study utilize the information from the Organization of Economic Cooperation Development (OECD) results of 2012 survey based on the questionnaire provided by the organization. The questionnaire focuses on the three main aspects of FL, namely knowledge, attitudes and behaviors. For financial knowledge, eight questions have been designed to test for this aspect covering different aspects of knowledge; knowledge on division, time value of money, return earned on the loan, calculation of interest plus principle, compound interest, risk and return, inflation and diversification. These questions are considered sufficient incapturing the essential aspects of a person's basic knowledge. For the purpose of this study, these questions are also related to the knowledge on the basic concepts in investment.

In regard to financial behavior, the questionnaire asks the respondents on questions in which responses to these questions will reflect information on their behavior; for instance about the ways they manage their money, including whether they can afford to buy something, paying bills on time and monitoring over their financial spending, saving and borrowing habits and setting financial goals, household budget and choosing financial products. Incorporating all the information into an overall score ensures a nuanced indicator that provides a good indication of the extent to which individuals are behaving in a financially

literate way. The score is created with nine points for showing evidence of certain positive financial behaviors; and for reporting purposes it has been rescaled from 0 to 100.

For financial attitude component, three attitude statements are used. Exploratory factor analysis indicates that the three attitude statements capture an underlying attitude, indicating whether the respondents tend towards short term gratification, or long term security. An average attitude score has therefore been created by adding the responses to each of the three statements, and then divided by three.

Findings and discussions

Financial knowledge

The results for the financial knowledge score as depicted from Table 2 show that the overall score for both countries demonstrated an average level of FL, 51% for Malaysia and 53% for UK.

Table 1. Correct responses to knowledge questions

Question	Note	Score Malaysia %	Score UK %
1 Division	Open response and a correct answer is therefore a good indicator of applied numeracy	93	76
2 Time value of money	Multiple response	62	61
3 Interest paid on a loan/ return earned on a loan	Open response and a correct answer is therefore a good indicator of understanding	93	90
4 Calculation of interest plus principle	Open response and a correct answer is therefore a good indicator of applied numeracy	54	61
5 Compound interest	Multiple response	30	37
6 Risk and return	Yes/no question	82	77
7 Definition of inflation	Yes/no question	74	94
8 Diversification	Yes/no question	43	55
Total score		51	53

For both countries, the findings show that more than half of the respondents gave correct responses to at least ¾ of the questions. The high score of 93% on the division especially for Malaysia show that most of the respondents could use mental arithmetic to undertake a simple division. However, fewer respondents gave a logical answer for Malaysia (62%) and UK (61%) on the follow-up question designed to identify those who understand how time difference could affect the value of money in relation to the investment, compounding and discounting concepts. In both countries more than 90 percent gave a correct response on the concept of interest being paid on a loan or the term return earned a loan specifically used for Malaysia to reflect the duality of the financial system. Around half of the respondents gave a correct answer on the calculation of interest plus principle which reflect on the difficulties to calculate a percentage. The following question on the compounding of interest or return was found to be harder for both Malaysia (30%) and UK (37%). On the central paradigms of investment, respondents in both countries are most likely to understand the basic concept of risk and return, 82 % for Malaysia and 77% for UK. Regarding inflation, over 90 percent of respondents in UK knew that high inflation meant that cost of living is increasing, suggesting an awareness of the simple economic terms as compared to Malaysia (74%). Another important concept of investment, diversification, only 43 percent of respondents in Malaysia give the correct answer as compared to 55 percent in UK.

Financial behavior

Scores to reflect on financial behavior is depicted in Table 2. The statements used, consider several aspects to reflect the behavior of the respondents. The first behavior statement shows that respondents in Malaysia (92%) typically did consider whether they could afford potential purchases as compared to UK (77%), which indicates that 23 percent of the respondents tended not to consider affordability during their purchases. The question on whether the respondents usually pay their bills on time consider the individual organizational skills in meeting their financial obligations and thus avoiding problems such as reduced access to affordable credit or fines for non-payment. Most respondents in UK reported that they did, however a sizeable proportion of respondents in Malaysia (31%) indicated that they had not being paying many of their bills on time which supported the report saying that Malaysians have problem with their debts. Such findings may be due to a variety of reasons including insufficient funds, lack of access to e-payment facilities or a tendency to be disorganized or unwilling to meet responsibilities on time.

Table 2. Scores for financial behavior

Question	Score Malaysia %	Score UK %
Behavior statements		
1 Carefully considers purchases	92	77
2 Pays bills on time	69	89
3 Keeps close watch on personal financial affairs	78	80
4 Sets long term goals and strives to achieve them	64	43
5 Responsible and has a household budget	74	43
6 Has been actively saving or buying investments in the past year	97	68
Financial product choice		
7 After gathering some info	39	29
8 After shopping around and using independent info or advice	3	16
9 Has not borrowed to make ends meet	79	91
Total score	67	51

On the third question, majority of the respondents in Malaysia (78%) and UK (80%) were aware of their own finances. This reflect how often respondents keep a close watch over their financial affairs which is important for those who use financial products as they need to be aware of anticipated withdrawals from their accounts and checking their bank statements in order to detect any fraudulent activity, such as unauthorized use of credit cards. This is also essential in order to protect savings, manage expenditure and bill payment. On long term financial goals setting, in UK, this behavior does not appear to be widespread in which only 43 percent of the respondents were the most likely to set long term goals, as compared to Malaysia (64%). This cover statements related to accruing money for specific expenses; such as education fees, wedding, investment strategies, saving for retirement, business and careers. On the statement regarding the information on the extent to which the respondents take the responsibility for household finance and budgeting, more than 3 quarter of respondents in Malaysia were financially responsible and did their budgeting as compared to UK (43%). The statement on saving behavior, another important element of FL, measure building financial security and reducing heavy reliance on credit. The question asked on their savings for the past 12 months in terms of types of saving; namely saving money at home, informal savings, saving accounts and investment instruments. In Malaysia, the score of 97 percent who reported that they had been saving reflecting a clear culture of saving as compared to UK, with the score of only 68 percent.

How people behave when they want to buy financial products is also measured which also cover the behavior of getting the information. People are more likely choose appropriate products if they use advisor or shopping around to make an informed decision; For UK, respondents were most likely to have

made active financial products choices by shopping around and using independent information or advice compared to Malaysians (3 percent).

FL also cover the strategies to smooth income flows and using credit for basic needs wisely. The results showed that respondents in Malaysia (21%) and UK (9%) are unlikely to resort to credit use to make ends meet. The score on financial behavior show that Malaysians have higher numbers of positive financial behaviors (67%) as compared to UK (52%); which indicates an average level of financial behavior.

Financial attitudes

Table 3. Scores for financial attitude

Questions	Score Malaysia %	Score UK %
I find it more satisfying to spend money than to save it for the long term		
I tend to live for today and let tomorrow take care of itself		
Money is there to be spent		
Percentage of respondents with average score over 3	53%	49%

The results on the financial attitudes as shown in Table 3 demonstrate that respondents in UK find an equal satisfaction in spending and saving. From the second statement, the responses show that in UK respondents tend not to live for the day. Individual's attitude towards money is measured from the third attitude statement. The scores show that Malaysia and UK have a much more positive attitude towards the long term thus reflect a positive relation to financial well being.

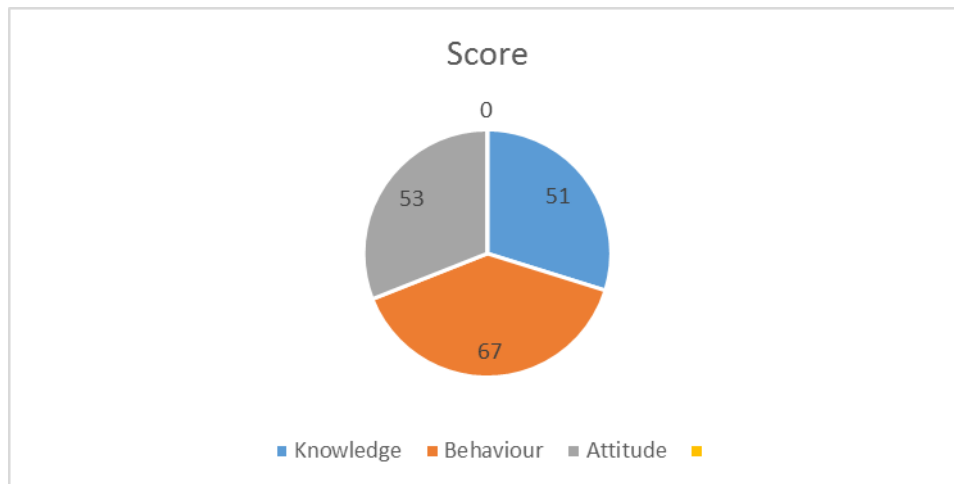


Figure 1. Score for Malaysia

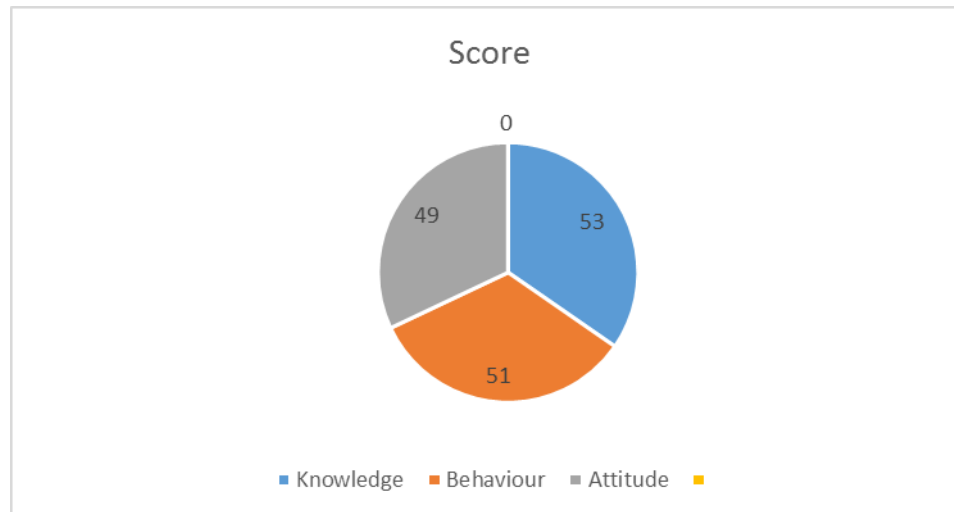


Figure 2. *Score for United Kingdom*

In general, from the aspect of behavior, financial level for Malaysian respondents was higher as compared to knowledge and attitude, in contrast to financial level for UK, which was higher in terms of knowledge.

Socio-demographics perspective

Another important issue is on the level of FL across particular socio-economic groups. From the literatures discussed earlier, the most important issues that could influence FL are gender differences, age and income. However, for these two countries, the results show that age factor is not that prominent as compared to some other countries; in which middle age is associated with higher FL, different from the oldest and youngest respondents who are more likely to have lesser scores. However, the results confirm and support previous studies who find evidence that higher income person are more likely to gain high scores than that of lower income groups.

Gender differences

From the survey, it is shown that women display a lesser financial knowledge than men in these two countries, particularly, young woman, widows, less educated and low income women who lacked mostly on the financial knowledge.

In conclusion, on the level of FL in Malaysia and UK, the overall score of more or less 58% among all respondents indicate that the respondents are still not much aware of their finance related matters. In addition, the results suggest that level of FL varies significantly among respondents based on various demographic and socio-economic factors particularly gender, education, income, nature of employment and place of work, with age not having much effect. In regards to gender effect, the findings support the study by Chen and Volpe (2002) who reports that gender is a significant variable impacting the level of FL. Their findings suggest that women, in comparison to men, are more risk-averse when making financial decisions, and are consequently less financially literate. However the detail analysis as to the difference in the risk tolerance and confidence level between men and women as highlighted by Chen and Volpe could not be ascertained from this study and could be one of possible avenues for further research.

Financial literacy and investment decisions

In reviewing existing literatures on the relationship between FL and investment decision, a number of salient points emerge.

- Factors that have been identified to influence individual investor behavior include the followings:
 - Demographic : Investor's gender, age, marital status, education, income and occupation.
 - Stock fundamentals : Beta, past return, risk, EPS, firm size, share price, share turnover and book to equity ratio.
 - Lifestyle characteristics : Personal ability, confidence level and dependency level of investors.
 - Psychological influences : Desires, goals, prejudices, biases and emotions that guide the investor's decision.
 - Personal values : Socially and religiously expressive characteristics.
 - Professional service/advisor : Advice or recommendation from the broker, family members, friends and stockholder.
 - Personal financial needs : Need for diversification. Easy access to financing or availability of the funds whenever needed, risk threshold or risk tolerance associate with the need to minimize the risk and loss and maximize return.
 - Information : Information about government policy, economic information that could reflect the economic fundamentals of the country such as fluctuations in the stock market and price, inflation and interest rates.
 - Other factors : Social responsibility and others.
- Most of the works were done in US, Australia, UK and other developed nations. Limited research studies have been carried out in developing countries; few studies on India and UAE.
- Target population in most of the studies was college students rather than adult population.
- Very few studies used all the areas of personal finance in order to measure the level of financial literacy namely the financial knowledge, financial attitude and financial behaviors.

Figure 3 provides the research focus areas on the link between financial literacy and investment decisions. The figure clearly shows that the focus is on five main issues namely the impact of financial literacy (the impact on financial behavior, financial decision making including retirement planning, investment), the demographic factors and financial literacy (gender, ethnicity, education, age), evaluation of program effectiveness and the instrument tools for financial literacy.

Research gaps and potential future research opportunities

The gaps provide potential future research opportunities in the following areas.

a. Types of investments

Most of the studies had focused on retirement and few on stock market investment. Studies should consider different types of investment instruments that are unique to Malaysian financial system like the conventional and Islamic financial instruments and also on other types of instruments such as unit trusts, commodities such as gold and silver and properties.

b. Types of risk tolerance and confidence level

The concepts of risk and return are crucial in investment decisions. Investors are human beings with unique features and in various situations make decisions based on whether they are risk averse or risk takers and also on the confidence level. Limited scope of previous studies that considered this risk tolerance of investors provides great potential for future research endeavors, specifically with regards to the gender effect of the risk tolerance and confidence level.

c. Measurement of financial literacy

Currently there is no standardized instrument to measure FL. The measurements used in previous studies were mostly adopted from studies of other countries. With differences in socio-demographic and economic among countries, the use of such measurements might be biased and do not reflect the true level of literacy. In addition, the focus of the measurements on numerical and information literacy disregarded other aspects of FL which includes monetary (the competencies necessary for management of cash and cashless money), price (the competencies necessary for understanding the price mechanism and inflation), legal and budget literacy (involves the ability to make a budget, to specify the financial objectives and to decide on the allocation of the financial sources) and includes the ability to manage a variety of life situations from a financial point of view. It also includes administration of financial assets and administration of financial liabilities. The measurement should consider financial instruments that are unique to Malaysian financial system like the Islamic financial instruments such as Takaful and Sukuk.

d. Sources of financial knowledge

Enhanced understanding of the sources of financial knowledge is relevant in the study of financial literacy and investment decisions. For instance, if the knowledge is acquired from parents or through interaction with others, it may be particularly beneficial to target the relevant group in providing financial education. This is important because from the findings of previous study, those participants whose parents did not have a college degree and lacked financial sophistication were less likely to know about risk diversification, an essential concept in making saving and investment decisions.

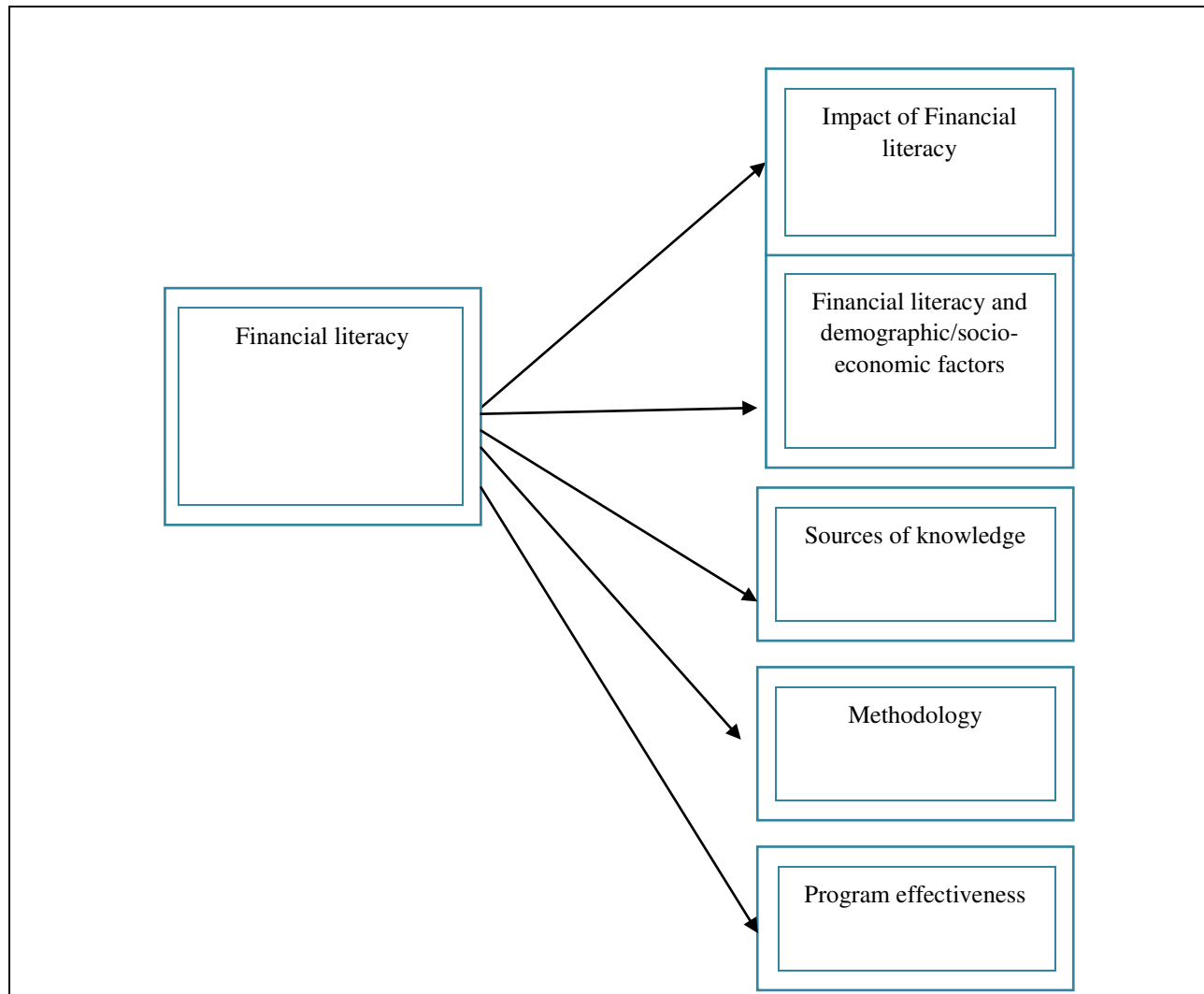


Figure 3. *Research focus areas between financial literacy and investment decisions*

Conclusion

On FL, overall it can be concluded that FL level is low and necessary measures should be taken by the government to increase awareness about financial related matters. On the review of literature that links financial literacy to investment decisions, it is concluded that generally FL relates to investment decisions and that some determinants that influence individual investors' behavior are highly influential relative to some other factors. These factors can be grouped into demographic, economic, social, and psychological in nature. The literature review uncovers some common themes for developed countries namely; the impact, demographic factors, sources of knowledge, methodology and program effectiveness. For Malaysia, the review reveals the gaps in the literature including investment types, risk tolerance, sources of knowledge, data, measurement and method. The study provides guidelines for policy makers, administrators and educators in instilling suitable components of financial literacy in their training endeavors. Future research could cover the gaps identified in this study and investigate the aspects using better methodology; for instance the triangulation method as to gain a richer data in regard to the respective issues highlighted in this study.

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