

PROFILE AND DIFFERENCES IN FINANCIAL LITERACY: EMPIRICAL EVIDENCE

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Abstract

The increasing cost of living in Malaysia has resulted in individuals and households being more mindful of their wealth management. Financial crises and world geopolitical issues have caused much volatility in returns and market volatility. These economic challenges have impacted the way Malaysians save, spend, manage risks and invest in order to preserve their livelihood. It is therefore vital to understand financial instruments and markets in order to better manage investments and wealth. This research aims to study the level of financial literacy among Malaysians across gender, income, age and ethnicity group. It applies a quantitative study method with a self-administered questionnaire to obtain relevant data. A total sample of 2000 respondents is obtained and results reveal that unfortunately, the majority of Malaysians possess only moderate level of financial literacy. In addition, there are significant differences in female, who are in the above the RM7000 income group, 30 to 39 years old and Chinese in terms of financial literacy. Findings from the study provide a better understanding of the level of Malaysians' financial literacy and implication on policy objectives to further strengthen this area through targeted sustainable financial education.

Keyword: financial literacy; gender; age; income; ethnicity

INTRODUCTION

Financial crises around the globe, debt crisis in Europe and the recent geopolitical uncertainty have resulted in huge volatility in returns and market ambiguity. Developed countries' anti-trade policies and retaliation by others prompted devastating movements in asset values especially in developing countries. Malaysia is fortunate to recover rapidly from the global financial crisis of 2007/8 and the Malaysian economy continues to grow positively throughout the years. With a recent growth rate of 5.9 percent in 2017 marks the strongest pace of development in the last three years (Department of Statistics Malaysia, 2018). Just recently, the Economic Planning Unit reported that the average income per capita in Malaysia has fallen by as much as 15% from US\$10,345 in 2013 to US\$8,821 in 2016 (Economic Planning Unit, 2016). It is understood that one of the reasons is due to the depreciation of the domestic currency vis-à-vis the US dollar. In addition, the continuous increase in the cost of living in Malaysia especially with the introduction of the services tax has created tremendous hardship for individuals as well as households in the country forcing them to be more prudent in their expenses. Malaysians generally lack a clear understanding of financial risk and return, resulting in their inability to make rational financial decisions.

Some Malaysians are regrettably still susceptible to not only financial fraud, but also falling victims to financial scams. There have been many reports of Malaysians falling for get-rich-quick schemes that promise high returns within a very short period of time. All these challenges have resulted in Malaysians being more desperate and prone to making imprudent financial decisions, with some even resorting to seeking quick and easy, but not necessary ethical ways, to grow their wealth. The Malaysian police have recorded up to 1,883 cases of investment scams between January 2015 and April 2017, resulting in losses of up to RM89 million (The Malay Mail online, May 2017). It has been found that this is due to many Malaysians lacking the financial know-how to distinguish between a scam and a legal investment, as well as their apprehension on wealth accumulation. As such, there have been

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calls to make financial literacy education available to all Malaysians to prevent the exacerbation of these situations.

In addition, less than a quarter of Malaysians possess any form of investment. The survey showed that the majority of Malaysians tend to have instant gratification behaviour instead of planning for the future. This is further supported by only 40% of Malaysians consider themselves financially ready for retirement, despite the steadily increasing life expectancy of Malaysians (Bank Negara Malaysia, 2015). What little savings they have were depleted by a minor emergency such as the need to repair a vehicle or replace an existing household appliance.

All these underscore the crucial need for widespread financial education to all in order to encourage individuals and households to be financially savvy in managing their finances, plan for the future and manage risks associated with financial investments. Individuals ought to be able to engage themselves in comprehensive and thorough financial planning either via self-management or by appointing a qualified financial planning practitioner. Personal financial planning is found to be very much still in the infant stage in Malaysia (Gan, 2008; Mokhtar, Dass, Sabri & Ho, 2018) and Malaysians are generally found not taking ownership of their financial affairs (Citi, 2008). Despite some being aware of the importance of personal financial planning, many remain lacking in a thorough understanding of the significance of personal financial planning and of the numerous benefits that may be derived from such planning (Citi, 2008).

According to the data by the Consumer Research and Resource Centre (2012), young adults are less equipped with knowledge and awareness especially in terms of their personal financial responsibility. It can be seen that 15% of the young employees had no savings and 37% of them lived beyond their means. Besides that, the annual report from the Legal Affairs Division (BHEUU) revealed that until September 2013, those aged 25 to 44 years recorded the highest number of bankruptcies due to the hire purchase and personal loans, which represented 54.4% from the total of age groups.

Financial management become increasingly concerned with the behaviour of today's young adult consumers. It has been argued that at this stage, individuals age 25 years and above have begun to enter the phase where they need to make financial decisions that are more complex (Henry, Weber, & Yarbrough, 2001; Parotta & Johnson, 1998), as they live in a consumer culture that is adapted to the easy availability of credit and debt (Roberts & Jones, 2001).

Moreover, Atkinson, McKay, Collard and Kempson (2007) using the Financial Capability Survey, found that the least financially capable individuals were younger, with children who were struggling on low incomes and were disorganized. The next least capable groups were low-income, younger, single people, using fewer products, the early middle-aged, who used few products and did some planning. This study, therefore, aims to investigate the financial literacy level of Malaysians and analyze if there are differences in the level of financial literacy from the various gender, income, ethnicity and age groups. This would assist in targeting the groups as well as the desired level of financial education.

LITERATURE REVIEW

Financial literacy is defined as the ability to effectively access and manage one's finances in order to achieve life goals and financial well-being (American Institute of Certified Public Accountants, 2003). Viera (2012) defined it as the ability to understand financial matters consisting of skills and knowledge which enable individuals to make informed and effective financial decisions. The terms financial literacy, financial knowledge and financial education are often used interchangeably by academic literature (Huston, 2010). Many previous studies have shown that good financial literacy leads to improved financial behaviour (Lusardi & Mitchell, 2014). Financial literacy enables individuals to handle financial

challenges appropriately, assists them in making informed decisions about their money and helps to minimize their chances of being misled on financial matters (Raven, 2005; Beal & Delpachitra, 2003).

Previous empirical evidence stresses that financial literacy has a positive effect on financial behaviour and financial status in a number of behavioural domains. When an individual is financially-literate, he would be good in budgeting, money management (Perry & Morris, 2005); managing debts and mortgages (Lusardi & Tufano, 2009); involvement in financial markets (Yoong, 2011); retirement planning (Lusardi & Mitchell, 2008); and better wealth accumulation (Stango and Zinman, 2009). Thus, the higher the level of financial literacy, the larger the benefit to people because it helps them make better financial decisions and provides them more control over their money (Viera, 2012). In the global environment, only 33% of adults are financially literate which means, 67% of the global adults or 3.5 billion people especially in developing economies, lacks basic understanding of financial concepts (Hasler & Lusardi, 2017). This is indeed astonishing and a lot has to be carried out in order to improve and manage the gap.

Gender

A number of researches have investigated the relation between financial literacy and gender (Almenberg, & Dreber, 2015; Fonseca, Mullen, Zamarro, & Zissimopoulos, 2012). Gender is also a demographic character that has been found to have a significant relation with the level of financial literacy. Globally, 35% of men are financially literate compared with 30% of women (Hasler & Lusardi, 2017). Gender and financial literacy study across the world by OECD indicated that for large international countries such as Canada, Germany, India, Jamaica, Norway, Japan and Italy, evidence shows that women have a lower level of financial literacy compared to men (Hasler & Lusardi, 2017). Similarly, Grohmann, (2016) reported that in most of the countries being studied, men outperform women in financial literacy. The study measures knowledge of interest, inflation, and diversification and found that in 135 of the 144 countries, more men are considered financially literate relative to women. Moreover, a gender gap is consistently found even in advanced economic nations like G7 countries (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States) (Hasler & Lusardi, 2017). The difference in personal characteristics between men and women is a factor affecting the way they handle financial matters. Empirical studies also proved that women act with lower self-confidence compared to men (Bucher-Koenen, 2011; Lusardi & Mitchell, 2014) or are less likely to take financial risks compared to men (Charness & Gneezy, 2012).

On the other hand, studies on Russia and East Germany's financial knowledge found that literacy is very low for both men and women, and gender differences are not significant (Bucher-Koenen & Lusardi, 2011, Klapper & Panos, 2011). This is because Bucher-Koenen and Lusardi, (2011) found that those who are the main decision makers and stay with a partner depends on their partner to makes decisions. Whereas, Klapper and Panos (2011) stated respondents that are no planners and with public pension funds contributed towards the insignificant differences.

A Malaysian study on financial literacy among working women in the public sector indicated that the respondents reported a moderate level of financial literacy (Sabri & Tze Juen, 2014). Shaari, Hasan, Mohamed, and Sabri, (2013), and Ibrahim, Harun & Isa, (2009) found that male students have higher levels of financial literacy than female students in Malaysia. Another study of Malaysian financial literacy among 520 respondents in the Klang Valley found that 51.54% of Malaysians have basic financial knowledge and only 37% of them are literate in advance financial literacy. A recent study by Kimiyaghalam & Yap (2017) reported that there is no significant difference between Malaysian female and male in their level of both basic and advance level of financial literacy.

The differences found between genders may be a result of the differing mix of socialization of individuals. Edwards, Allen and Hayhoe (2007) suggested that parents have different expectations with

sons and daughters. They tend to have higher expectation on related job and savings for their sons, henceforth they are more likely to discuss more on financial issues with sons than daughters. On the other hand, observation carried out reported that the daughters are being educated to be financially dependent, since they receive more financial support from their parents than sons at a university age.

Age

Researchers have investigated the relation between age and financial responsibility, and found significant results where international researchers particularly in the United States and United Kingdom have reached similar conclusion that young people demonstrates poorer financial literacy (Hoare, 2003; Mandell, 2008). Poor financial literacy definitely contributed to negative consequences for the younger generation. They are easily subject to various financial problems such as bankruptcy, high indebtedness and financial fraud. The evaluation of financial literacy level therefore must be analyzed in order to strategize transformation steps and produce financially knowledgeable individuals. Financial education is therefore vital to protect young adults from the costly consequences of financial illiteracy (Altintas, 2011).

Looking at the recent trend, many new and modified financial products are being offered by banks and the younger people have wider financial decisions to make as they have access to more money and credit (Pinto, Parente & Mansfield, 2005). Yet, it does not necessarily mean that they possess sufficient financial literacy or are ready to understand the complexity of the financial world which may be full of threats (KeyBank and Harris Interactive, 2006).

There are also numerous studies on financial literacy among college students and working adults in Malaysia which can be categorized as the younger generation aged 18-30 years old. Majority of these studies found that they have poor financial literacy (Loke, 2015; Boon, Yee, and Ting, 2011). Descriptive results from Van Rooij, Lusardi, and Alessie (2011) indicated that the group of respondents with highest basic financial literacy peaks in the 41-50 age category and is lowest among those ages 71 and older. On the same note, Hogarth and Hilgert (2002) found that respondents who are more financially knowledgeable tend to be middle aged. Their study showed that financial literacy score increases from age 18-54 and gradually decreases as the age increases. This seems to confirm that financial literacy follows an inverted U-shape when it comes to age factor. It implies that financial knowledge, skills and awareness are highest among middle aged individuals relative to younger and older persons (Atkinson & Messy, 2012).

Income

A survey conducted by Atkinson, McKay, Collard, and Kempson (2007) among 5,000 UK adults from 2006 to 2007 led to the development of a financial literacy index. The study found that, globally, lower income respondents fell in the middle or bottom level of financial literacy. Likewise, Hogarth and Hilgert, (2002) reported that higher income individuals tend to poses wider financial knowledge with higher literacy level.

Atkinson and Messy (2012) found that there is a positive relation between income and financial literacy. Lower income level is associated with lower financial literacy level. Similarly, students from high-income families also have higher financial literacy level compared to those from low-income families (Johnson & Sherraden, 2007). Interestingly, Hastings and Mitchell (2011) provided experimental evidence to show that financial literacy is related to wealth. Lower income individuals are more likely to contribute to financial illiteracy as a result of dropping out of school earlier (Calamato, 2010). However, a study by Bahovec, Barbić and Palić (2015) found no significant difference in financial literacy level and household income of individuals. Due to the sampling technique was conducted using a snowball sample, a limited number of respondents were involved in Bahovec, Barbić and Palić (2015) study. Hence, the

results could not show a significant difference between financial literacy and income. In summary, studies relating to income and financial literacy are rather scarce and findings from most of the studies showed that higher income increases financial literacy.

Ethnicity

Previous studies find that race or ethnic background influence the individual financial literacy, financial management and financial capability as each race has different values and way of life (Sabri, Cook & Gudmunson, 2012; Chen & Volpe, 2002; Clercq & Venter, 2009). Study conducted by Jeyaram and Musthapa (2015) found that Chinese respondents have significantly higher financial literacy compared to other races. Another study conducted by Loke (2017) revealed that ethnic differences in the levels of financial management behaviour are only found between the Malays and the Chinese. Compared to the Malays, the Chinese have reduce probability of having poor financial management behaviour by 8.5% but increases the probability of having good financial management behaviour by 6.8%. The better financial management behaviour of the Chinese compared to the Malays corroborates with existing local studies that showed Chinese are more financially literate, have less debt repayment problems compared to other ethnic groups (Loke, 2015; Jariah, Husna, Tengku Aizan & Rahimah, 2012). Kimiyaghalam and Yap (2017) in their study on the level of financial literacy in Malaysia found that amongst the three ethnic groups, Chinese have more level of financial literacy even though this difference is not that much with Malay respondents. The study also found that Indians have poor level of financial literacy in both the basic and advance levels.

METHODOLOGY

This study engages the approach of quantitative analysis where purposive sampling technique is conducted to select the sample throughout Malaysia. A purposive sampling technique was conducted because of the non-parametric technique analysis used for comparison among four groups. Self-administrative survey questionnaire was distributed to a sample that covers a wide section of the population. The sample was separated into four categories: i) public sector employees; ii) private sector employees; iii) FELDA/rural area residents; iv) youth in institutions of higher learning. These four categories was categorized into eight domain through factor analysis and are noted to have the representation of the population for the results to be generalized according to respective groups. According to the sampling size calculation by Krejcie & Morgan (1970), a population which is equal to or greater than 1,000,000, the required sample size is about 1,500 with confidence interval of 95% and margin of error of 2.5%. This study collected relevant information from a total of 2,000 respondents in order to compensate for incomplete and unusable responses.

All questions in the questionnaire are developed in a close-ended form by providing possible choices of answers. This method could prevent bias and allow the data to be analyzed in the most appropriate way. Data was collected from April to August 2017. A pilot study was conducted among forty respondents to check the suitability of research instruments in a preliminary small-scale study. This assisted the researchers to decide on the most appropriate approach to conduct such a large-scale research project and to ensure that the appropriateness of the proposed methods and instruments. Some instruments are revised and the instructions clarified after the pilot study due to respondents' problems in understanding them. This enhanced the reliability and accuracy of the questionnaire.

Reliability tests are conducted and Cronbach alpha coefficient of the instruments are all above 0.7. In addition, Statistical Package for Social Science version 22.0 (SPSS) is applied to analyze the data. Demographic and socio economic information of the respondents in terms of age, gender,

ethnicity, family size, financial status and income adequacy are requested. As for the measurement of financial literacy, 32 true/false questions are presented. One point will be given for a correct response by the respondents while zero points for those with an incorrect response. This means that the higher the score obtained by the respondents, the higher the level of financial literacy. This method was developed by Sabri, MacDonald, Hira and Jariah (2010) based on the Malaysian context. Financial literacy measurement in this study is divided into 3 categories: low score (0 - 10), moderate score (11 - 21) and high score (22 - 32) depending on the number of correct answers provided. In addition, this study applies the Chi-square tests to determine the significant differences between the categorical variables, namely gender, income, ethnicity and age in terms of financial literacy.

RESULTS AND DISCUSSION

The information on social-demographics is demonstrated in Table 1. The sample consists of 55.3 percent married individuals and 44.7 percent single. In terms of gender, a larger percentage (54%) of respondents is female. This is consistent with the national overall population averages. The study is also represented in terms of ethnicity where 64% of the sample is Malay, 27.9% Chinese, 5.9% Indians and 2.2% of other ethnicities. The majority of the respondents (57%) are from the B40 category and have a monthly income of less than RM3,000. The highest percentage of respondents are in the age group of between 20 to 29 years old (31.7%), followed by 30 to 39 years (24.7.0%) and more than 50 years (18.4%).

Table 1: Social-Demographics Characteristics

	N (%)
Gender	
Female	1080 (54.0)
Male	920 (46.0)
Marital Status	
Married	1106 (55.3)
Single	894 (44.7)
Ethnicity	
Malay	1280 (64.0)
Chinese	558 (27.9)
Indian	118 (5.9)
Others	44 (2.2)
Income (RM)	
< 3000	1140 (57.0)
3000 – 4999	510 (25.5)
5000 – 6999	188 (9.4)

7000 – 8999	66 (3.3)
> 9000	96 (4.8)
Age (years old)	
< 20	198 (9.9)
20 – 29	634 (31.7)
30 – 39	494 (24.7)
40 – 49	306 (15.3)
> 50	368 (18.4)
Household Size (person)	
< 4	900 (45.0)
5 – 6	696 (34.8)
> 7	404 (20.2)
Asset to Debt Ratio	
Asset value < Debt	1050 (52.5)
Asset value = Debt	440 (22.0)
Asset value > Debt	510 (25.5)
Income Adequacy	
Enough & able to save money	338 (16.9)
Enough for most of things	472 (23.6)
Enough for basic needs	944 (47.2)
Not sufficient	246 (12.3)

In addition, 45% of the respondents have a household size of less than four, 34.8% are those with household size of between five to six people and only 20.2% are in a household comprising more than seven. This is very much reflective of the national household size distribution, which stands at 4.13 persons. Slightly more than half of the respondents (52.5%) have a very low asset to debt ratio. There is definitely a need for more information and guidance in financial readiness for this group of relatively younger respondents. Almost half of the respondents (47.2%) have income that is only sufficient for basic needs. With depressed real wage growth, the data provides an indication that the respondents are just able to meet day to day expenses with only 16.9% having enough to live comfortably with some savings. A worrying total of 12.3% of the respondents indicate that they do not have sufficient income for living expenses.

Parallel with this study's objective in identifying the level of financial literacy of the respondents, 32 questions were included in the questionnaire to evaluate the respondents' financial knowledge. Information was captured on the eight domains of financial literacy including understanding the roles of a

financial institution, cash flow management, debt management, saving and investment, retirement planning, risk management, Islamic products and estate planning.

Figure 1 shows the summary of financial literacy scores by three categories: low, moderate and high. The overall results indicated that 1198 (59.9%) of the respondents have a moderate level of financial literacy. This finding is parallel to the pilot survey conducted by OECD in 2012 where they stated that Malaysian's financial literacy level is at a moderate level. In addition, OECD reported that among several countries such as Peru, Malaysia, Norway and Germany, Malaysia recorded a moderate financial literacy level with a score of 51%. In addition, a study by Sabri and Zakaria (2015) among young employees divulged similar result. This shows financial education for the public to improve knowledge and create awareness of the importance of setting financial goals and taking necessary action to achieve their financial goals are in need for better financial planning and understanding. Moreover, another study by Lusardi and Mitchel (2007) also found that households with low financial literacy are unlikely to plan for their retirement. Hence, financial literacy affects households' financial decision-making.

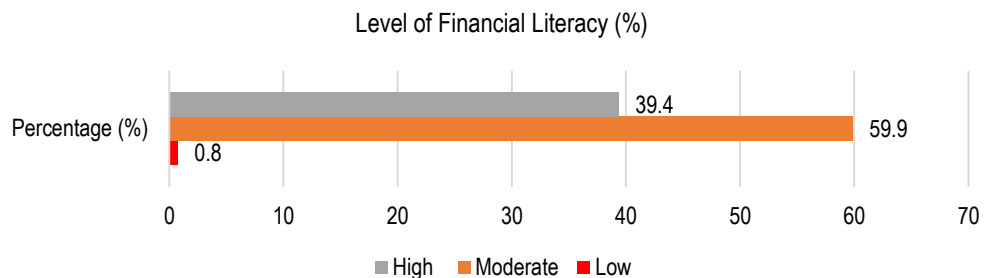


Figure 1: Overall Financial Literacy Score Level

The findings on percentage and differences between groups on the understanding of financial institution in terms of gender, income, ethnicity and age are shown in Table 2. Findings reveal that there are significant differences between the different groups of income, ethnicity and age on respondents' understanding of the roles of Securities Commission Malaysia. Higher income group of more than RM7,000 (91%) and the majority of Chinese (86%) and Malay (84%) correctly answered the question. This shows that Malay and Chinese earning more than RM7,000 are familiar with the Securities Commission Malaysia roles relative to the others. On the Credit Counseling and Debt Management Agency (CCDM) question, there are significant differences between the different income and age groups' financial literacy. Those who are in the lower income group and the younger generation do not seem to be able to fully comprehend the responsibilities of CCDM. They misunderstood that it is an organization that provide loans to those who need them.

In addition, higher income group and those between the ages of 30 to 39 have clearer understanding of the roles of the central bank. It is also interesting to note that Chinese and Indians are more knowledgeable about financial institutions than others. The findings reveal that more can be done to increase the level of financial literacy through proper channel of financial education targeting different groups.

Table 2: Results for Differences in Financial Literacy of Financial Institutions

No	Item	Gender (Answer Correctly)	Income (Answer Correctly)	Ethnic (Answer Correctly)	Age (Answer Correctly)
1	Bursa Malaysia is a stock exchange operator and offers a complete range of services covering trading, clearing, depository and settlement.	M=75.7%	< 3000 = 77.9%	M = 77.7%	≤ 20 = 74.1%
		F=78.9%	3999 – 6999 = 75.4%	C = 77.9%	20 – 29 = 80.3%
			≥7000 = 82.2%	I = 73.5%	30 – 39 = 76.5%
				O = 74.0%	40 – 49 = 77.7%
				≥ 50 = 75.2%	
	Chi-square test significance	p=.09	p = .14	p = .67	p = .25
2	Securities Commission Malaysia ensure proper conduct of market institutions and licensed individuals	M=82.3%	< 3000 = 83.3%	M = 84.3%	≤ 20 = 77.6%
		F=85.4%	3999 – 6999 = 83.5%	C = 85.6%	20 – 29 = 84.2%
			≥7000 = 90.8%	I = 75.2%	30 – 39 = 85.8%
				O = 78.0%	40 – 49 = 85.6%
				≥ 50 = 83.4%	
	Chi-square test significance	p = .06	p = .05**	p = .03**	p = .10
3	Credit Counseling and Debt Management Agency (AKPK) offers financial loans	M = 57.8%	< 3000 = 48.5%	M = 57.5%	≤ 20 = 33.8%
		F = 54.0%	3999 – 6999 = 62.2%	C = 52.1%	20 – 29 = 52.9%
			≥7000 = 79.1%	I = 57.3%	30 – 39 = 65.8%
				O = 48.0%	40 – 49 = 64.3%
				≥ 50 = 52.0%	
	Chi-square test significance	p = .09	p = .00***	p = .11	p = .00***
4	Bank Negara Malaysia's role is only to print currency	M = 73.8%	< 3000 = 71.0%	M = 72.3%	≤ 20 = 73.6%
		F = 76.2%	3999 – 6999 = 78.2%	C = 81.3%	20 – 29 = 75.8%
			≥7000 = 90.8%	I = 81.2%	30 – 39 = 80.2%
				O = 64.0%	40 – 49 = 77.4%
				≥ 50 = 65.9%	
	Chi-square test significance	p = .23	p = .00***	p = .00***	p = .00***

Note: ** and *** denotes significance of 5% and 1% respectively.

For the second domain on respondents' financial literacy in terms of cash flow management in Table 3 shows that only 18.6% of male and 14.4% of female agree that expenses cannot be higher than income. It is vital to note that the percentage of respondents with the correct answer is very low for this question. This is a major flaw in financial control and the respondents are not particular about balancing their income and expenditure, especially for females. Some drastic action must be taken to disseminate more information and education in this area.

Table 3: Results for Differences in Financial Literacy on Cash Flow Management

No	Item	Gender (Answer Correctly)	Income (Answer Correctly)	Ethnic (Answer Correctly)	Age (Answer Correctly)
1	Sometimes, expenses can be higher than income	M = 18.6%	< 3000 = 14.5%	M = 15.7%	≤ 20 = 12.9%
		F = 14.4%	3999 – 6999 = 17.7%	C = 17.8%	20-29 = 14.5%
			≥7000 = 22.7%	I = 13.7%	30 – 39 = 18.8%
				O = 22.0%	40 – 49 = 18.4%
				≥ 50 = 16.1%	
	Chi-square test significance	p = .01***	p = .02**	p = .39	p = .17
2	Shopping list help us to control our expenses	M = 90.8%	< 3000 = 93.1%	M = 93.9%	≤ 20 = 92.0%
		F = 95.7%	3999 – 6999 = 94.0%	C = 92.3%	20-29 = 92.9%
			≥7000 = 93.9%	I = 94.9%	30 – 39 = 95.5%
				O = 92.0%	40 – 49 = 94.1%
				≥ 50 = 91.8%	
	Chi-square test significance	p = .00***	p = .74	p = .53	p = .18
3	One needs to save before spending	M = 89.4%	< 3000 = 92.1%	M = 92.6%	≤ 20 = 90.0%
		F = 95.5%	3999 – 6999 = 93.0%	C = 92.3%	20-29 = 93.8%
			≥7000 = 95.1%	I = 96.6%	30 – 39 = 94.1%
				O = 88.0%	40 – 49 = 92.8%
				≥ 50 = 89.9%	
	Chi-square test significance	p = .00***	p = .37	p = .23	p = .06

Note: ** and *** denotes significance of 5% and 1% respectively.

It is not surprising that those with a monthly income of more than RM7000 (23%) agreed that expenses cannot be higher than income. This group is more cautious in their spending than others. Uncontrolled expenditure might lead to overspending and debt which can lead to bankruptcy in the longer term. Furthermore, 96% of female respondents came to an agreement that a shopping list does help to control their expenses and they need to save before spending. This illustrates that respondents understand that planning is significant prior to spending on expenses. In addition, a majority of female (96%) understands that one needs to save before spending relative to males. A good financial practice would contribute to a better financial well-being.

In terms of credit/loan/debt, Table 4 divulges the percentage and relationship of the variables. There is a limit as to how much one can spend with their credit card is understood by those who are in the higher income group, both Chinese and Indians as well as the majority of age groups with more than 80% of them getting it correct. Similar to that, income, ethnic and age also contribute significantly towards appropriate answer on repayment period.

Table 4: Results for Differences in Financial Literacy on Credit/Loan/Debt

No	Item	Gender (Answer Correctly)	Income (Answer Correctly)	Ethnic (Answer Correctly)	Age (Answer Correctly)
1	Credit card holder can spend without limit	M = 80.2%	< 3000 = 77.2%	M = 76.4%	≤ 20 = 89.6%
		F = 82.4%	3999 – 6999 = 85.8% ≥ 7000 = 92.0%	C = 91.2%	20-29 = 81.4%
				I = 90.6%	30 – 39 = 85.2%
				O = 78.0%	40 – 49 = 80.7%
					≥ 50 = 72.5%
	Chi-square test significance	p = .22	p = .00***	p = .00***	p = .00***
2	The longer the repayment period the lower the cost of the overall loan	M = 76.8%	< 3000 = 74.4%	M = 74.9%	≤ 20 = 80.1%
		F = 82.4%	3999 – 6999 = 80.9% ≥ 7000 = 92.0%	C = 85.8%	20-29 = 77.9%
				I = 82.1%	30 – 39 = 81.8%
				O = 64.0%	40 – 49 = 80.0%
					≥ 50 = 70.8%
	Chi-square test significance	p = .18	p = .00***	p = .00***	p = .00***
3	Debts cannot be inherited	M = 41.8%	< 3000 = 40.6%	M = 40.4%	≤ 20 = 35.3%
		F = 36.2%	3999 – 6999 = 39.1% ≥ 7000 = 25.2%	C = 33.8%	20-29 = 40.1%
				I = 42.7%	30 – 39 = 37.0%
				O = 46.0%	40 – 49 = 35.7%
					≥ 50 = 43.3%

	Chi-square test significance	$p = .01^*$	$p = .00^{***}$	$p = .03^{**}$	$p = .17$
4	Central Credit Reference Information System (CCRIS) is a credit bureau that collects, process, store and create credit information	M = 82.1%	< 3000 = 79.4%	M = 80.7%	$\leq 20 = 74.6\%$
		F = 80.6%	3999 – 6999 = 83.3%	C = 83.3%	20 – 29 = 83.1%
			$\geq 7000 = 85.9\%$	I = 80.3%	30 – 39 = 84.0%
				O = 76.0%	40 – 49 = 81.3%
					$\geq 50 = 78.2\%$
	Chi-square test significance	$p = .41$	$p = .03^{**}$	$p = .43$	$p = .02^{**}$

Note: ** and *** denotes significance of 5% and 1% respectively.

Respondents with more than RM7000 monthly income (92%), Chinese (86%), Indians (82%) and most age groups except those between ages 20-29 and above 50 are a little less clear about this issue. Moreover, 42 percent of male, 41 percent respondents earning less than RM3000 and 46 percent other ethnicity understand that debts cannot be inherited. Income and age differences are disclosed as significant in correctly understanding the function of Central Credit Reference Information System (CCRIS). It is also interesting to note that the majority of higher income respondents and respondents' age between 20 to 49 years old have better financial understanding of Central Credit Reference Information System. In summary, those who have higher income and those between the ages of 30 and 39 have higher level of financial literacy in terms of managing their credit.

The result for financial literacy on saving and investment is detailed in Table 5. Not all types of investments are profitable and of low risk according to the majority of female (84%), 95% earning more than RM7000, 93% Chinese and the majority of age groups except those who are above 50. This revealed that all groups were mindful of their investment in the different types of saving and investment. In addition, three out of four groups have significant differences in awareness that not all investments in Malaysia are legal. Again the majority of those earning above RM7,000, Chinese and a larger majority of those less than 20 years of age are in the know of this. This may be reflected in the success of creating awareness by the education system in place.

There are 76 percent of respondents who possess income of more than RM7000 and the majority of those ages between 20 to 39 years successfully answered question regarding profits from investment to be taxed. Furthermore, 91 percent of female respondents understand that an individual needs to save a minimum of 10% for emergency purposes. In addition to the level of income, ethnicity and age also have significant impact on Malaysians' level of financial literacy. This understanding helps to contribute to the moderate level of financial literacy attained by Malaysians in financial literacy surveys.

Truth to be told, one cannot just depend on EPF savings for life after retirement. Table 6 reveals the results for Malaysians' financial literacy on retirement planning. Respondents with income more than RM7000 (81%), Chinese (63%) and those age between 30–49 years old (>60%) agreed that they cannot depend wholly on EPF after retirement. Backup plan or extra savings need to be accumulated in order to live normally after retirement. Despite monthly income of more than RM7000, 86 percent of the respondents from this income group believe that they need to continue working if their retirement savings is insufficient. The higher the income, the more commitment and expenses that needs to be taken care of resulting in having to continue working after retirement.

Table 5: Results for Differences in Financial Literacy on Saving & Investment

No	Item	Gender (Answer Correctly)	Income (Answer Correctly)	Ethnic (Answer Correctly)	Age (Answer Correctly)
1	All types of investments are profitable and low risk	M = 78.3%	< 3000 = 77.5%	M = 75.9%	≤ 20 = 90.0%
		F = 84.2%	3999 – 6999 = 84.9%	C = 93.2%	20-29 = 85.5%
			≥7000 = 95.1%	I = 87.2%	30 – 39 = 84.0%
				O = 80.0%	40 – 49 = 81.3%
					≥ 50 = 66.8%
	Chi-square test significance	p = .00***	p = .00***	p = .00***	p = .00***
2	All investments in Malaysia are legal	M = 74.0%	< 3000 = 69.6%	M = 69.3%	≤ 20 = 85.1%
		F = 74.4%	3999 – 6999 = 78.2%	C = 85.3%	20-29 = 75.4%
			≥7000 = 90.2%	I = 74.4%	30 – 39 = 77.7%
				O = 78.0%	40 – 49 = 76.7%
					≥ 50 = 59.7%
	Chi-square test significance	p = .85	p = .00***	p = .00***	p = .00***
3	Profits from investment will not be taxed	M = 67.5%	< 3000 = 66.0%	M = 67.2%	≤ 20 = 61.7%
		F = 68.5%	3999 – 6999 = 69.5%	C = 68.2%	20-29 = 71.6%
			≥7000 = 76.1%	I = 76.9%	30 – 39 = 70.6%
				O = 68.0%	40 – 49 = 68.2%
					≥ 50 = 61.9%
	Chi-square test significance	p = .65	p = .02**	p = .20	p = .00***
4	Individual needs to save a minimum of 10% for emergency purposes	M = 86.1%	< 3000 = 89.6%	M = 89.3%	≤ 20 = 88.1%
		F = 90.8%	3999 – 6999 = 88.4%	C = 87.4%	20-29 = 88.0%
			≥7000 = 83.4%	I = 88.9%	30 – 39 = 88.3%
				O = 86.0%	40 – 49 = 87.5%
					≥ 50 = 91.6%
	Chi-square test significance	p = .00***	p = .07	p = .65	p = .43

Note: ** and *** denotes significance of 5% and 1% respectively.

Aside from that, 95 percent of respondents from income group of more than RM7000, Chinese (84%) and those between the age of 30 to 49 years old (84%) understood that Private Retirement Scheme is not only for Government employees but for everyone. Similar groups of respondent were found to be financially literate whereby income, ethnicity and age significantly affect one's financial literacy in retirement planning. They fully comprehend that one cannot depend on one's children after retirement (96% respondents from income more than RM7000, 92% Indians and about 90% from the age of 30 – 49). There may be an element of culture in that certain ethnicity group may be more dependent on their children than others.

Table 6: Results for Differences in Financial Literacy on Retirement Planning

No	Item	Gender (Answer Correctly)	Income (Answer Correctly)	Ethnic (Answer Correctly)	Age (Answer Correctly)
1	One can depend on EPF savings for living after retirement	M = 56.8%	< 3000 = 49.3%	M = 52.9%	≤ 20 = 44.8%
		F = 55.7%	3999 – 6999 = 61.6%	C = 63.4%	20-29 = 55.5%
			≥ 7000 = 81.0%	I = 58.1%	30 – 39 = 65.5%
				O = 56.0%	40 – 49 = 63.9%
					≥ 50 = 44.7%
	Chi-square test significance	p = .63	p = .00***	p = .00***	p = .00***
2	If my retirement fund is insufficient, I will continue working	M = 80.9%	< 3000 = 82.6%	M = 80.3%	≤ 20 = 75.1%
		F = 81.3%	3999 – 6999 = 77.4%	C = 83.7%	20-29 = 82.8%
			≥ 7000 = 85.9%	I = 77.8%	30 – 39 = 79.8%
				O = 82.0%	40 – 49 = 82.3%
					≥ 50 = 82.3%
	Chi-square test significance	p = .83	p = .01*	p = .28	p = .13
3	Private Retirement Scheme is only for Government employees	M = 75.9%	< 3000 = 71.5%	M = 74.9%	≤ 20 = 69.2%
		F = 78.7%	3999 – 6999 = 83.0%	C = 83.3%	20-29 = 76.3%
			≥ 7000 = 94.5%	I = 77.8%	30 – 39 = 83.8%
				O = 74.0%	40 – 49 = 83.6%
					≥ 50 = 70.0%
	Chi-square test significance	p = .14	p = .00***	p = .00***	p = .00***
4	We can depend on our children after retirement	M = 83.5%	< 3000 = 81.2%	M = 82.9%	≤ 20 = 80.1%
		F = 85.3%	3999 – 6999 = 87.1%	C = 86.9%	20-29 = 82.0%

			≥7000 = 96.3%	I = 92.3%	30 – 39 = 90.9%
				O = 78.0%	40 – 49 = 88.2%
					≥ 50 = 79.3%
	Chi-square test significance	p = .28	p = .00***	p = .01*	p = .00***

Note: ** and *** denotes significance of 5% and 1% respectively.

Regardless of the variety of advertising and marketing in buying or possessing insurance policies, insurance is not necessarily suitable for all. Those who can afford to bear the risk may not need insurance. It is interesting to note that results from Table 7 show that only 48 percent of Malays and those 50 years old and above realized that they can live without. Those groups believed that financial literacy would assist them in making the right decision whether they would require insurance or not. All groups of different gender, income, ethnic and age contribute significantly to the correct answer where all types of risks can be insured. A total of 62 percent female respondents, 80 percent from income group of more than RM7000, 82 percent Chinese and 75 percent lower than 20 years of age correctly answered the question.

Table 7: Results for Differences in Financial Literacy on Risk Management

No	Item	Gender (Answer Correctly)	Income (Answer Correctly)	Ethnic (Answer Correctly)	Age (Answer Correctly)
1	If I can afford to bear the risk, I don't have to buy insurance	M = 44.4%	< 3000 = 43.8%	M = 48.0%	≤ 20 = 29.9%
		F = 41.9%	3999 – 6999 = 43.1%	C = 32.9%	20-29 = 39.8%
			≥7000 = 37.4%	I = 38.5%	30 – 39 = 47.2%
				O = 42.0%	40 – 49 = 43.6%
					≥ 50 = 49.9%
	Chi-square test significance	p = .26	p = .30	p = .00***	p = .00***
2	All type of risk can be insured	M = 57.1%	< 3000 = 54.7%	M = 49.6%	≤ 20 = 75.1%
		F = 62.1%	3999 – 6999 = 63.6%	C = 82.0%	20-29 = 60.0%
			≥7000 = 79.8%	I = 68.4%	30 – 39 = 59.9%
				O = 52.0%	40 – 49 = 63.6%
					≥ 50 = 47.7%
	Chi-square test significance	p = .02*	p = .00***	p = .00***	p = .00***

Note: ** and *** denotes significance of 5% and 1% respectively.

As for financial literacy of Islamic products in Table 8, not everyone can buy insurance nor Takaful whenever they want. Respondent earning more than RM7000 per month (45%), Chinese and Indians (35%) as well as those between 40 to 49 years old (35%) understand that insurance or Takaful cannot be purchase according to one's wish at any time. Akin to conventional insurance, Takaful or other Islamic products have its own rules and regulations. Even though Shariah products are in compliance with Islamic teachings, it is not exclusively available for Muslims only. Those who earn more than RM7000 monthly (80%), between the age of 40 - 49 (74%) and other ethnicity (68%) are aware of that information. More exposure is required to alleviate everyone's financial literacy in Islamic product. On the bright side, respondents from all groups (female: 63%; \geq RM7000: 87%; Chinese: 82%; \leq 20 years old: 71%) understand that Shariah products are not free from risk.

Table 8: Results for Differences in Financial Literacy of Islamic Product

No	Item	Gender (Answer Correctly)	Income (Answer Correctly)	Ethnic (Answer Correctly)	Age (Answer Correctly)
1	Everyone can buy insurance / Takaful whenever they wish to do so	M = 29.3%	< 3000 = 22.9%	M = 24.7%	$\leq 20 = 18.9\%$
		F = 27.3%	3999 – 6999 = 33.0% $\geq 7000 = 45.4\%$	C = 35.0%	20-29 = 23.7%
				I = 35.0%	30 – 39 = 32.2%
				O = 28.0%	40 – 49 = 35.1%
					$\geq 50 = 30.2\%$
	Chi-square test significance	p = .33	p = .00***	p = .00***	p = .00***
2	Shariah products are only available for Muslims	M = 62.2%	< 3000 = 57.5%	M = 63.6%	$\leq 20 = 54.2\%$
		F = 61.9%	3999 – 6999 = 65.2% $\geq 7000 = 80.4\%$	C = 62.3%	20-29 = 56.9%
				I = 41.9%	30 – 39 = 71.1%
				O = 68.0%	40 – 49 = 74.4%
					$\geq 50 = 52.9\%$
	Chi-square test significance	p = .89	p = .00***	p = .00***	p = .00***
3	Shariah products generate reasonable returns similar to Conventional products	M = 67.1%	< 3000 = 67.7%	M = 67.3%	$\leq 20 = 62.7\%$
		F = 66.6%	3999 – 6999 = 64.7% $\geq 7000 = 70.6\%$	C = 66.8%	20-29 = 64.0%
				I = 64.1%	30 – 39 = 66.2%
				O = 62.0%	40 – 49 = 66.9%
					$\geq 50 = 74.9\%$
	Chi-square test significance	p = .83	p = .24	p = .79	p = .01

4	Shariah products are free from risk	M = 59.2%	< 3000 = 56.3%	M = 53.1%	≤ 20 = 70.6%
		F = 63.4%	3999 – 6999 = 64.1%	C = 82.0%	20 – 29 = 62.1%
			≥ 7000 = 86.5%	I = 60.7%	30 – 39 = 64.8%
				O = 48.0%	40 – 49 = 64.9%
					≥ 50 = 48.0%
	Chi-square test significance	p = .05*	p = .00***	p = .00***	p = .00***

Note: ** and *** denotes significance of 5% and 1% respectively.

The finding in Table 9 on estate planning indicates that income and age groups as well as ethnicity are affecting financial literacy in estate planning distribution. Interestingly, 84 percent of female and 85 percent of 30 to 39 years old are in the know about the distribution of assets through a Will. Besides that, respondents were fully aware when it comes to Wills, it cannot be modified once written. The results indicate that all groups including gender (male=40%), income (≤ RM3000=42%), ethnicity (Malay=43%) and age (≥ 50=48%) are superior in estate planning financial literacy. Additionally, those earning more than RM7000 per month (71%), Chinese (59%) and age between 40 to 49 years old (54%) correctly answered question related to writing a Will. In contempt of one who does not possess assets, a Will can still be made to be distributed later. The last question on whether a Will supersedes nominees for EPF and Insurance indicates that the respondents are still lacking in information. Only respondents who earn more than RM7000 (36%) and Chinese (29%) understand the importance of nominees. It is thus vital that more information be provided to educate the public in estate planning.

Table 9: Results for Differences in Financial Literacy on Estate Planning

No	Item	Gender (Answer Correctly)	Income (Answer Correctly)	Ethnic (Answer Correctly)	Age (Answer Correctly)
1	I can distribute all my assets through my Will	M = 79.3%	< 3000 = 82.0%	M = 82.6%	≤ 20 = 73.6%
		F = 84.0%	3999 – 6999 = 82.8%	C = 79.9%	20-29 = 82.5%
			≥ 7000 = 76.1%	I = 82.1%	30 – 39 = 85.0%
				O = 82.0%	40 – 49 = 80.3%
					≥ 50 = 82.0%
	Chi-square test significance	p = .01*	p = .31	p = .59	p = .01*
2	Wills cannot be modified once it's written	M = 40.3%	< 3000 = 42.3%	M = 43.1%	≤ 20 = 37.8%
		F = 33.8%	3999 – 6999 = 32.9%	C = 23.7%	20-29 = 37.6%
			≥ 7000 = 14.7%	I = 34.2%	30 – 39 = 32.2%

				O = 28.0%	40 – 49 = 28.5%
					≥ 50 = 48.0%
	Chi-square test significance	p = .00***	p = .00***	p = .00***	p = .00***
3	Only if I have assets, I will write a Will	M = 49.0%	< 3000 = 43.1%	M = 43.5%	≤ 20 = 44.8%
		F = 46.8%	3999 – 6999 = 50.1%	C = 58.9%	20-29 = 49.8%
			≥7000 = 70.6%	I = 41.9%	30 – 39 = 51.0%
				O = 48.0%	40 – 49 = 54.1%
					≥ 50 = 36.8%
	Chi-square test significance	p = .33	p = .00***	p = .00***	p = .00***
4	My Will can include EPF and Insurance savings nominees	M = 24.8%	< 3000 = 19.6%	M = 19.7%	≤ 20 = 28.9%
		F = 22.1%	3999 – 6999 = 26.4%	C = 29.4%	20-29 = 23.1%
			≥7000 = 35.6%	I = 28.2%	30 – 39 = 23.5%
				O = 34.0%	40 – 49 = 23.3%
					≥ 50 = 20.4%
	Chi-square test significance	p = .16	p = .00***	p = .00***	p = .27

Note: ** and *** denotes significance of 5% and 1% respectively.

CONCLUSION

This study has profiled the socio-economic and financial literacy level among Malaysians in a recent survey. The population for this study consists of 2000 Malaysians from four groups chosen through purposive sampling technique. The study found that the overall financial literacy level among Malaysians is still unsatisfactory at a moderate level and there is still room for improvement and work to be done to lift this to a higher level.

In addition, there are significant differences in female towards financial literacy compare to men. This indicates that female has more financial literacy rather than men. The findings also indicate that financial literacy is vital and that the values of financial sustainability must be disseminated so that Malaysians understand that one's income must always be able to cover expenses and one must never live beyond one's means. In line to that, income group of more than RM7000 per month significantly different with other when it comes to financial literacy. Furthermore, respondents by the age of 30 to 39 years old contributes significantly towards financial literacy. Due to the high exposure by the socio-demographic background, Chinese significantly differentiate towards financial literacy compare to other ethnicities. In all, female, more than RM7000 income group, those from 30 to 39 years old and Chinese significantly differentiate financial literacy.

This is because there is no guarantee that individuals equipped with financial literacy are capable of practicing positive financial behavior not to mention those who are not so equipped. Parallel to that,

Malaysians must be educated to control their credit card spending, save for rainy days and unexpected incidents, and have enough insurance to cover unforeseen circumstances. Malaysians should also be educated on retirement planning as well as on estate planning for their golden years and beyond. Some basic understanding on the types of financial institutions and their functions is crucial in order to know where to seek assistance when the need arises. Most importantly, a basic understanding of risks and investment is vital in order not to fall prey to unscrupulous investment schemes.

RECOMMENDATION

For consideration of future consequence, financial education should be made mandatory in continuous professional development and personal growth program in the public and private sectors. In addition, continuous financial education for the public to create awareness of the importance of setting financial goals and taking the necessary actions to achieve their financial goals must be encouraged. In addition, the Professional Development (CPD) program should continue and be further developed to enhance technical and product knowledge. Besides that, the development of financial literacy program tailored to meet the differing needs of the various segments of society is highly encouraged. The training format should be kept simple and relevant to the participants' day-to-day lives. Emphasis should be on learning by doing and linking to the benefits, and knowing how to take advantage of available financial products and services.

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REFERENCES

- Almenberg, J., & Dreber, A. (2015). Gender, stock market participation and financial literacy. *Economics Letters*, 137, 140-142.
- Altintas, K. M. (2011). The dynamics of financial literacy within the framework of personal finance: An analyses among Turkish University Students. *African Journal of Business Management*, 5(26), 10483.
- American Institute of Certified Public Accountants. (2003). *Accounting Trends & Techniques*. American Institute of Certified Public Accountants.
- Atkinson, A., McKay, S., Collard, S., & Kempson, E. (2007). Levels of financial capability in the UK. *Public Money and Management*, 27(1), 29-36.
- Atkinson, A., & Messy, F. A. (2012). *Measuring financial literacy: Results of the OECD*. OECD Publishing.
- Bank Negara Malaysia (2015). Financial Stability Report. Retrieved from https://www.bnm.gov.my/files/publication/fsp/en/2015/fs2015_book.pdf
- Bucher-Koenen, Tabea. 2011, Financial Literacy, Riester Pensions, and Other Private Old Age Provision in Germany, *MEA Discussion Paper* 250-11 1-35
- Charness, G., & Gneezy, U. (2012). Strong evidence for gender differences in risk taking. *Journal of Economic Behavior & Organization*, 83(1), 50-58.
- Bahovec, V., Barbić, D., & Palić, I. (2015). Testing the effects of financial literacy on debt behavior of financial consumers using multivariate analysis methods. *Croatian Operational Research Review*, 6(2), 361-371. <https://doi.org/10.17535/corr.2015.0028>

- Beal, D. J., & Delpachitra, S. B. (2003). Financial literacy among Australian university students. *Economic Papers: A journal of applied economics and policy*, 22(1), 65-78.
- Boon, T. H., Yee, H. S., & Ting, H. W. (2011). Financial literacy and personal financial planning in Klang Valley, Malaysia. *International Journal of Economics and Management*, 5(1), 149-168.
- Bucher-Koenen, T., & Lusardi, A. (2011). Financial literacy and retirement planning in Germany. *Journal of Pension Economics & Finance*, 10(4), 565-584.
- Calamato, M. P. (2010). *Learning financial literacy in the family*. San Jose State University.
- Chen, H., & Volpe, R.P., (2002) Gender differences in personal financial literacy among college students. *Financial Services Review*, 11(3), 289-307.
- Clercq, B.D., (2009) Do our children know anything about money? An exploratory study. *Meditari Accountancy Research*, 17(1), 1-13.
- Citi (2008) *Citibank Introduces Citi Fin-Q to Malaysians*, Citigroup.com. Retrieved from <http://www.citigroup.com/citi/news/2008/080205e.htm>
- Consumer Research and Resource Centre (2012). Report on the Survey of Financial Behaviours and Financial Habits of Young Workers. Accessed from <http://www.crrc.org.my/crrc/A-report-on-the-survey-of-financial-behaviours-and-financial-habits-of-young-workers/pdf>
- Department of Statistics Malaysia. (2018). Malaysia GDP Annual Growth Rate 2000 – 2018. Retrieved from <https://tradingeconomics.com/malaysia/gdp-growth-annual>
- Economic Planning Unit. (2016). *The Malaysian Economy in Figures*. Retrieved from <http://maddruid.com/wp/wp-content/uploads/2017/03/MEIF-2016.pdf>
- Edwards, R., Allen, M. W., & Hayhoe, C. R. (2007). Financial attitudes and family communication about students' finances: The role of sex differences. *Communication Reports*, 20(2), 90-100.
- Fonseca, R., Mullen, K. J., Zamarro, G., & Zissimopoulos, J. (2012). What explains the gender gap in financial literacy? The role of household decision making. *Journal of Consumer Affairs*, 46(1), 90-106.
- Frączek, B., & Klimontowicz, M. (2015). Financial literacy and its influence on young customers' decision factors. *Journal of Innovation Management*, 3(1), 62–84. Retrieved from <http://www.open-jim.org/article/view/69/73>
- Gan, H. (2008) Financial Planning as a Profession, *Financial 1st*, June, 22-23.
- Grohmann, A. (2016). The gender gap in financial literacy: income, education, and experience offer only partial explanations. *DIW Economic Bulletin*, 46+47(2012), 531–538.
- Hasler, A., & Lusardi, A. (2017). The Gender Gap in Financial Literacy : A Global Perspective, (July).
- Henry, R. A., Weber, J. G., & Yarbrough, D. (2001). Money management practices of college students. *College Student Journal*, 35, 244-249.
- Hoare, S. (2003). Making it all. *Financial World*, 32-37.
- Hogarth, J. M., & Hilgert, M. A. (2002). Financial Knowledge, Experience, and Learning Preferences: Preliminary Results from a New Survey on Financial Literacy. *Proceedings of the American Council on Consumer Interests 2002 Annual Conference*, 48, 1–7.
- Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44(2), 296-316.
- Ibrahim, D. I. D., Harun, R., & Isa, Z. M. (2010). A study on financial literacy of Malaysian degree students. *Cross-cultural communication*, 5(4), 51-59.
- Jariah, M., Husna, S., Tengku Aizan, T. A. H., & Rahimah, I. (2012). Financial practices and problems amongst elderly in Malaysia. *Pertanika Journal of Social Sciences and Humanities*, 20(4), 1065-1084
- Jeyaram, S., & Mustapha, M. (2015). Financial literacy and demographic factors. *Journal of Technology Management and Business*, 2(1), 1-8
- Johnson, E., & Sherraden, M. S. (2007). From financial literacy to financial capability among youth. *J. Soc. & Soc. Welfare*, 34, 119.

- KeyBank and Harris Interactive (2006). *One-Third of College Upperclassmen Admit Being Financially Unprepared as Freshmen*. News Release, August 2006. Available at: <http://www.prnewswire.com/news-releases/one-third-of-college-upperclassmenadmit-being-financially-unprepared-as-freshmen-56594967.html>
- Kimiyaqhalam, F., & Yap, S. (2017). Level of financial literacy in Malaysia level of financial literacy in Malaysia. *Journal of Wealth Management*, (June), 1065–1074.
- Klapper, L., & Panos, G. A. (2011). Financial literacy and retirement planning: the Russian case. *Journal of Pension Economics & Finance*, 10(4), 599-618.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.
- Legal Affairs Division (BHEUU), Prime Minister's Department (2013). Annual Report. Accessed from <http://www.bheuu.gov.my/index.php/en/perkhidmatan/annual-report>
- Loke, Y. J. (2017). The influence of socio-demographic and financial knowledge factors on financial management practices of Malaysians. *International Journal of Business and Society*, 18(1), 33-50.
- Loke, Y. J. (2015). Financial knowledge and behaviour of working adults in Malaysia. *Margin: The Journal of Applied Economic Research*, 9(1), 18-38.
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5-44.
- Lusardi, A., & Mitchell, O. S. (2008). Planning and financial literacy: How do women fare?. *American Economic Review*, 98(2), 413-17.
- Lusardi, A., & Mitchell, O. S. (2007). Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth. *Journal of monetary Economics*, 54(1), 205-224.
- Lusardi, A., & Tufano, P. (2009). Teach workers about the perils of debt. *Harvard Business Review*, 87(11), 22-24.
- Mandell, L. (2008). "The financial literacy of young American adults: Results of the 2008 national Jump Start coalition survey of high school seniors and college students". Retrieved: March 19, 2012 from JumpStart Coalition for Personal Financial Literacy: from [http://www.jumpstartcoalition.org/upload/2009Bookcomplete after Lew Edits.pdf](http://www.jumpstartcoalition.org/upload/2009Bookcomplete%20after%20Lew%20Edits.pdf).
- Mokhtar, N., Dass, T. M., Sabri, M. F. & Ho, C. S. F. (2018). A Preliminary Evaluation of Financial Literacy in Malaysia, *Journal of Wealth Management & Financial Planning*, 5, 3-16.
- Parrotta, J. L. & Johnson, P. (1998). The impact of financial attitudes and knowledge on financial management and satisfaction of recently married individuals. *Financial Counseling and Planning*, 9(2): 59-75.
- Perry, V. G., & Morris, M. D. (2005). Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behavior. *Journal of Consumer Affairs*, 39(2), 299-313.
- Pinto, M. B., Parente, D. H., & Mansfield, P. M. (2005). Information learned from socialization agents: Its relationship to credit card use. *Family and Consumer Sciences Research Journal*, 33(4), 357-367.
- Raven, F. (2005). Financial literacy: A basic skill for social mobility. *EDC Centre for Media & Community*. Retrieved February, 14, 2007.
- Roberts, J. A., & Jones, E. (2001). Money attitudes, credit card use, and compulsive buying among American college students. *Journal of Consumer Affairs*, 35(2), 213-240.
- Sabri, M.F., Cook, C.C. & Gudmunson, C.G. (2012). Financial well-being of Malaysian college students. *Asian Education and Development*, 1(2), 153-170.
- Sabri, M. F., MacDonald, M., Hira, T. K., & Masud, J. (2010). Childhood consumer experience and the financial literacy of college students in Malaysia. *Family and Consumer Sciences Research Journal*, 38(4), 455-467.

- Sabri, M. F., & Tze Juen, T. (2014). The influence of financial literacy, saving behaviour, and financial management on retirement confidence among women working in the Malaysian public sector. *Asian Social Science*, 10(14), 40–51.
- Sabri, M. F., & Zakaria, N. F. (2015). The Influence of Financial Literacy, Money Attitude, Financial Strain and Financial Capability on Young Employees' Financial Well-being. *Pertanika Journal of Social Sciences & Humanities*, 23(4), 827-848.
- Shaari, N. A., Hasan, N. A., Mohamed, R. K. M. H., & Sabri, M. A. J. M. (2013). Financial literacy: A study among the university students. *Interdisciplinary Journal of Contemporary Research in Business*, 5(2), 279-299.
- Stango, V., & Zinman, J. (2009). Exponential growth bias and household finance. *The Journal of Finance*, 64(6), 2807-2849.
- The Malay Mail online. (2017, May 15). *Why Malaysians still fall for investment scams*. Retrieved from <http://www.themalaymailonline.com/malaysia/article/why-malaysians-still-fall-for-investmentscams>
- Van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, 101(2), 449-472.
- Viera, E. F. S. (2012). What do we know about financial literacy? A Literature Review. *Marmara Journal of European Studies*, 20(2 OP-Marmara Journal of European Studies. 2012, Vol. 20 Issue 2, p23-38. 16p.), 23.
- Yoong, J. (2011). Financial illiteracy and stock market participation: Evidence from the RAND American Life Panel. *Financial literacy: Implications for retirement security and the financial marketplace*, 76.