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Financial Literacy and Psychological Well-Being among Malaysian Adults: The Role of Cognitive Factors and A Phenomenological Exploration

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Abstract

As the prevalence of mental health issues in Malaysia increases dramatically, implementing measures to improve Malaysians' psychological well-being is crucial. Given that financial difficulties are a leading risk factor for mental health problems and financial management capabilities are significantly associated with psychological well-being, financial literacy could be a valuable tool to improve psychological health, especially considering the poor financial literacy among Malaysians. Unfortunately, existing financial education programmes have been found to lack effectiveness in addressing poor financial literacy. Possible explanations for the ineffectiveness are, firstly, the lack of consideration of cognitive factors that affect the ability to learn and utilise the financial information imparted. Secondly, the lack of positive outcomes could be attributed to insufficient depth of Malaysian financial literacy research, preventing a complete understanding of crucial factors to be targeted. Alternatively, increasing the prospects of current financial education programs in producing positive and lasting outcomes is possible; however, it would require substantial costs. Altogether, the limitations of existing financial literacy interventions underscore the need to explore alternative approaches to improve financial literacy and psychological well-being.

Therefore, this research aims to provide solutions to current ineffective financial education. Due to the lack of consideration of cognitive factors, the first study employed a quantitative approach that explored the role of cognitive factors in affecting financial literacy and psychological well-being using a survey sample of 300 adults in Klang Valley, Malaysia. Regression analysis results revealed positive and significant associations between cognitive factors (cognitive ability, numeracy skills, metacognitive awareness) and financial literacy, and between financial literacy and psychological well-being. Additionally, financial literacy fully mediated the relationship between cognitive ability and numeracy skills, respectively, with psychological well-being, while partially mediated the relationship between metacognitive

awareness and psychological well-being. The relationship between cognitive factors and financial literacy suggests alternative approaches to improve financial literacy, i.e., independently enhancing cognitive capabilities or including cognitive skills training alongside financial information dissemination. Such approaches are promising in improving psychological well-being, as supported by the relationship between financial literacy and psychological well-being and the mediation relationship established.

The second study employed a qualitative approach that explored the lived experiences of individuals with poor financial literacy and psychological well-being by conducting interviews with 20 participants from the initial participant pool. The purpose was to obtain a detailed understanding of the poor financial literacy phenomena and identify information either overlooked or yet to be considered to guide future strategies for improving Malaysians' financial literacy and psychological well-being. Thematic analysis revealed six themes, i.e., barriers to financial literacy, perpetuating factors of poor financial literacy, financial problems faced, support and resources sought, negative psychological experiences and facilitators of financial literacy. The identified themes shed light on areas that require attention in future initiatives focused on enhancing financial literacy and psychological well-being, offering guidance to educators, policymakers, financial institutions and mental health organisations.

Collectively, both studies suggested alternative and innovative approaches for future financial literacy and mental health efforts to effectively improve financial literacy, overcome psychological problems arising from financial difficulties and improve psychological well-being.

Declaration

This thesis is an original work of my research and contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

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List of Abbreviations

AKPK	Credit Counselling and Debt Management Agency
BIT	Brief Inventory of Thriving
BNT	Berlin Numeracy Test
CA	Cognitive Ability
CRT	Cognitive Reflection Test
FL	Financial Literacy
FLQ	Financial Literacy Questionnaire
MA	Metacognitive Awareness
MAI	Metacognitive Awareness Inventory
NS	Numeracy Skills
PWB	Psychological Well-Being
QoL	Quality of Life Theory
TPB	Theory of Planned Behaviour

CHAPTER 1

INTRODUCTION

According to a 22-country survey that explored the major causes of stress in people's everyday lives, money-related problems were found to be the number one cause of stress (GfK, 2015). Furthermore, current financial management stress and expected future financial security were found to predict well-being as much as all other life domains (jobs, health and relationships) combined (Netemeyer et al., 2018). These findings portray the significant impact of financial problems on well-being and highlight the importance of having good financial health. This is particularly relevant today, where financial products and services have become increasingly sophisticated and accessible to many populations (Lusardi & Mitchell, 2014). On top of that, financial decision-making responsibilities have gradually shifted from government and employers to individuals in many countries. Altogether, these changes demand that people are competent in managing their finances, from basic saving and expenditure to investing and retirement planning. Unfortunately, the rapid developments of the financial landscape were found to be highly challenging for most, as people from around the world face a range of financial problems.

1.1 Financial Problems Around the World

With more accessibility to credit and flexible payment options, a significant increase in spending and a surge in personal and household debts have been observed, leading to financial struggles over time (Reserve Bank of Australia [RBA], 2005). For instance, almost half of the households in the United States fail to make full monthly payments for their credit cards, and each household has an average debt of over $15,000 (Trudel, 2016). In both the United States and the United Kingdom, young adults who are starting employment are faced with a

substantial amount of credit card and student loan debts (Bidwell, 2014; de Bassa Scheresberg & Lusardi, 2015; de Bassa Scheresberg et al., 2014) and tend to be involved in high costs borrowing methods (de Bassa Scheresberg, 2013). Similarly, in the Netherlands, young adults struggle when it comes to sustaining themselves (Van der Schors & Simonse, 2016), which leads them to seek out additional financial resources such as taking out loans and using credit cards. Having significant debt negatively impacts people's futures as it impedes the ability to make major life decisions, such as purchasing a home (Harding, 2016). At a global scale, problems of low savings and high debt are widespread among both developing and developed countries (Borodich et al., 2010). To support this claim, the Global Findex Database 2021, drawn from a survey of 128,000 people in 123 economies, found that 45% of adults in developing economies struggle to access extra funds within 30 days (Demirgüç-Kunt et al., 2022).

Another arising concern across the globe is the increase in the ageing population (Abdel-Ghany, 2008; United Nations [UN], 2013; 2015), with more than half of the world's oldest people concentrated in Asia (World Health Organisation [WHO], 2002). On the country level, the increase in the ageing population burdens the economy due to a rise in overall healthcare and long-term care expenses (Bloom et al., 2015; Parr et al., 2016). On an individual level, older people need to ensure they have adequate savings and investments following retirement as, in most countries, the employee's pension scheme alone was found to be insufficient for sustaining oneself in old age (Sekita, 2011). However, this may be a problem, considering most households do not have sufficient savings (Abd Samad & Mansor, 2013; Hanna et al., 2016; Inter-American Development Bank, 2016; Ng, 2011).

Apart from unmanageable debts, the lack of ability to sustain oneself, inadequate savings and unpreparedness for post-retirement life, falling prey to financial scams is another

significant problem people face. Investment-related scams have been cited to be so widespread that it has reached an epidemic level (Frankel, 2012). For example, in 2008 and 2009, there was a fall of an astounding 190 Ponzi schemes in the United States (Lewis, 2012). In 2007, one in every twenty Canadians was found to be a victim of investment scams (Canadian Securities Administrators [CSA], 2007, cited in Lokanan, 2014, p. 226). Similar observations were also made in Japan (Kadoya et al., 2020), Finland (Rantala, 2015), Hong Kong (Li et al., 2022), Indonesia (Soegiono et al., 2011) and South Africa (Lloyd-Sherlock et al., 2018).

1.2 Financial Problems in Malaysia

The array of financial problems is similar, if not worse, in Malaysia. In the last decade, Malaysia's household debt has increased at an alarming rate. As of the end of 2021, Malaysia recorded a staggering 89% household debt-to-gross domestic product (GDP) ratio (Bank Negara Malaysia, 2021), making it the second highest in Southeast Asia. To obtain more details regarding the financial situation in Malaysia, Bank Negara Malaysia conducted the Financial Capability and Inclusion Demand Side Survey in 2021. From the survey, 30% of Malaysians admitted to taking up too much debt (Bank Negara Malaysia, 2021). These respondents comprised mainly salaried workers who, due to their confidence in their earning ability, overcommitted when it came to accumulating debt. Additionally, in a study by the Asian Institute of Finance (2015), it was found that individuals in the millennial and Generation Y age groups demonstrated significant debt accumulation as a result of spending more than what they could afford. This group of youths relied on personal loans and credit cards to cover their expenses, with most (75%) having at least one source of long-term debt (debts exceeding one year). Lifestyle as such is often unsustainable, as evident in many youths having to seek financial assistance from the Credit Counselling and Debt Management Agency (AKPK) by Bank Negara Malaysia (Hayei & Khalid, 2019). Besides young adults, debt issues are often

observed in lower-income households (Hayei & Khalid, 2019). For example, more than 50% of those involved in the Malaysia Debt Management Programme by AKPK consisted of individuals with monthly incomes below MYR3,000. Low-income borrowers frequently struggle to repay their debts when they experience income loss or unexpected expenses due to their limited savings, potentially resulting in bankruptcy.

Although bankruptcy is more prominent among younger and lower-income individuals, it can also happen to individuals with poor financial planning and risk management. According to the Financial Capability and Inclusion Demand Side Survey 2021, almost half (47%) of Malaysians struggle to save even MYR1,000 as emergency funds, and one in three Malaysians are disinterested in protecting themselves through any form of insurance (Bank Negara Malaysia, 2021). In a more recent survey known as the RinggitPlus Malaysian Financial Literacy Survey 2022 that was conducted among 3,144 respondents, overspending was noted as a significant problem, with a shocking 70% of respondents either saved or were unable to save less than MYR500 per month and up to 55% of respondents reported that they spend close to or more than their income (Ringgit Plus, 2022). These practices make it difficult for many Malaysians to deal with unforeseen life circumstances. As a result, only a third (36%) of Malaysians can cover their monthly living expenses for three to six months if they lose their income source, while only 16% can sustain themselves for more than six months (Bank Negara Malaysia, 2021). In another study, a third of Malaysians (31%) were found to not pay their bills on time (Janor et al., 2016). As a consequence of overspending, lack of savings and poor risk protection, one might take on debt to sustain themselves and their families. This is evident in the statistics obtained from an AKPK survey, whereby apart from bigger reasons such as purchasing assets like houses and cars, Malaysians acquired debt to buy daily essentials (Chong et al., 2021). Without proper financial planning, indebtedness and the inability to make regular payments may lead to eventual bankruptcy. The problem of bankruptcy in Malaysia requires

attention as, according to the Malaysia Department of Insolvency (2023), a startling 34,043 bankruptcy cases were reported from 2019 to April 2023. An average of 16 individuals also declared bankruptcy every day in 2022 due to the failure to fulfil the obligation of their debt payments (New Straits Times, 2022). To make matters worse, 70% of those who declared bankruptcy had a high debt threshold of MYR100,000 to MYR499,000.

In regards to post-retirement life preparedness, 82% of respondents from the RinggitPlus Malaysian Financial Literacy Survey 2022 reckon that their Employees Provident Fund (EPF) savings will be insufficient to sustain themselves (Ringgit Plus, 2022). However, among those who deemed their EPF savings to be inadequate, 41% of respondents have yet to engage in any retirement planning, which is described as the "goal-directed thoughts and behaviours that promote good health and provide financial security, fulfilling lifestyles, and rewarding roles in retirement" (Kerry, 2018, p. 521). The lack of retirement planning is a concerning matter as Malaysia is officially considered an ageing society; currently, 7.3% of its population is comprised of older people (aged 65 and above) (Department of Statistics Malaysia, 2022), and by 2030, the number is expected to reach 14.4% (UN, 2015). This transition gives rise to problems for policymakers, individuals and households. Policymakers of a developing country like Malaysia struggle to help their citizens as the country's socioeconomic development often falls behind compared to the population ageing rate (WHO, 2002). As for individuals who are approaching retirement age, the combination of lack of personal savings, low pension payments and insufficient EPF savings, increased medical and healthcare expenses, as well as the rise of living costs in Malaysia, leads to the incapability of supporting one's post-retirement lifestyle (Yoong et al., 2012). Such struggles are evident in the fact that as of 2022, 70% of individuals depleted their EPF savings within a decade after withdrawing at age 55 (Jomo, 2017), despite Malaysians' average life expectancy of 73.4 years (Department of Statistics Malaysia, 2022). Alternatively, retired individuals could obtain

financial support from their children and relatives; however, this would increase the financial liabilities of many households.

Lastly, another worrying observation is that many Malaysians were found to fall easily into financial scams. In a study conducted to evaluate the financial literacy levels of Malaysians, the results revealed a lack of ability to distinguish between legal investment instruments and fraudulent financial schemes among Malaysians (Mokhtar, Dass, et al., 2018). One in every four study participants also exhibited the potential of getting involved in 'get-rich-fast' schemes. These findings are troubling as Malaysians have lost significant amounts of money due to various investment scams such as the crude palm oil investment scam, which scammed more than MYR100 million from over 4000 investors in Malaysia (Securities Commission Malaysia, 2008) and the gold bullion investment fraud which induced a total investment of MYR995 million from 30 investors (The Star, 2009). From 2015 to 2017, up to 1,883 cases of financial scams were recorded, which amounted to a loss of almost MYR380 million (Hayei & Khalid, 2019). More recently, in 2020, the Royal Malaysia Police received 672 reports on financial investment scams with estimated losses of more than MYR90 million (Zack, 2020).

1.3 Impact of Financial Problems on Psychological Well-Being

As illustrated above, there are significant financial problems that people around the globe deal with, and regrettably, these issues pose severe negative impacts on people's lives and well-being. The struggle to meet daily needs due to limited financial means contributes to persistent anxiousness, worry, inability to cope, helplessness, hopelessness, feelings of incompetence, restricted access to social and academic opportunities and unpredictability of the future (Brown, 2002; Brown & Moran, 1997; Desjarlais, 1995; Kahn & Pearlin, 2006; Mirowsky & Ross, 1999; Mirowsky & Ross, 2001; Reading & Reynolds, 2001; Ross & Huber,

1985). Numerous past researches have demonstrated a consistent association between financial difficulties and reduced psychological well-being; the latter is defined as the combination of positive affective states and optimal functioning on both inter- and intraindividual levels (Deci & Ryan, 2008). A study by Weinstein and Stone (2018) investigated the effect of financial insecurity on well-being through the fulfilment of three basic psychological needs, i.e., autonomy, competence and relatedness, and discovered that financially insecure circumstances compromise these psychological needs, which results in decreased well-being. In 2020, a survey known as the International Survey of Adult Financial Literacy by the Organisation for Economic Co-operation and Development/International Network on Financial Education (OECD/INFE) analysed the financial literacy scores of 125,787 respondents from 26 countries and discovered that, unfortunately, financial stress is prevalent around the world (Organisation for Economic Co-operation and Development [OECD], 2020). From the total sample, 42% admitted to facing apprehension about being able to cover their living expenses. Approximately 40% are worried about their financial circumstances, and 37% shared that they barely make ends meet. The responses obtained from the survey reflect that a substantial portion of people continue to face stress and worry regarding financial matters in their everyday lives. This observation is further supported by the average financial well-being score computed from all respondents, which is less than 50% (47.4%) out of 100%, signifying that, generally, people do not perceive their financial condition as having a favourable impact on their well-being. Precisely, those who scored below average on the financial well-being measure lack control over their finances, are more insecure about their ability to protect themselves in times of financial shocks, more likely to regard their financial situation as limiting their ability to live their lives as they prefer and fall short of their long-term financial goals. Altogether, findings from this survey highlight a critical need to improve people's ability to manage their finances

effectively, as financial stress and worries have negative repercussions on psychological well-being.

Numerous empirical studies have provided substantial evidence of financial problems as a prominent risk factor for mental health issues. For example, in their research, Kiely and colleagues (2015) demonstrated a higher risk of mental health problems among individuals facing financial hardships. They explained the occurrence through two types of common financial hardship, i.e., cash flow problems and deprivation. Cash flow problems refer to the situation in which one struggles to make bill payments due to insufficient income and requires financial assistance from family members to fulfil their financial obligation. On the other hand, deprivation refers to the financial inability to cover basic necessities such as food, therefore requiring assistance from welfare organisations. Both types of financial hardship were explained to occur due to the lack of financial resources. Findings from this study are supported by other similar studies demonstrating poorer mental health, such as symptoms of anxiety and depression among individuals who struggle to make bill payments and those facing housing problems (Howden-Chapman et al., 2011) as well as among individuals experiencing food insecurity (Butterworth et al., 2009; Khan et al., 2020; Sultana et al., 2021).

The association between financial problems and increased vulnerability to mental health issues is evident in studies worldwide. In a United Kingdom study, individuals with poor financial management and those under financial strain were at higher risk of depressive episodes (Skapinakis et al., 2006). Another research conducted in England by Meltzer and colleagues (2013) found that individuals with debts were three times more prone to having common mental disorders (CMD) than those without debts. A higher tendency of having CMD was consistently found for all six CMDs studied (i.e., generalised anxiety disorder, depression, obsessive-compulsive disorder (OCD), phobia, panic disorder and mixed anxiety and

depressive disorder) and regardless of the types of debt (i.e., mortgage, utilities, and consumer debt). Additionally, those with the highest rate of CMD comprised individuals with multiple debts. Among the six CMDs, phobia was revealed to be the most prominent mental disorder, likely aggravated by anxiety and apprehension of being unable to fulfil their timely debt payment obligations. Those with debt were also found to be four times more at risk of phobic disorders than those without debt. In the same way, a United States study by Drentea and Lavrakas (2000) found that the number of self-reported anxiety increased as the ratio of credit card debt to personal income increased. In Hong Kong, a longitudinal study of older individuals revealed that financial strain was associated with more depressive symptoms, a result recorded three years after the study was initially conducted (Chi & Chou, 2000). Similarly, financial hardship was linked with increased risks of depression in an Australian study (Butterworth et al., 2012). Precisely, financial difficulties were found to be a stronger predictor of depressive symptoms than other variables, such as income and socio-economic status. On the other hand, a Finnish study of over 4,000 individuals by Hintikka and colleagues (1998) uncovered a more distressing finding, whereby the struggle to make debt payments was predictive of suicidal ideation.

Apart from common mental disorders, numerous past studies have demonstrated an increase in the severity of mental health issues among those experiencing financial problems, highlighting an issue that requires serious attention and prompt action. Specifically, financial hardship was found to be linked with alcohol dependence (Richardson et al., 2017), drug dependence (Richardson et al., 2013), increased self-harm behaviours (Barnes et al., 2016), suicide attempt or completion, neurotic disorders and psychotic disorders (Richardson et al., 2013). In times of economic crisis, a significant rise in suicide rates has also been reported (Fountoulakis, 2020; Korhonen et al., 2016). A few models have been postulated to explain the connection between financial problems and mental health problems. Firstly, the Stress Process

Model by Pearlin and colleagues (1981) explains that apart from undermining mental resources, stressors also reduce both personal and social resources, which plays a vital role in alleviating the detrimental effect of the stressor. With personal and social resources compromised, severe stressors such as financial difficulties become more challenging to deal with, increasing vulnerability to developing psychological problems. To illustrate, a lack of ability to change or improve one's financial situation over time may diminish one's self-esteem and sense of mastery, which negatively impacts one's confidence in other life areas, leading to depression, anxiety and paranoia (Drentea & Reynolds, 2015; Elahi et al., 2018; Sowislo & Orth, 2013). On the other hand, Brown and Moran (1997) explain that financial problems may lead to feelings of humiliation and entrapment, which has negative consequences on self-evaluation, contributing to an increased risk for depression. Several other past studies postulated that suboptimal financial situations, such as low income and financial strain, represent situations where people struggle to meet their basic needs. Consequently, they are subjected to feelings of fear and uncertainty, deprived sense of agency and experience lower control; all of which harm their mental health (Pearlin, 1999; Ross & Mirowsky, 2013).

In Malaysia, the impact of financial problems on people's psychological well-being is equally concerning. According to the analysis of the Global Findex 2021 database, more than two-thirds of adults in developing economies, which includes Malaysia, reported being apprehensive about at least one of the four common financial expenses (i.e., old age living expenses, medical costs resulting from serious illness or accident, monthly bills and expenses, and education fees) (Demirgüç-Kunt et al., 2022). Additionally, almost a quarter of the adults expressed feeling worried about all four financial expenses. The results of this analysis underscore the significance of improving people's ability to conduct effective financial management, as neglecting them over time could have profound adverse effects on the psychological well-being of Malaysians. Evidently, in 2021, RinggitPlus' Malaysian Financial

Literacy Survey revealed that financial stress among Malaysians has increased by 35%. From the survey, 65% of respondents reported that the stress experienced had affected their job performance, and 41% expressed that stress from financial problems had negatively impacted their mental health (Ringgit Plus, 2021). Some studies have also documented the impact of financial hardship on different areas of an individual's life and the increased risk for mental health issues among Malaysians. For example, financial factors were revealed to be the primary reason for divorce among Malaysians (Dorall, 2021; Jay, 2019). Studies by both Thinagaran and colleagues (2017) and Marican and colleagues (2012) found high levels of financial strain among their Malaysian respondents. Apart from financial stressors, participants from these studies also reported experiencing stress from marital conflicts surrounding financial matters and trouble focusing on work due to financial issues. Similarly, in their phenomenological study, Adnan and colleagues (2021) found that individuals with debt problems and those close to bankruptcy faced various negative emotional responses, which also affected their family relationships. Findings from these studies are supported by other similar studies that discovered a higher risk of mental health problems among individuals with poor financial management and struggling to fulfil their monthly bill payments (Marican et al., 2012), those facing irresolvable financial struggles (Krishnaswamy et al., 2012) as well as among individuals who experience food insecurity (Mesbah et al., 2020).

In sum, the documentation of extensive financial difficulties among people worldwide, including Malaysians from past research and surveys, highlights the widespread struggle many experience in keeping pace with the swift changes in today's financial environment. These rapid developments include but are not limited to the narrowing of the financial access gap, the rising complexity of financial products and services, and increased individual financial decision-making responsibilities. In the face of this challenging financial landscape, the repercussions of poor financial acumen and ineffective financial management are clearly concerning,

whereby the resulting financial problems from these shortcomings have a two-fold negative effect on psychological well-being. Firstly, the financial problems act a direct stressor that independently causes psychological distress. Secondly, suboptimal financial situations and financial stress affect other important life areas, leading to added distress (Pearlin et al., 1990). Collectively, the negative impact of financial problems on psychological well-being aligns with existing well-being literature that emphasises one's financial circumstances and proficiency in managing their finances as crucial aspects of psychological health (bin Hassan et al., 2021; Netemeyer et al., 2018). As financial difficulties are recognised as the most prominent stressor among chronic stressors that people face in their lives (GfK, 2015; Kahn & Pearlin, 2006), efforts to protect and improve psychological well-being should look into the aspect of financial management to improve the quality of people's lives.

Consequently, a detailed and comprehensive discussion of the existing literature on financial literacy was conducted in the next chapter (Chapter 2). This literature review defined the concept of financial literacy, discussed the importance of financial literacy, current financial literacy levels globally and in Malaysia, interventions implemented thus far to improve financial literacy and finally, the limitations of current financial education in improving financial literacy, which helped located the idea for this research. The conceptual framework that guided this research is described in Chapter 3, along with the overall research methodology. A correlational study (Chapter 4) and a phenomenological study (Chapter 5) were conducted to address the overall research aim. Lastly, the thesis concludes in Chapter 6 with a summary of the overall research and a description of the implications, limitations and recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

The alarming discoveries from surveys and prior research on people's financial hardships and the profound impact on psychological well-being underscore the importance of possessing the ability to make thoughtful and informed financial decisions. In fact, the financial knowledge and skills necessary to navigate today's financial world have advanced along with the increased complexity of the financial landscape. Additionally, the approach of using a single financial strategy, such as saving money while working and using pension or retirement funds for post-retirement years, which was possible for earlier generations, may not be practical today, considering the rising cost of living and life expectancy rates (Hayei & Khalid, 2019). Altogether, these trend changes highlight the importance of developing financial literacy as early as possible.

2.1 Financial Literacy

Financial literacy refers to the capability of making sound judgements and effective decisions involving money to achieve financial well-being (Xiao et al., 2014; Yahaya et al., 2019). Specifically, Huston (2010) conceptualised financial literacy as having two components, i.e., having the knowledge of financial concepts and products and applying such knowledge. Being financially literate is crucial for preventing and resolving financial problems, both of which are integral to leading a successful and healthy life (Commonwealth Bank Foundation, 2004). The increase in personal financial responsibility over the years, evident through enhanced access to financial products and services, the rapid increase in account ownership and credit consumers, and the shift of decision-making responsibility in terms of retirement planning to individuals (Klapper et al., 2014), means that having sufficient financial knowledge and skills are crucial while ignorance towards such capability bears substantial

costs. Past studies have shown that those who lack knowledge of financial concepts such as compound interest lost more money through higher transaction fees and interest rates on loans and accumulated higher amounts of debt (Lusardi & de Bassa Scheresberg 2013; Lusardi & Tufano, 2015). Individuals with poor financial literacy were also found to have a lower tendency to plan for the future, borrow more money and have fewer savings (Stango & Zinman, 2007; 2009). On the other hand, being financially literate has been observed to have a wide range of benefits. Individuals with adequate financial knowledge and skills were found to be more likely to display responsible borrowing behaviour (Robb, 2011), less prone to make loan defaults (Lusardi & Mitchell, 2014), competent in retirement planning and able to save sufficiently for retirement (Behrman et al., 2012; Lusardi & Mitchell, 2014), participate in the stock market (van Rooij et al., 2011), select lower-cost funds (Hastings & Mitchell, 2010) and have a higher tendency to manage investment risk well by diversifying into different assets (Abreu & Mendes, 2010). Furthermore, financial literacy is crucial for developing positive financial attitudes, which contribute to wiser financial decisions (Ahmad et al., 2018), and it helps people understand and discern between different financial providers, products and services (Wagland & Taylor, 2009).

The importance and benefits of financial literacy are evident in research conducted across various countries. A study in the Netherlands by van Rooij and colleagues (2012) identified the net worth difference between a person in the 75th and 25th percentiles of the financial literacy index to be approximately 80,000 euros, which is around three and a half times the net disposable income of an average Dutch household. In the United States, investors were found to miss out on significant returns on equity as a consequence of paying fees, costs associated with active investment trading and other charges in an effort to 'beat the market', which translates to approximately $100 billion in total cost (Lusardi & Mitchell, 2014). On the other hand, Calvet and colleagues (2007) found that a median investor in Sweden

lost 2.9% of their yearly return on risky portfolios, i.e., equivalent to 0.5% of their disposable income per year, which highlights the high cost that comes with under-diversification. These yearly expenses were as high as 4.5% of their disposable income for every one in ten investors. When it comes to owning a home, because of ineffective refinancing, many Americans ended up paying an extra 0.5% to 1% in mortgage interest every year (Campbell, 2006). This added up to $50 billion to $100 billion in extra payments by homeowners each year.

Given the many ways financial literacy affects people's financial behaviour and outcomes and the high economic cost that comes with a lack of financial literacy, the importance of financial literacy is indisputable. Unfortunately, existing research revealed suboptimal financial literacy levels in most countries, including Malaysia.

2.2 Global Financial Literacy

A worldwide survey of over 150,000 respondents from more than 140 economies by Klapper and colleagues (2014), known as the Standard & Poor's Ratings Services Global Financial Literacy Survey, uncovered that only one in three adults is financially literate. Notably, financial knowledge gaps were shown to be more prevalent among women, people with low incomes, and those with lower levels of education. The patterns of financial illiteracy were observed in countries with developing economies and those with developed financial systems, such as Germany, Italy, Sweden, Netherlands, New Zealand and Japan (Lusardi & Mitchell, 2011). This indicates that suboptimal financial literacy levels can occur in countries at any economic development stage. Furthermore, despite having access to financial products and services, most users were found to lack the financial knowledge and skills necessary to benefit from them. For instance, only 38% of account owners globally were reported to be financially literate. Of this number, 57% were account owners from advanced economies, and 30% were from emerging economies. The lack of financial knowledge put these account

owners in a disadvantageous position, as the statistics show that only 42% of account owners utilised their accounts to save money. The same concerning finding is found among credit card users and homeowners, whereby many of these individuals do not have adequate financial knowledge, which puts them at risk of inadvertently accumulating high amounts of debt. As expected, studies across various countries have found poor financial literacy among their debtholders: Brazil (60% of credit card users are not financially literate), Turkey (71% of credit card users are not financially literate), Japan (50% of individuals with a home mortgage are not financially literate), China (50% of credit card users do not have a proper understanding of the compound interest concept) and United States (43% of credit card users do not have a proper understanding of the compound interest concept).

The recent financial literacy survey by OECD/INFE revealed that the average financial literacy score was only 60% out of 100% and highlighted areas for improvement in all aspects of financial literacy (OECD, 2020). Firstly, for financial knowledge, the average score among the respondents was an underwhelming 63% out of 100%. Only 26% of respondents provided correct responses to questions on simple and compound interest, which is concerning as these concepts are part of the basic understanding of financial management and impact one's ability to save sufficiently. Additionally, only half (53%) of respondents obtained the minimum score (70% out of 100%), which qualifies one as being financially knowledgeable. When it comes to self-reported financial knowledge, only 17% of respondents rated their financial knowledge as high, 53% considered their financial knowledge as average, and 26% regarded their financial knowledge as low, which indicates that generally, people are not confident about possessing adequate financial knowledge to utilise financial products and services effectively. As for financial behaviour, the average score among the respondents was only 59% out of 100%. The financial behaviour score was computed from statements related to budgeting, saving, having control over expenditure, selecting financial products, and avoiding indebtedness. From the

total sample, unfortunately, only half (49%) achieved the minimum score (67% out of 100%), representing the ability to identify the essential financial behaviours required for financial well-being and act upon them. Another finding from the survey was that product use was relatively low among the respondents, with less than half of them (46%) using or purchasing a financial product or service in the year prior to the survey interview. Upon further inspection, approximately one-fifth of respondents (23%) revealed that they sought help from family and friends to borrow or save money, which resulted in them bypassing the formal financial system. Financial products for transactional purposes were used the most, while insurance products were the least, highlighting the concern about people's ability to protect themselves against unexpected financial loss. Lastly, for financial attitude, the average score among the respondents was again unsatisfactory, i.e., a score of 60% out of 100%. Only 43% of respondents obtained the minimum score (60% out of 100%), which represents having a preference towards long-term perspective and positive attitudes towards saving. Another alarming finding from this survey is that only one-third of respondents (28%) have emergency savings worth one week to cover their expenses in cases of income loss, demonstrating poor financial resilience. Evidently, a quarter of respondents (25%) shared that they would only be able to sustain themselves for around one month, 15% said that they would be able to do so for the period between three to six months, and 18% can sustain themselves for more than six months. These findings are distressing as they reveal unpreparedness to face financial shocks, which seriously affect one's financial security and psychological well-being.

2.3 Financial Literacy in Malaysia

The state of financial illiteracy is similarly troubling in Malaysia. According to the same Standard & Poor's Survey, only 36% of Malaysians are financially literate (Klapper et al., 2014). On the other hand, the 2020 OECD/INFE Financial Literacy survey demonstrated that

the financial literacy score of Malaysians was a mere 59.7% out of 100% (OECD, 2020). In the same way, a rather underwhelming composite Malaysia Financial Literacy and Capability (MYFLIC) Index of 59 out of 100 was revealed in Bank Negara Malaysia's Financial Capability and Inclusion Demand Side Survey 2021 (Bank Negara Malaysia, 2021). Both Malaysians' financial knowledge (60.2) and financial attitude score (54.7) were found to be significantly below global averages (global financial knowledge: 63, global financial attitude: 60) (OECD, 2020). The financial behaviour score of Malaysians has also worsened compared to the previous survey conducted in 2018 (Bank Negara Malaysia, 2021). Additionally, although Malaysians were shown to have a better understanding of financial concepts compared to the previous survey, a significant gap was found between the financial knowledge possessed and the actual application of such knowledge. For instance, approximately half of the respondents failed to accurately apply the understanding of inflation and investment risks and returns to the financial scenarios presented to them in the survey. In terms of financial protection, such as insurance, one in three respondents reported having no interest in learning about the topic, which highlights the importance of improving people's understanding and addressing any existing misconceptions about the subject matter. Lastly, another survey finding was that Malaysians' digital financial literacy level is relatively low despite the rapid adoption of digital financial products and services. Most respondents also showed signs of vulnerability towards online financial scams and account security breaches.

Apart from global and local surveys, several past studies highlighted suboptimal financial literacy among Malaysians. Specifically, poor financial literacy levels were demonstrated across various demographic characteristics, i.e., from students (Ghazali et al., 2017; Yew et al., 2017) to working adults (Loh et al., 2019; Mokhtar, Dass, et al., 2018; Yong et al., 2018), women (Falahati & Paim, 2011; Sawandi et al., 2018), low-income individuals (Sabri et al., 2022) and among the older population (Yin-Fah et al., 2010). Overall, Malaysians

demonstrate a superficial level of financial knowledge. To illustrate, most Malaysians understand that income must be sufficient to cover expenses but lack the understanding of various financial institutions' roles and functions, and have poor awareness of the different types of financial products and services and their utilisation for diverse financial purposes, for example, for savings, investments, and financial protection (Aziz & Kassim, 2020; Mokhtar, Sabri, et al., 2018). As a result, they face unfavourable financial circumstances such as poor management of credit and insufficient funds to invest or purchase insurance.

Altogether, results from surveys and past studies show that most people around the world, including Malaysians, lack the financial literacy needed for effective financial management. This is worrisome, especially during times of financial crisis or unprecedented financial emergencies, which is likely to put significant stress on individuals and households. Therefore, the importance of enhancing financial literacy goes beyond achieving financial security, extends to one's well-being and quality of life, and significantly impacts a country's economy. Over the years, evidence of the population's poor levels of financial literacy and the documentation of detrimental effects on people's well-being have facilitated the consideration of financial literacy interventions in many countries.

2.4 Global Financial Literacy Initiatives

Governments and educators often implement financial education policies and awareness initiatives to equip people with the understanding and resources required to make sound financial decisions (Braunstein & Welch, 2002; Fernandes et al., 2014; Lewis & Messy, 2012; Ntalianis & Wise, 2010; OECD, 2016). These financial education initiatives usually address and consider the needs of people from different socio-economic backgrounds and are conducted to help people become financially literate, characterised by having financial awareness, knowledge, skills, attitude and behaviours that contribute to financial well-being

(Consumer Financial Protection Bureau, 2015; OECD, 2013). Typically, a country appoints a leading authority that implements the national strategy, under which the financial education initiatives are carried out throughout the country (OECD, 2013; 2015). In Australia, the Australian Securities and Investments Commission (ASIC), with the support of the Australian Government Financial Literacy Board, has been placed in charge of promoting financial literacy awareness through its portfolio as part of the national strategy (OECD, 2013). Specifically, ASIC plays the role of fostering informed and confident financial market participation. In New Zealand, the leading authority, i.e., the Commission for Financial Capability (CFC), is responsible for providing financial education to retirees and conducting ongoing assessments of retirement income policy. On the other hand, in the United Kingdom, the government-instituted Money Advice Service (MAS) was assigned to offer free and objective financial advice to boost the country's financial capability level (OECD, 2013). MAS also conducts annual Financial Capability Surveys that contribute valuable data to track the progress of and assess the existing financial education framework (Money Advice Service [MAS], 2015). In the United States, the Financial Literacy and Education Committee (FLEC) was constructed to enhance the financial literacy level of its people and conduct yearly assessments of the national strategy (Financial Literacy & Education Commission [FLEC], 2006). As for Singapore, the Financial Education Steering Committee (FESC) was set up to offer guidance for financial education efforts, regularly assess existing efforts, detect areas for improvement and govern the MoneySENSE financial education programme (Lau et al., 2005; OECD, 2013). The similarity between these five countries is that they adopted an evidence-based approach in developing their financial education initiatives, which involves tracking the progress of the programmes and reporting the outcomes, conducting surveys, and creating a revised framework based on the objectives it has set out to accomplish. Such an approach is essential as it ensures that the contents of the financial education programmes are effective in

meeting the needs of people from various backgrounds and, thus, able to enhance the financial literacy level of people. All five countries designed their curriculum based on six financial objectives that are considered essential components for financial literacy and capability, namely planning for life events, expense management, debt management, investing, knowledge of financial products and services, and staying informed to make sound financial decisions.

As part of most countries' financial education initiatives, finance-based curricula are often incorporated in schools. For instance, in 2013, the United States Consumer Financial Protection Bureau proposed implementing financial education in the K-12 school curriculum (Tian & Wang, 2022). Similarly, steps to include financial education in schools were taken by other nations, including the United Kingdom, Australia, Japan, China, India, and Brazil. Some institutions have also taken an innovative approach to financial education. For example, the Vanguard Group in the US developed a programme called My Classroom Economy (MCE) which utilises an experiential learning mode as opposed to traditional lesson plans. The programme simulates a real-world economy in a classroom setting in which students can earn and spend their money with the supervision of teachers through various tasks and activities. In China, some high schools incorporated finance-based education in their curriculum to foster hard and soft skills among students, which can also be offered to non-students of the institution (Slade & Brown, 2020). Examples of programmes include investing simulation competitions, internships at financial institutions and activities on community financial literacy.

2.5 Financial Literacy Initiatives in Malaysia

In Malaysia, several governmental and public initiatives, as well as early-stage financial literacy interventions, have been implemented. The Malaysian government, together with several other agencies under the Financial Education Network (FEN), implemented the National Strategy for Financial Literacy (2019-2023) in July 2019 to increase the level of

financial literacy among Malaysians to promote sound financial behaviour and attitude (Aziz & Kassim, 2020). As part of this initiative, the Ministry of Education in Malaysia integrated essential financial education components into the primary and secondary school curriculum. On the other hand, Bank Negara Malaysia, under the same strategy, implemented three initiatives. First is a collaborative Public-Private Partnership initiative, i.e., 'Karnival Kewangan', which focuses on spreading financial awareness and addressing consumers' financial needs across the country. Second is by providing training to counsellors in government agencies who are responsible for conducting educational programmes. The third initiative is an online learning module for Malaysian civil servants to encourage personal finance education. Another organisation that is involved in the National Strategy is the Employees Provident Fund (EPF) with two financial education initiatives, namely the Retirement Advisory Service (RAS), which focuses on promoting financial literacy as a means to increase people's retirement savings and enhance effective retirement planning and an expenditure guide called 'Belanjawanku', which helps Malaysians in their budgeting. Other initiatives under the same strategy include the InvestSmart® initiative by the Securities Commission Malaysia, which focuses on creating knowledgeable, independent, and capable investors who can make appropriate investment decisions for themselves and the effort of promoting awareness of the available consumer protection systems to the public by *Perbadanan Insurans Deposit Malaysia* (PIDM). In 2006, Bank Negara Malaysia started its credit counselling agency i.e., AKPK, which conducts programmes on financial education, financial counselling, and debt management. Lastly, under the National Strategy, *Permodalan Nasional Berhad* (PNB), a government-linked fund manager, has been conducting investment seminars yearly since 2008 for the public with a focus on general financial planning and unit trust investment.

Some private institutions have also taken the initiative of conducting financial education programmes. In 2011, Prudential Assurance Malaysia Bhd (PAMB) launched financial education programmes known as Cha-Ching and Duit Right programmes aimed to instil money management skills among children and youth (Aziz & Kassim, 2020). An initiative by Youths for Youths known as Financial Literacy for Youths (FLY) was also created to promote awareness of the importance of financial knowledge among youths by providing online materials on finance and conducting financial events (Financial Literacy for Youths Malaysia [FLY], 2023). Apart from initiatives by the government and private institutions, several recent studies have conducted early-stage innovative financial literacy interventions for the purpose of investigating their efficacy. For example, Sabri and colleagues (2019) conducted a study to investigate the effectiveness of using gamification in financial education. Their financial education tool, called Smart Money Kit, was created to help parents, caregivers, and teachers educate children in personal financial management. Results from the study revealed improvements in financial knowledge, financial behaviour and positive financial attitudes among children. Khoo and Fitzgerald (2017), on the other hand, used mobile cartoons to promote financial awareness and instil financial knowledge, which demonstrated a positive impact on students' awareness and financial literacy. More recently, Yin Yin and colleagues (2022) leveraged digital tools by creating a Finlite mobile app to educate undergraduate students on financial literacy and demonstrated an increase in savings behaviour, financial accountability and financial literacy.

2.6 Positive Outcomes from Financial Literacy Interventions

As observed, most financial literacy initiatives by the government and public institutions are centred around providing financial education in hopes of cultivating better financial decision-makers. The financial education offered often involves either one or a

combination of the following: instilling awareness of the importance of financial literacy, promoting understanding of financial products and services or equipping people with financial knowledge. Several countries have demonstrated positive outcomes through financial education conducted under their national financial literacy strategies. According to the review of workplace programmes under New Zealand's national strategy, participants of the programmes showed improvements in the course's core areas, particularly in saving behaviour and retirement planning (OECD, 2015). Additionally, employers noted significant and extended improvements in employee job satisfaction as well as in their overall competence and confidence at work, both of which contributed to higher productivity. In Australia, positive results were obtained from financial capability programmes such as MoneyMinded, MoneyBusiness and Saver Plus, which were designed to help individuals from underprivileged groups build saving and money management skills. Specifically, financial knowledge and skills developed among the participants, along with improved confidence and sustained behavioural change. Spain also observed positive outcomes from programmes under its national strategy, i.e., an increase in financial literacy levels among those who completed the programmes. In Malaysia, a financial capability programme was developed by Bank Negara Malaysia (BNM) and its subsidiary AKPK, called *Pengurusan Wang Ringgit Anda* (POWER!) that focused on equipping youth and first-time borrowers between ages 18 to 30 with knowledge and skills of six key areas of financial management under topics of cash flow management and debt acquisition and management. Results from the programme demonstrated a 12% increase in financial knowledge and skills levels.

In terms of the effectiveness of financial education conducted at schools, several studies have been conducted and shown significant improvements in student's financial literacy and financial behaviour following undergoing a finance-based curriculum offered in high schools (Asarta et al., 2014; Brown et al., 2014; Danes & Haberman, 2007; Gillen & Loeffler, 2012;

Varcoe et al., 2005). Similar findings were observed in college settings (Peng et al., 2007). Some other studies suggest that incorporating technology in financial education, for example, using computer games and virtual learning environments, may produce beneficial outcomes (Schuchardt et al., 2009; Thorne & Porter, 2011). However, study findings so far have demonstrated inconsistent evidence of the effectiveness of such an approach among youth and adults. On the other hand, experiential-based learning, such as the MCE programme by the Vanguard Group, demonstrated more promising results, with significant improvements in financial knowledge and behaviour across a large sample of almost two thousand students from 24 schools. Specifically, students who underwent the programme were more likely to become account owners and participate in financial activities, indicative of enhanced financial literacy.

2.7 Limitations of Current Financial Literacy Interventions

2.7.1 Caution Required When Generalizing Positive Outcomes From Financial Education Interventions

Although existing financial education is promising in delivering positive outcomes, several key limitations need to be highlighted and addressed. Firstly, even though 60 countries (Maman & Rosenhek, 2019) have implemented a national financial literacy strategy, not all countries have reported the outcomes from programmes conducted under the strategy. In fact, only a small number of countries have overtly reported positive results from their national strategy programmes, as depicted in the previous section of this chapter. Most of the existing strategies still face trouble defining precise and reliable measures of success (OECD, 2015). Additionally, most studies conducted on financial education are flawed as they employed data collection methods that are inclined towards reporting the effectiveness of this approach (Willis, 2008). For example, a large number of these studies used self-assessment methods when assessing the changes resulting from the intervention, whether in terms of knowledge,

behaviour or confidence. The problem with self-assessment methods is that they are often inaccurate because people tend to overestimate the knowledge gained and the behavioural improvements experienced. Results from follow-ups are also vulnerable to similar bias as people are inclined to overreport the behaviours that are anticipated from the particular course or programme. Other factors that contribute to inaccurate and positively skewed data include higher response rates from individuals who experienced positive outcomes (financial or behavioural improvements) compared to those who did not. Additionally, those who voluntarily participate in financial education programmes often already possess characteristics that are conducive to healthy financial behaviours, leading to positively biased results. Benefits from financial education could also be misreported as a result of attributional errors. Often, financial education programmes are supplemented with additional support such as monetary rewards and direct credit advice. Thus, the positive outcomes experienced by participants could be misperceived as resulting from the programme instead of the support provided. Based on the reasons discussed, caution should be exercised when generalising the positive outcomes arising from financial education interventions, whether conducted under national strategies or those from empirical studies.

2.7.2 Lack of Effectiveness of Financial Education Interventions

Upon further inspection of past studies, a significant number of financial education interventions have been found to be ineffective rather than effective. Fernandes and colleagues (2014) conducted a meta-analysis of 201 previous studies on financial education and financial literacy. Findings from the meta-analysis revealed that interventions designed to improve financial literacy generally only account for 0.1% of the variance in financial behaviour, and its effect decreases among low-income samples. The effects of financial education also declined over time, and longer interventions were found to have minimal lasting effects on

financial behaviour. Studies conducted on long-term financial programmes, for example, high school courses that last up to a semester (Federal Reserve Board, 2004; Mandell & Klein, 2009) and one-and-a-half-year-long credit counselling (Kim et al., 2003) were also found to be insufficient in producing lasting and positive effects. Some studies have also demonstrated that the impact of financial education on positive financial behaviours such as savings diminished further when investigated in larger samples and across individuals from different backgrounds (Cole & Shastry, 2009; Kaiser & Menkhoff, 2017). A common criticism of these financial education programmes is that they focus primarily on disseminating financial information to improve awareness and understanding of financial matters, with less emphasis on addressing people's capability to conduct effective financial management (Harrison, 2016). Past studies have shown that merely providing sufficient information may not change financial behaviour or produce positive financial outcomes (Bernheim et al., 2001; Gross et al., 2005). For example, having an in-depth understanding of the topic of retirement, i.e., knowledge of various retirement plans and the interest rates and risks involved, was found to be inadequate in ensuring that one will make the right decision when choosing the retirement plan that tailors to their needs (Bernheim & Garrett, 2003; Lusardi & Mitchell, 2007a). Due to these findings, financial education programmes focused solely on improving financial knowledge have been deemed as having limited benefits.

In the Malaysian context, a study conducted among youths to investigate the role of financial education as a moderator for the relationship between financial attitude, parental financial socialisation and financial literacy with prudent financial management practices revealed that financial education did not significantly moderate the relationship between the variables as expected (Bakar & Bakar, 2020). Results obtained signify that there may be other factors in play that influence financial management practices and that financial behaviour among Malaysian youth does not improve as a result of mandatory financial education. The

finding from this study is insightful as it highlights that financial education, especially within the context of the Malaysian education system as an approach to resolving financial illiteracy, is potentially ineffective and illustrates the challenges that Malaysian stakeholders must navigate in order to develop effective financial literacy interventions.

2.7.3 Effective Financial Education Would Be Costly

The lack of efficacy in improving financial literacy and behaviour is, unfortunately, not the only limitation of financial education interventions. In practice, effective financial education would need to be highly costly; in terms of time, money and materials (Hastings et al., 2013; Willis, 2011). Firstly, the alarming poor financial literacy levels of most people, as described in the earlier sections of this chapter, signifies that for financial education programmes to be effective, they need to be comprehensive. This means offering a broad scope of knowledge and skills, from simple mathematics to evaluating the credibility of information sources (Willis, 2011). Furthermore, increased product complexity and the ever-changing financial market mean that the knowledge and skills imparted need to be vast and advanced. For instance, most financial decisions, such as those regarding insurance, credit and investments, demand a sufficient understanding of different financial concepts, the ability to interpret text, tables and graphs, understand and compute a range of arithmetic operations, know which arithmetic operations to use in the specific financial decision, the ability to make accurate forecasts about one's future income and expenditures, as well as market and economic factors such as interest rates, investment fund performance, and inflation. Educating people with such a comprehensive range of knowledge and skills would undoubtedly involve a significant amount of resources, from educators and materials to other administrative expenses, which overall incur a high monetary cost.

Secondly, as individual and household financial situations, preferences and values vary, the ‘best’ financial option or decision for one individual or household may not apply to another, which explains why general, one-size-fits-all financial education programmes are often ineffective (Willis, 2011). Instead, in-depth and personalised education or guidance is more likely to result in positive outcomes. While this approach appears promising, changes in financial behaviour or positive financial outcomes may result from the educator or counsellor taking on a decision-making role, either by advising the individual on the best course of action or acting on their behalf, rather than stemming from the individual’s improved financial literacy. Apart from not actually improving one's ability to manage one's finances, another issue with personalised financial education is that it requires financial educators or counsellors to evaluate each individual's or household's financial situation and goals, customise a suitable plan, and finally engage in one-to-one sessions; all of which are time, money and labour intensive.

Thirdly, the rapid evolution of financial products, services, and the marketplace means that consumers need to stay updated with the latest changes in order to make appropriate financial decisions (Willis, 2011). Unfortunately, educators encounter a challenge in that the time between receiving the latest information and preparing teaching materials may render the information obsolete by the time it is conveyed to consumers (Willis, 2008). As such, financial education needs to not only be provided promptly but also frequently to stay relevant, which, again, is resource-intensive. Altogether, in order for financial education to be effective in improving financial literacy and behaviour, it would need to be comprehensive, personalised and frequent, which is expensive for both the government and individuals. Based on the numerous limitations of existing financial education, it is essential to explore alternative approaches to improve financial literacy that provide higher chances of yielding positive outcomes while minimising monetary and personal costs.

2.8 The Exploration of Alternative Methods to Improve Financial Literacy and Psychological Well-Being

2.8.1 Failure in Addressing Cognitive Factors

Objective researchers posit that studies conducted thus far have not shown a causal link between financial education and improved financial literacy, financial behaviour and financial results (Cole & Shastry, 2008; Hathaway & Khatiwada, 2008; Willis, 2009). The explanation for the lack of connection is largely attributed to cognitive biases, heuristics and non-rational factors that impact financial decision-making. According to Willis (2011), even individuals who possess financial knowledge and skills are not invulnerable to cognitive flaws that may lead to suboptimal financial decisions. Thus, even if the gap in people's financial knowledge and skills could be closed by financial education, there are other elements not accounted for or targeted in financial education that would still render it ineffective in helping people make sound financial decisions. Today, the sheer volume of available financial products and services and the great deal of information required to evaluate them properly may steer some people to use mental shortcuts to simplify decision strategies, while some might even succumb to decision paralysis (Willis, 2008; 2011). Apart from that, because financial decisions have far-reaching consequences on various life aspects, the comprehension of how one's choices can potentially impact these facets often leads to stress. This stress not only consumes additional mental resources but also impairs the capacity to consider crucial factors related to the decision at hand thoroughly. Other cognitive limitations potentially faced during decision-making include difficulty comprehending the long-term implications of a financial decision made today, trouble delaying gratification, and over-confidence or under-confidence about one's financial knowledge and skills, all of which may lead to suboptimal financial decisions.

In some cases, financial education has even demonstrated adverse effects and led to worse financial behaviour or financial mistakes (Willis, 2011). This occurs because, although financial education enhances one's awareness of financial concepts, products, and services, individuals can either become overwhelmed with information and options or, conversely, mistakenly believe they possess adequate knowledge; both of which can lead to suboptimal financial choices. Similarly, the usual practices in financial education programmes of enhancing participants' belief in their ability to manage their finances, whether directly or indirectly, may pose potential harmful effects. Although well-intentioned, this practice may result in over-optimism regarding how much one has learned and a false impression of one's ability to navigate financial risks. For these individuals, financial education enhanced their confidence without any actual increase in their financial knowledge and skills, which puts them at risk of engaging in decisions in which they lack competence instead of seeking professional help and support (Willis, 2008). Altogether, the cognitive-centred challenges faced during financial decision-making and in becoming financially literate highlight the importance of developing cognitive capabilities if the aim is to ensure that people can make sound financial decisions for financial and overall well-being.

2.8.2 Insufficient Depth in Malaysian Financial Literacy Literature

To address the concern of suboptimal financial literacy and the negative repercussions on people's psychological health, numerous studies have been conducted to broaden the understanding of financial literacy in the Malaysian context so that effective measures could be taken to improve the level of financial literacy and, ultimately, psychological well-being. Apart from survey-based research conducted to obtain information regarding Malaysians' financial literacy levels, one of the most common approaches of research conducted in the last few years was exploring the determinants of financial literacy. Many of these studies (Ashaari

& Yusof, 2019; Ghazali et al., 2017; Lee et al., 2019; Mokhtar, Sabri et al., 2018; Nahar et al., 2022; Sawandi et al., 2018) explored financial literacy across various demographic determinants such as gender, age, income, ethnicity groups and employment status. On the other hand, other studies conducted in Malaysia (Abdullah et al., 2019; Esmail Alekam et al., 2018; Hayei & Khalid, 2019; Murugiah, 2016; Yew et al., 2017; Yong et al., 2018) were inspired by existing financial literacy literature from foreign countries (Atkinson & Messy, 2012; Hogarth & Hilgert, 2002; Shih & Ke, 2014), which took the approach of understanding financial literacy through its components; i.e., financial attitude, financial knowledge and financial behaviour. A few other studies (Esmail Alekam et al., 2018; Loh et al., 2019) briefly explored the relationship between social determinants, such as family characteristics and peers with financial literacy. Apart from these correlational studies, several small-scale experimental studies (Khoo & Fitzgerald, 2017; Yin Yin et al., 2022) have been observed in recent years that investigated the effectiveness of financial educational tools. Concerning understanding the impact of suboptimal financial literacy, most existing Malaysian studies conducted brief investigations by exploring the relationship between financial literacy with financial well-being and financial distress (Abdullah et al., 2019; Idris et al., 2013; Rahman et al., 2021; Sabri et al., 2012; Sabri & Falahati, 2013; Sabri & Zakaria, 2015).

While the studies conducted in Malaysia thus far have contributed helpful information about financial literacy in this country, undeniably, some limitations exist. Exploration of correlational relationships between variables of common interest to financial literacy researchers, which are often conducted sporadically, and investigation of the efficacy of selective financial interventions may cause us to overlook many other valuable pieces of information essential to fully comprehending the poor financial literacy phenomenon. Firstly, actual challenges that individuals face in acquiring and effectively applying financial knowledge in real-life settings could be missed in these studies. As a result, failure to identify

and provide practical resources or assistance to help individuals overcome the challenges faced can be expected, which could be one of the many explanations for the ineffectiveness of current financial educational interventions in improving financial literacy levels (Fernandes et al., 2014). Additionally, due to the nature of existing research in Malaysia, there is a lack of insight into the experiences of people with poor levels of financial literacy; for example, struggles faced and how the lack of ability to make sound financial decisions have affected one's livelihood and psychological well-being. This information is crucial as they offer guidance to policymakers, financial institutions and social welfare organisations on areas of support to provide for vulnerable individuals. An in-depth exploration of individuals' subjective experiences might also uncover information regarding the help that individuals with poor financial literacy seek to finally address any 'unmet need' by bridging the gap between assistance or support by the financial services sector and financial literacy interventions with actual requirements or demands of these individuals. In sum, the complete experience of poor financial literacy has not been captured adequately in this country, which potentially impedes the implementation of effective interventions aimed at enhancing people's financial literacy and, consequently, their psychological well-being.

2.9 Problem Statement

In recent years, there has been a dramatic increase in the prevalence of mental health issues in Malaysia, with every three out of ten individuals aged 16 and above (29.2%) reported suffering from mental health problems (Ministry of Health Malaysia, 2015). As mental illness has become Malaysia's second most prevalent health problem after heart disease since 2020 (Lee & Lai, 2017), adopting preventative mental health strategies and interventions to improve Malaysians' psychological well-being is crucial. Drawing from the findings of past research that highlighted financial difficulties as a significant risk factor for mental health issues (Kiely

et al., 2015) and a strong association between one's ability to conduct effective financial management and psychological well-being (bin Hassan et al., 2021), financial literacy could be a valuable tool to improve psychological well-being among Malaysians. The significance of increasing financial literacy to improve Malaysians' well-being and quality of life is further supported by the Malaysia National Strategy for Financial Literacy 2019-2023 (Financial Education Network, 2019) initiated by ex-prime minister Tun Dr Mahathir Mohamad.

Regrettably, existing financial education initiatives have demonstrated a lack of effectiveness in enhancing financial literacy and promoting welfare-enhancing financial behaviours, as indicated by numerous previous research studies (Fernandes et al., 2014). Conversely, it is unfortunate that to enhance the prospects of financial education programs yielding enduring and positive results, a high cost would be required (Hastings et al., 2013; Willis, 2011). These limitations collectively emphasise the critical need to investigate alternative strategies and interventions to improve financial literacy and psychological well-being, especially considering the state of financial illiteracy in Malaysia and the severe adverse consequences of suboptimal financial decisions on psychological health.

2.10 Thesis Aim and Objectives

The aim of the overall research was, therefore, to provide solutions to the current ineffective financial education that is used as the primary approach for financial illiteracy so that financial literacy and the psychological well-being of Malaysians can be improved. Specifically, the aim is broken into two objectives that guided the respective studies and addressed the overall aim of the research in greater depth.

Firstly, one potential explanation for the lack of effectiveness of current financial education is that it does not address factors that may have a role to play in affecting people's ability to learn and utilise the financial information imparted. As past research has highlighted

cognitive limitations such as biases and heuristics to significantly impact one's ability to make sound financial decisions despite having adequate financial knowledge and skills, and no concrete and feasible solution has been identified so far to address them; this research embarked on the journey of exploring the role that cognitive factors play in relation to financial literacy and psychological well-being. If cognitive factors are found to have significant associations with financial literacy and psychological well-being, interventions designed to improve these factors can be implemented to help people overcome the common cognitive limitations and acquire and apply their financial knowledge effectively, resulting in positive financial outcomes and enhanced psychological well-being. Identifying additional factors that can be targeted would also offer the benefit of flexibility to policymakers and educators to design interventions that are practical and cost-effective. Thus, the objective and research question that guided the first study is:

Study 1 Objective: To explore the role of cognitive factors in relation to financial literacy and psychological well-being.

Study 1 Research Question: What is the relationship between cognitive factors, financial literacy and psychological well-being?

Next, despite numerous government attempts to improve the financial literacy of its people, financial problems are still at a concerning rate and show little to no sign of improvement. Looking at the state of Malaysian financial literacy literature, the unsuccessful attempts could be due to a lack of comprehensive understanding of factors that contribute to suboptimal financial literacy and the extent of the impact of poor financial literacy, which means that current interventions are not targeting the factors that actually matter. Hence, this research also explored the lived experiences of individuals with poor financial literacy and psychological well-being using a phenomenological approach that has yet to be explored

sufficiently in the Malaysian context. The intention of obtaining a comprehensive understanding of the poor financial literacy phenomena is to contribute information on the problem areas that have been overlooked or yet to be considered and offer input to guide policymakers in formulating strategies to improve the financial literacy levels and psychological well-being of Malaysians. Thus, the objective and research question that guided the second study is:

Study 2 Objective: To explore the lived experiences of individuals with poor financial literacy and psychological well-being using a phenomenological approach.

Study 2 Research Question: What are the lived experiences of individuals with poor financial literacy and psychological well-being?

In short, the significance of financial literacy for sound financial decisions and positive financial outcomes that contribute to psychological well-being is well established. Unfortunately, as past research and surveys documented, the pervasive issue of suboptimal financial literacy persists globally, including in Malaysia. Despite the implementation of numerous interventions aimed at improving financial literacy, with some having produced positive outcomes, there are clear limitations to existing approaches. Firstly, in terms of actual practices, current financial education interventions implemented have been found to lack effectiveness in generating beneficial and lasting outcomes on financial literacy and welfare-enhancing financial behaviours. Secondly, for financial education to be effective, unfortunately, it would have to be costly. These limitations underscore the necessity for exploring alternative approaches to enhance financial literacy and, consequently, improve psychological well-being. Therefore, this research sought to provide solutions to the existing challenges and pave the way for more effective interventions by addressing the gaps in understanding the cognitive factors influencing financial learning and application, as well as

delving deeper into the lived experiences of Malaysians with poor financial literacy and psychological well-being to identify key factors yet to be targeted in existing interventions.

CHAPTER 3

THE CURRENT RESEARCH

To achieve the overall research aim of providing solutions to the current ineffective financial education to improve the financial literacy and psychological well-being of Malaysians, two objectives were constructed as mentioned in the previous chapter; each guiding an independent study. The conceptual framework for the overall research and the overall research methodology is explained in the next two sections. The two studies are structured into individual chapters—Chapter 4 covers Study 1, while Chapter 5 covers Study 2. Each chapter encompasses a concise introduction, a comprehensive exploration of theoretical foundations, a thorough review of the literature and the formulation of hypotheses or research questions, a detailed depiction of the research methodology, the presentation of results, a discussion of study results, the study limitations, and a conclusion. Finally, an overarching research discussion synthesizes the findings from both studies, addressing the research aim. This is accompanied by the description of combined research implications, limitations, suggestions for future research and, lastly, a conclusion.

3.1 Conceptual Framework of Research

The conceptual framework (illustrated in Figure 1) that guided this research is an adaptation of the Human Capital Theory specific to finance, as explained by Huston (2010). Human capital consists of the knowledge, skills, and experience that are endowed (e.g., cognitive factors) and acquired (e.g., through personal finance education) that can be used in financial activities to “increase expected lifetime utility from consumption” (Huston, 2010, p.307). The level of both endowed and acquired human capital affects individuals' financial literacy and the ability to make effective financial choices, ultimately impacting well-being. According to the Human Capital theory, well-being was explained in the context of financial

well-being. Upon delving deeper into the systematic review of past studies, a close association was evident between financial well-being, which is defined as the extent of feeling secure regarding one's current or future financial circumstance and the ability to make choices for optimal living, with mental health (bin Hassan et al., 2021). Specifically, the review of 32 studies highlighted consistent findings of negative impacts of financial hardship on mental health, such as increased stress, depression and anxiety. Given the compelling evidence linking financial well-being to psychological health and the dire need to enhance mental health among Malaysians, the theory was modified to prioritize psychological well-being over financial well-being, reflecting its greater relevance to the context of this research.

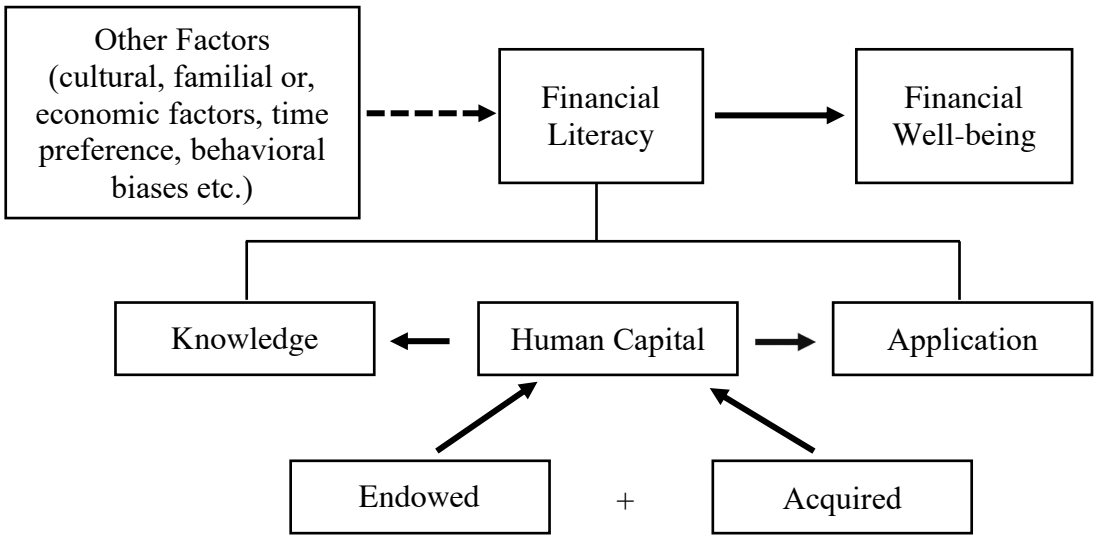
Following this theory, financial education specifically refers to human capital-enhancing efforts to improve financial literacy, which ideally targets two integral components, i.e., financial knowledge and application (ability and confidence to use one's financial knowledge for financial decision-making). As existing financial education programmes have primarily focused their efforts on financial knowledge and demonstrated limited effectiveness in improving financial literacy levels, financial behaviour and ability to make sound financial choices, exploration of other forms of human capital was undertaken in the first study using a correlational approach. Specifically, cognitive factors that may affect the ability to acquire and utilise financial knowledge in daily financial activities effectively were investigated in relation to financial literacy and psychological well-being.

According to Huston (2010), other non-human capital factors such as culture, family, economic conditions, time preference, behavioural biases and many others may also affect financial literacy, which in turn impacts well-being. Considering that Malaysian financial literacy literature lacks comprehensiveness in describing the poor financial literacy phenomena and there is a clear need to improve the effectiveness of current financial literacy interventions,

the second study adopted a phenomenological approach to explore other factors that affect financial literacy and psychological well-being that could have been potentially overlooked. These factors, once identified, could be addressed and targeted in future efforts by policymakers, educators, non-governmental organisations (NGOs) and other stakeholders to help people become financially literate and improve their financial life, which is essential for their well-being.

Figure 1

Overall Research Conceptual Framework Based On The Human Capital Theory



3.2 Overall Research Methodology

3.2.1 Research Design

The research adopted quantitative and qualitative methodologies to address the aim and answer the research questions. Both studies utilised a common participant pool, whereby quantitative analyses were performed on the entire dataset, followed by qualitative analyses on a subset of the original data. For the first study, an online survey method was used to obtain the study sample. A correlational research design was employed to assess participants across

three independent variables of cognitive factors (cognitive ability, numeracy skills, and metacognitive awareness) and two dependent variables, namely, financial literacy and psychological well-being. To investigate the relationship between the variables, a four-step regression analysis by Baron and Kenny (1986) was performed. The significance values from regression analyses were checked and interpreted to understand the relationship between the variables investigated.

The second study involved a subset of the total participants from the first study, i.e., those who fulfilled the inclusion criteria, representing poor levels of financial literacy and psychological well-being. A phenomenological approach was employed using online interviews to obtain an in-depth understanding of the lived experiences of individuals with poor financial literacy and psychological well-being. The data analysis was guided by Braun and Clarke's (2006) framework for thematic analysis, which involved identifying patterns and common themes from qualitative data to provide a comprehensive explanation of the poor financial literacy phenomenon among Malaysians. Pilot studies were conducted prior to data collection for both studies to test the reliability of the questionnaires being used and the overall ease of use of the questionnaires, assess the appropriateness of the interview questions and test the interview protocols as well as assess the overall feasibility of the studies.

3.2.2 Study Location and Study Population

Eligible participants were adults aged 18 and above, residing in Klang Valley, Malaysia, at the time of data collection. The sampling population was selected from Klang Valley as this area is well-developed, has one of the nation's highest numbers of knowledge workers, and approximately 40% of the nation's Gross Domestic Product is concentrated in this area (Boon et al., 2011; Kimiyaghalam & Yap, 2017). The sample for the first study consists of 300 Malaysians who fulfilled the inclusion criteria.

The second study involved a subset of the initial 300 participants from the first study, i.e., 20 participants who fulfilled the inclusion criteria of obtaining a score of seven and below on the Financial Literacy Questionnaire used to measure financial literacy and a score of 30 and below on the Brief Inventory of Thriving used to measure psychological well-being in the first study, and included those who were willing to participate in the follow-up study.

3.2.3 Ethical Considerations

This research was approved by the Monash University Human Research Ethics Committee (MUHREC) (Project ID: 27038, Review Reference: 2020-27038-52057). Participants were required to read and understand the informed consent form (see Appendix A) provided on the front page of the online questionnaire before they proceeded with the survey in the first study. All participants provided their written informed consent for both studies. The second study involved an additional step of obtaining verbal consent for audio recording before proceeding with the interview. Participant numbers were used to conceal the participants' identities during data analyses for both studies to maintain objectivity.

CHAPTER 4

STUDY 1

Cognitive Factors, Financial Literacy and Psychological Well-Being among Malaysian Adults: A Mediation Analysis

4.1 Introduction

Past studies that evaluated existing financial education programmes often attribute the lack of effectiveness of these programmes to the failure to acknowledge and address the role of cognitive factors that may affect one's ability to learn and adequately utilise the financial information imparted (Estelami, 2009; Lusardi, 2008). Undeniably, financial management and planning require individuals to consistently review their financial situation and available resources to make financial decisions (Boon et al., 2011). These processes involve a substantial amount of goal setting, information gathering, cost-benefit analysis, calculations, decision-making, and monitoring, all of which involve cognitive capabilities. Given the limitations of current financial education interventions, efforts directed towards exploring the cognitive factors that affect financial literacy are therefore suggested. A better comprehension of what specific cognitive competencies contribute to higher financial literacy can greatly help educational and regulatory policies develop and implement more effective interventions to enhance financial literacy and, ultimately, the psychological well-being of people. Hence, this study explored the cognitive factors and their role in affecting financial literacy and psychological well-being using a survey sample of adults in Klang Valley, Malaysia. Findings from this study suggest alternative approaches that can be implemented through the education system to improve the financial literacy and psychological well-being of Malaysians and provide insights for worldwide financial literacy and well-being interventions.

4.2 Theoretical Background, Prior Research and Hypotheses

The research model of this study is based on the first part of the Human Capital Theory specific to finance, as explained by Huston (2010). Based on this theory, human capital affects financial literacy and the ability to make sound financial decisions, ultimately impacting well-being. As highlighted by researchers, existing financial education programs have shown limited success in enhancing financial literacy and behaviour as they prioritise imparting financial knowledge over equipping individuals with the skills to apply the knowledge for effective financial management (Harrison, 2016). Given the current need for more emphasis on the application aspect of human capital in financial education and because the principal determinant of financial literacy centres around cognitive factors (Muñoz-Murillo et al., 2020), a promising approach to address the presenting issue would be to enhance cognitive capabilities. Findings from past research highlighting suboptimal financial decisions in both groups of people, i.e., those who are financially unsophisticated and those who are most financially educated, further strengthen the need to take measures beyond merely increasing financial knowledge if the goal is to ensure that people can make rational financial decisions (Harrison, 2016). Specifically, efforts to help people modulate their cognitive biases and improve their cognitive abilities and skills have been strongly recommended by past research. This idea is reinforced by several other studies that found associations between higher cognitive competencies with better financial habits, fewer financial errors, and the usage of diverse and sophisticated financial instruments (Agarwal & Mazumder, 2013; Christelis et al., 2010; Cole et al., 2014; McArdle et al., 2011).

In terms of cognitive factors, cognitive ability, numeracy skills and metacognitive awareness have been suggested by past research as human capital that helps in overcoming cognitive biases and have been shown to have a close association with financial literacy

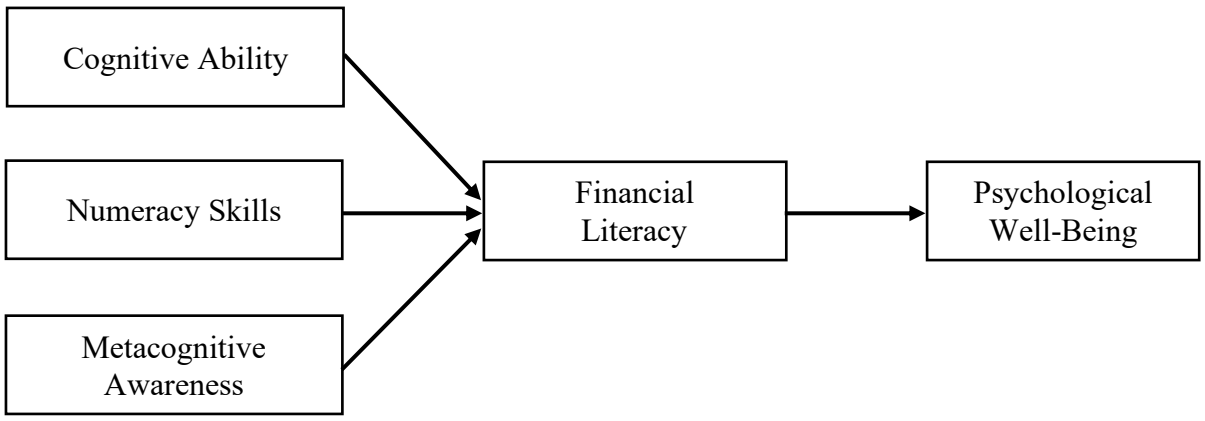
(Antonietti et al., 2016; Lusardi, 2012; Roszkowski et al., 2015). Unfortunately, investigations of the relationship between cognitive factors and financial literacy in the Malaysian context remain inadequate. This is evident from the fact that studies conducted in Malaysia have primarily focused on investigating the association between academic abilities and financial literacy without delving further into the broader range of cognitive factors (Albeerdy & Gharleghi, 2015; Sabri, 2011). Additionally, although financial literacy has been postulated to positively contribute to psychological health based on findings of previous studies (bin Hassan et al., 2021) and the human capital theory (Huston, 2010), this hypothesis is yet to be confirmed in the Malaysian setting. Hence, exploring the relationship between cognitive factors, financial literacy, and psychological well-being is pivotal in understanding the direction future interventions can take to improve financial literacy and, ultimately, psychological well-being.

A framework based on the fundamentals of the human capital theory was used with a few relevant modifications to complement the context of this exploratory study and address the study objective, i.e., to explore the role of cognitive factors in relation to financial literacy and psychological well-being. Achievement of the study objective would allow the identification of alternative factors that can be targeted in future interventions and address the overall research aim of providing solutions to the current ineffective financial education. Therefore, the relationship between cognitive factors, financial literacy, and well-being was explored. The construct of cognitive factors was broken down into three distinct variables, i.e., cognitive ability, numeracy skills and metacognitive awareness, to facilitate the exploration of different facets of cognition. Next, to understand the relationship between financial literacy, cognitive factors and well-being, another component of the human capital theory, i.e., personal finance behaviour, was not explored in this study as it may be a potential confounding variable affecting well-being. In this initial phase of understanding the relationship between the three constructs, i.e., cognitive factors, financial literacy and well-being, this study explored well-being in the

context of psychological well-being. Upon establishing a robust understanding of the relationship between the variables examined in the study, further research may extend investigations into other aspects of well-being. The conceptual framework used in this study is illustrated in Figure 2. To address the study objective, five hypotheses were formulated, which is described in the subsequent section.

Figure 2

Conceptual Framework of The Exploration of Relationship Between Cognitive Ability, Numeracy Skills and Metacognitive Awareness with Financial Literacy and Psychological Well-Being



4.2.1 Cognitive Ability and Financial Literacy

Cognitive ability (CA) refers to the capability of processing mental information to accomplish an outcome, which includes problem-solving, reasoning, judgment, abstract thought, and understanding complex ideas and concepts (Muñoz-Murillo et al., 2020). In cognitive-related research, CA is often represented by cognitive reflection, which is the ability to identify intuitive errors and override incorrect responses when solving problems (Frederick, 2005). The dual-process decision-making model states that information processing involves

two types of systems, i.e., System 1 and System 2 Process. System 1 Process refers to the automatic, emotional, implicit and heuristic-based reaction to information. In contrast, the System 2 Process refers to controlled thought processes based on a careful evaluation that requires more resources. Cognitive reflection is characterised by a thinking disposition, which uses System 2 over System 1 Process during problem-solving. In this form of thinking disposition, tasks at hand are conceptualised to understand the problem better before a solution is formulated instead of relying on intuitive and spontaneous responses that might be incorrect (Shea & Frith, 2016). Essentially, being financially literate is described by two components, i.e., possessing sufficient financial knowledge and effective utilisation of financial knowledge for financial management. In the financial knowledge acquisition process, individuals with higher CA (predominant users of System 2 Process) have been shown to seek and utilise more information than individuals with lower CA, which encourages mastery of financial knowledge (DeYoung et al., 2012).

Next, concerning problem-solving and decision-making, it is not uncommon for people to engage in irrational thinking and behaviour due to biases and heuristics. For example, belief bias and confirmation bias occur due to the failure to separate opinion and past knowledge from the process of critical thinking. Apart from that, when faced with uncertainty and risks, one may succumb to prospect theory, whereby more importance is placed on preventing losses than obtaining gains (Kahneman & Tversky, 1979). Numerous studies have also shown that people resort to passive financial decision-making and default strategies when faced with information and option overload (Choi et al., 2002; Iyengar & Kamenica, 2010; Mullainathan & Thaler, 2000). Overall, cognitive biases and heuristics underlie people's decisions and choices that lead to unfavourable financial outcomes and often explain the lack of economic success (Paraboni & da Costa Jr, 2021). Cognitive biases may also act as a barrier that prevents one from pursuing financial knowledge and skills, even when one has the opportunity to do so. Since cognitive

reflection is represented by the ability to override faulty intuitions and engage in further deliberation, higher CA has been explained to help prevent inaccurate decisions arising from heuristics and biases and allow better assessment of problems involving probability, risk, and ratios. As a result, this form of thinking disposition helps individuals actively acquire financial knowledge and apply the financial knowledge they possess more effectively.

As CA, represented as cognitive reflection, has been shown to play a significant role in facilitating financial knowledge acquisition and application due to the predominant use of the System 2 process (deliberative process), the following hypothesis was formulated:

H1 Cognitive ability is predicted to be positively related to financial literacy, whereby the higher the cognitive ability score, the higher the financial literacy level.

4.2.2 Numeracy Skills and Financial Literacy

Numeracy skills (NS) are the ability to correctly solve problems involving numbers using both basic and advanced calculations (Liberali et al., 2012; Lusardi, 2012;. This form of numerical proficiency is critical in decision-making, particularly when probabilities and risks are involved, and is essential for all levels of financial tasks ranging from basic budgeting to more complex investment decisions. Undeniably, possessing the knowledge of financial concepts such as inflation and risk levels is beneficial. However, this will serve little to no practical use if one cannot solve numerical problems and accurately judge risk, which are fundamental components of almost every financial decision.

Past research has demonstrated a significant difference between individuals with low and high NS in decisions involving probability and risk evaluation. Those with higher NS showed better accuracy and were less prone to biases and heuristics (Peters, 2012). The relationship between a higher level of NS and superior decisions can be understood by greater

utilisation of ‘expected value’ computation, such as calculating success and failure probabilities, as well as evaluating and considering gains and losses (Cokely & Kelley, 2009). Other than performing ‘expected value’ computations, those with higher NS tend to practice elaborative heuristic processing, which allows for more deliberate and thorough processing of numerical information related to the problem. This process involves analysing various aspects of a problem and their possible consequences for proper contextualisation, leading to more robust information storage in the working memory and ultimately translating into long-term memory. As a result, more attentional resources are left available in addition to forming a long-lasting and comprehensive depiction of the problem (Cokely et al., 2006; Craik & Lockhart, 1972). Furthermore, individuals with higher NS were also found to experience more discriminative emotional reactions to probabilities, leading to increased sensitivity to possibilities and less inaccurate probability weighting based on irrelevant information (Petrova et al., 2014).

Overall, NS facilitate financial literacy in both direct and indirect manners. Directly, these skills enable individuals to understand the underlying mechanisms of their financial decisions. Indirectly, NS protect individuals against decision-making flaws, especially when risk is involved. Due to these reasons, it was hypothesised that:

H2 Numeracy skills are predicted to be positively related to financial literacy, whereby the higher the numeracy skills score, the higher the financial literacy level.

4.2.3 Metacognitive Awareness and Financial Literacy

Metacognition is a type of higher-order thinking that allows individuals to understand and regulate their cognitive processes (Flavell, 1979). Metacognition plays a crucial role in skilled learning because it enables one to monitor and evaluate their knowledge and skill level, utilise learning strategies and modify their learning process and behaviour more efficiently

(Schraw et al., 2006). Metacognitive awareness (MA), on the other hand, refers to awareness regarding one's thought process, which is essential for controlling and self-regulating the learning and thinking processes (Jaleel, 2016). Three thinking modes are usually utilised during thinking and decision-making: deliberation, intuition, and heuristics (Antonietti et al., 2016). Neither thinking mode is better, as each has advantages and limitations. Instead, constructive learning and financial decision-making depend on the ability to choose the most appropriate thinking mode for the specific situation and change to a different one if the previous option is ineffective. Hence, a high level of awareness of one's thinking is fundamental for individuals to take appropriate steps to interrupt their cognitive process as it is taking place and make changes as and when it is necessary for better learning and decision-making.

In terms of applying the metacognitive approach to financial education, MA may improve financial literacy in two ways. Firstly, higher awareness of one's cognition allows optimisation of the learning process, which facilitates financial knowledge acquisition. This occurs through carefully evaluating one's existing knowledge and utilising and improvising learning strategies (Schraw et al., 2006). Secondly, MA may also facilitate selecting the most appropriate mental system for the specific financial situation one is experiencing, resulting in the effective application of financial knowledge for financial decision-making (Antonietti et al., 2016). As existing theories and recommendations by current literature are primarily conceptual (Antonietti et al., 2016), there is a need to explore the possibility of using MA as an approach to improve financial literacy by understanding the relationship between these two variables across an actual research sample. Given the conceptual proposition that MA facilitates both components of financial literacy, i.e., acquisition and application of financial knowledge, it was hypothesised that:

H3 Metacognitive awareness is predicted to be positively related to financial literacy, whereby the higher the metacognitive awareness score, the higher the financial literacy level.

4.2.4 Financial Literacy and Psychological Well-Being

In the pool of well-being literature, financial literacy has been shown to positively affect psychological well-being (Conger et al., 2000; Kahn & Pearlin, 2006; Lynch et al., 1997; Rantakeisu & Jönsson, 2003). Those with higher financial knowledge and capability tend to be more confident, experience monetary security and have better money prospects, therefore, experience better mental well-being. In contrast, a lack of financial literacy contributes to financial stress, leading to poor mental health (Lyons, 2007). A study conducted among young adults showed that regardless of age and gender, those who faced financial crises and were required to make economic adjustments experienced higher levels of mental distress, i.e. anxiety and depressed mood (Stein et al., 2013). However, those who could meet material needs and make successful economic adjustments reported greater life satisfaction. The same study also revealed that college students who engaged in active self-education on financial matters and those who communicated with others about the financial crisis faced were found to experience less anxiety and depressive mood and greater life satisfaction. These findings strengthen the idea that being equipped with the resources to meet the needs of various financial circumstances, i.e., financial knowledge and the ability to apply them, is crucial for maintaining psychological well-being.

Based on previous research establishing the detrimental impact of ineffective financial management on psychological well-being, as well as the positive association established between possessing and applying financial knowledge with psychological well-being, the following hypothesis was formulated:

H4 Financial literacy is predicted to be positively related to psychological well-being, whereby the higher the financial literacy level, the higher the psychological well-being level.

4.2.5 Cognitive Factors, Psychological Well-Being and The Mediating Role of Financial Literacy

Several studies have shown that higher cognitive capabilities are associated with lower mental health issues (Batty et al., 2005; Khandaker et al., 2018) and higher psychological well-being (Ali et al., 2013; Jokela, 2022; Llewellyn et al., 2008). Although positive associations have been consistently demonstrated between cognitive capabilities and psychological well-being, the underlying mechanism of the association remains poorly understood (Jokela, 2022). As depicted by past research, the relationship between cognitive factors and financial literacy and that of financial literacy and psychological well-being have been established; however, they have only been studied independently. Hence, the investigation of the mediating role that financial literacy plays in the relationship between cognitive factors and psychological well-being was proposed. The purpose of this investigation is to identify the variables that can be addressed in future interventions to enhance people's psychological well-being and, therefore, provide practical solutions to the current mental health issues arising from financial struggles. A mediation relationship, if established, would suggest a collaborative strategy of enhancing cognitive capabilities as well as financial literacy to offer the potential for a more substantial positive impact on psychological well-being, particularly among individuals with poor financial literacy levels and lacking cognitive capabilities. Based on the reasons discussed, the following hypothesis was postulated:

H5 Financial literacy is predicted to mediate the relationship between cognitive factors (i.e., cognitive ability, numeracy skills, metacognitive awareness) and psychological well-being.

4.3 Methodology

4.3.1 Research Design

This study adopted a correlational design that measured each participant on three independent variables, i.e., CA, NS and MA and two dependent variables, i.e., financial literacy and psychological well-being. Primary data was collected using the survey method by administering questionnaires online to test the study hypotheses. The survey was conducted in English, given that the Klang Valley has the highest concentration of knowledge workers (Boon et al., 2011; Kimiyaghalam & Yap, 2017), implying that most individuals likely meet the basic English proficiency criterion. At the beginning of the questionnaires, a demographic information form was included to collect information on age, gender, ethnicity, employment status and monthly income. Each set of questionnaires consisted of five self-administered questionnaires with a close-ended structure that measured the study variables, i.e., CA, NS, MA, financial literacy and psychological well-being. For measuring CA and NS, sound psychometric tests consistently used in past research studying cognitive mechanisms were used, namely the Cognitive Reflection Test to measure CA and the Berlin Numeracy Test to measure NS (Cokely et al., 2012; Frederick, 2005). For the variables of MA and psychological well-being, widely used self-report questionnaires with good psychometric properties were administered, namely, the Metacognitive Awareness Inventory to measure MA and the Brief Inventory of Thriving to measure psychological well-being (Gabardo-Martins & Ferreira, 2018; Pintrich, 2000; Schraw & Dennison, 1994; Sorgente et al., 2021; Su et al., 2014). As for the variable of financial literacy, a financial literacy questionnaire adapted from a Malaysian study conducted by Boon and colleagues (2011) that was designed based on the previous work of (Lusardi, 2008; Lusardi & Mitchell, 2005; Lusardi & Mitchell, 2007b) was used to measure the level of financial literacy.

Before data collection, a pilot study was conducted to assess the reliability of each variable measure and the overall ease of use of the questionnaires. The five self-administered questionnaires, i.e., Cognitive Reflection Test, Berlin Numeracy Test, Metacognitive Awareness Inventory, Financial Literacy Questionnaire and Brief Inventory of Thriving, were distributed to 40 participants that fulfilled the inclusion criteria of the study (age 18 and above and residing in Klang Valley at the time of data collection). Reliability analyses were conducted by computing Cronbach's alpha for each variable measure. A feedback form was also attached at the end of the online survey form to obtain participants' comments and feedback regarding the experience of using the questionnaires. Feedback from the pilot study revealed that participants did not face any issues with the overall understanding and use of the questionnaire. Additionally, all five questionnaires demonstrated acceptable Cronbach alpha scores ($\alpha > .60$) from the reliability analyses conducted in the pilot study and, therefore, were deemed appropriate to be used for the data collection of this study (Van Griethuijsen et al., 2015).

4.3.2 Research Measurement

4.3.2.1 Cognitive Ability

CA was measured using the Cognitive Reflection Test (CRT), developed by Frederick (2005). The CRT is a three-item, short answer question (SAQ) format questionnaire with a reliability score ($\alpha = .63$) that measures an individual's specific ability to suppress intuitive and spontaneous responses that are incorrect (System 1 Process) and instead engages in further deliberation that leads to the correct answer (System 2 Process). Each question in the CRT has only one right answer. One point was assigned for each correct response and zero for each incorrect response.

4.3.2.2 Numeracy Skills

NS were measured using the Berlin Numeracy Test (BNT) developed by Cokely and colleagues (2012). The BNT is a four-item, short answer question (SAQ) format questionnaire with a reliability score (α = .64) that measures an individual's statistical numeracy and risk literacy collectively on a single scale. Statistical numeracy refers to the ability to understand and perform different statistical and probabilistic computations. On the other hand, risk literacy refers to the ability to interpret risks and rewards and make decisions according to risk evaluation. Each question in the BNT has only one correct answer. One point was assigned for each correct response and zero for each incorrect response.

4.3.2.3 Metacognitive Awareness

The Metacognitive Awareness Inventory (MAI) developed by Schraw and Dennison (1994) was used to measure MA. MAI is a 52-item questionnaire with a reliability score (α = .95) that measures the extent of an individual's awareness of their thinking process. This measure consists of eight subscales, i.e., declarative knowledge, procedural knowledge, conditional knowledge, planning, information management strategies, comprehension monitoring, debugging strategies and evaluation. The original questionnaire consisted of 52 true or false items. To represent participants' answers more accurately, the original MAI was revised to be rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), and a total score was computed for each participant.

4.3.2.4 Financial Literacy

For financial literacy, a questionnaire, i.e., the Financial Literacy Questionnaire (FLQ) developed based on questions adapted from the work of Lusardi and Mitchell (2007b), Lusardi (2008) and Lusardi and Mitchell (2005) was used to assess an individual's basic and advanced financial literacy level. This same set of questions has been tested in a previous study on

financial literacy in the Malaysian context (Boon et al., 2011). The financial literacy questionnaire had an internal consistency (α = .68). Specifically, 12 questions were asked, whereby five questions measured the level of basic financial literacy, such as numeracy (percentage), numeracy (division), time value of money, inflation, and compound interest. The remaining seven questions measured the level of advanced financial literacy, such as the function of stock market, knowledge of mutual funds, relationship between interest rates and bond prices, understanding risk, long-period returns, asset volatility and risk diversification. All items have three to five response options with only one correct answer and one 'do not know' response option. One point was assigned for each correct response and zero for each incorrect or 'do not know' response.

4.3.2.5 Psychological Well-Being

Psychological well-being was measured using the Brief Inventory of Thriving (BIT) (Su et al., 2014). BIT is a 10-item psychometric scale with a reliability score (α = .93) rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). This measure is designed to measure a wide range of individuals' psychological well-being constructs, represents a comprehensive view of positive functioning, and serves as a brief screening questionnaire for mental health. Facets of the BIT include meaning and purpose, optimism, life satisfaction, positive affect, self-worth, self-efficacy, accomplishment, flow, support and belonging. Past research by Wiese and colleagues (2018) provided evidence backing the use of BIT in cross-cultural settings, enabling comparisons of positive psychological health across different cultures. BIT has also been tested within Asian populations (e.g., Singapore, China) (Duan et al., 2016; Wiese et al., 2018). The present study aims to evaluate the applicability of BIT in the Malaysian context, with the intention of promoting its future utilisation in this setting.

4.3.3 Data Collection

This study obtained approval from the Monash University Human Research Ethics Committee (MUHREC) (Project ID: 27038, Review Reference: 2020-27038-52057) before commencing data collection. Quota sampling was used to gather the data. This sampling method was chosen as it allows for the selection of participants based on predetermined quotas for ethnicity to create a sample that is as representative as possible of the multi-ethnic society in Malaysia. Additionally, the quota sample enables comparison between ethnic groups across the five study variables (CA, NS, MA, financial literacy and psychological well-being). Quota sampling was also selected for a higher response rate to ensure sufficient participants in the final sample. Due to COVID-19 social restrictions (lockdown), online surveys were used for data collection. Considering that low response rates have been reported to be a challenge faced when using online surveys in past studies (Daikeler et al., 2020; Daikeler et al., 2021; Manfreda et al., 2008; Shih & Fan, 2008), and the mean response rates for online surveys were demonstrated to be even lower among studies that used random sampling methods (Wu et al., 2022), this study opted for a non-random sampling method instead, to yield a higher response rate. Furthermore, Wu and colleagues (2022) noted in their meta-analysis of 1071 online surveys that simply increasing the number of online surveys distributed did not produce a higher response rate. Instead, targeting a well-defined and specific population was found to have a positive effect on the response rate of online surveys. Therefore, the inclusion criteria for participant recruitment were clearly defined. The research sample comprised Malaysians aged 18 years and above and those residing in Klang Valley when the data was collected. During participant recruitment, individuals contacted online were screened through a series of preliminary questions, which included their age and place of residence, to ensure that the final sample fulfils the inclusion criteria of this study.

By conducting a G*Power 3.1 (Erdfelder et al., 1996) calculation with medium effect size = .15, power = .80, and alpha value = .05, a minimum of 77 participants was required. A sample of 350 participants, larger than the necessary number of participants, was recruited to represent the population better and provide more accurate results. To ensure that the final sample of this study resembles the distribution of ethnic groups in Malaysia, participant recruitment was guided by the ethnicity percentages from the Department of Statistics Malaysia (2020): Malay (69.6%, 244 participants), Chinese (22.6%, 79 participants), Indian (6.8%, 24 participants) and Other (1%, 3 participants). Three hundred fifty self-administered questionnaires were distributed online via social network platforms (i.e., LinkedIn, Facebook, and Instagram). Upon expressing willingness to participate in the survey, informed consent was obtained from participants in written form, followed by the presentation of brief instructions before they were directed to provide their responses to the questionnaires. Out of the 350 questionnaires distributed, 300 complete responses (85.7%) were obtained, which formed the final sample. The ethnicity distribution of the final sample is shown in Table 1. The entire duration of data collection was seven months and 30 days.

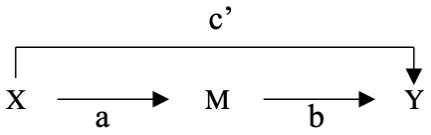
4.3.4 Empirical Strategy

Based on the research model, five hypotheses were proposed. To investigate the relationship between cognitive factors, i.e., CA, NS and MA with financial literacy (FL), the relationship between FL and psychological well-being (PWB), as well as the relationship between the cognitive factors with PWB mediated by FL, a four-step regression analysis of a mediation model proposed by (Baron & Kenny, 1986) was conducted using the Statistical Package for the Social Sciences (SPSS) version 27. The entire regression model is illustrated in Figure 3. Before conducting the regression analysis, assumptions were tested (i.e., normality,

linearity, and multicollinearity), in which the data fulfilled all the necessary assumptions of the analysis. The enter method was used for the variable selection process to form the final model.

Figure 3

Four-Step Regression Analysis Based on a Mediation Model

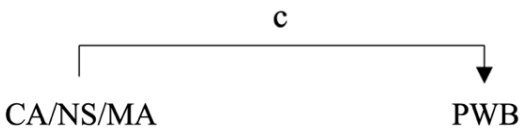


Note. X: Predictor, M: Mediator, Y: Criterion variable, a and b: Direct effect, c': Indirect effect.

For the first step, a multiple regression analysis between cognitive factors (CA, NS, MA) and PWB was conducted to test for the relationship labelled as *c,* i.e., $PWB = (b_1X) + a$, as shown in Figure 4.

Figure 4

Step 1 of Mediation Analysis to test for Path c



Note. c: Direct effect.

For the second step, a multiple regression analysis between cognitive factors (CA, NS, MA) and FL was conducted to test for the relationship labelled as *a,* i.e., $FL = (b_1X) + a$, as shown Figure 5.

This analysis also tested hypotheses 1 to 3 (H1, H2 and H3).

Figure 5

Step 2 of Mediation Analysis to test for Path a

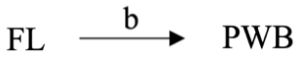
Note. a: Direct effect.

Next, for the third step, a simple linear regression analysis between FL and PWB was conducted to test for the relationship labelled as *b,* i.e., $PWB = (b_1 FL) + a$, as shown Figure 6.

This analysis also tested hypothesis 4 (H4).

Figure 6

Step 3 of Mediation Analysis to test for Path b

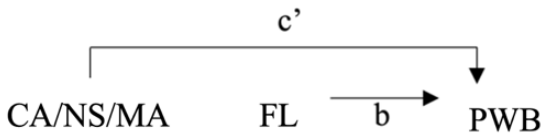


Note. b: Direct effect.

In the last step, a multiple regression analysis between cognitive factors (CA, NS, MA) and FL with PWB was conducted to test for the relationship labelled as c', i.e., $PWB = (b_1 CA) + (b_2 NS) + (b_3 MA) + (b_4 FL) + a$, as shown Figure 7.

Figure 7

Step 4 of Mediation Analysis to test for Path c'



Note. b: Direct effect, c': Indirect effect.

The first three steps checked for zero-order relationships between the variables, establishing the possibility for mediation analysis. In the fourth step, mediation is determined by the significance of the effect of the mediating variable, i.e., FL, represented by path b. If the effect of CA, NS, and MA on PWB becomes non-significant after FL is controlled, the result supports full mediation. Alternatively, if the effect of CA, NS, and MA on PWB remains significant after controlling FL, the result supports partial mediation.

4.4 Results

4.4.1 Descriptive Statistics

From the research sample, most participants fall below 36 years old (80.6%) and are employed (72.7%). There were an almost equal number of males (49.7%) and females (50.3%). In terms of ethnicity, the research sample consisted of 47% Malay, 34.3% Chinese, 11.3% Indian and 7.3% in the category of Other, which did not deviate far from the ethnicity distribution in Malaysia according to the Department of Statistics Malaysia (2020). For monthly income, most participants earn a range of MYR2500-5000 (38.7%), followed by less than MYR2500 (31.3%), MYR5001-10,000 (20%) and above MYR10,000 (10%). The descriptive statistics of the research sample are presented in Table 1.

Table 1

Demographic Characteristics of Participants

Demographic Characteristics	N	Percentage (%)
Age		
18-25	118	39.3
26-35	124	41.3
36-45	37	12.3
46-55	15	5.0
>55	6	2.0
Gender		
Male	149	49.7
Female	151	50.3
Ethnicity		
Malay	141	47.0
Chinese	103	34.3
Indian	34	11.3
Other	22	7.3
Employment		
Yes	218	72.7
No	82	27.3
Income		
<MYR2,500	94	31.3
MYR2,500-5,000	116	38.7
MYR5,001-10,000	60	20.0
>MYR10,000	30	10.0

Variables in this study (CA, NS, MA, FL and PWB) were also analysed using Analysis of Variance (ANOVA) for group differences within the demographic component. The results of the ANOVA are presented in Table 2. Firstly, the variables CA (p = .014), MA (p = .002), FL (p < .001), and PWB (p < .001) significantly varied across different age groups. Specifically, participants aged 45 and below obtained higher scores for these four variables than participants above 45, as evident in the mean values computed.

Next, ethnicity was a demographic factor for which the level of CA (p = .019) and MA (p = .023) significantly varied; however, no particular pattern was noted for the differences. When it comes to the demographic variables of gender, employment status and monthly income, all five study variables, i.e., CA, NS, MA, FL and PWB, did not differ significantly across the different subgroups (p > .05). Lastly, the ANOVA analysis showed that participants' NS did not differ significantly based on any subgroups of all demographic variables investigated, i.e., gender, age, ethnicity, employment status and monthly income (p > .05).

Table 2

Group Mean Differences of Study Variables across Demographic Components

Variable	Cognitive Ability		Numeracy Skills		Metacognitive Awareness		Financial Literacy		Psychological Well-Being	
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*
Gender										
Male	1.40	.07	2.02	1.34	199.54	.01	8.81	1.27	36.26	1.47
Female	1.25		1.77		200.33		8.66		37.12	
p		.797		.248		.905		.262		.226
Age										

18-25	1.36	3.19	2.00	1.25	202.66	4.47	8.82	10.52	37.38	7.89
26-35	1.48		1.90		199.27		9.08		37.15	
36-45	1.11		1.89		204.62		9.05		37.84	
46-55	.53		1.13		178.67		5.40		26.67	
>55	.83		1.67		184.67		6.17		31.67	
p		.014*		.292		.002**		<.001**		<.001**
Ethnicity										
Malay	1.22	3.36	1.94	2.60	202.50	3.22	8.39	2.31	36.65	.74
Chinese	1.60		2.00		195.52		9.18		36.94	
Indian	1.09		1.29		206.88		8.62		37.47	
Other	1.09		2.05		193.50		8.32		34.45	
p		.019*		. 053		.023*		.077		.529
Employ-ment										
Yes	1.36	3.31	1.92	1.68	199.33	.01	8.77	.00	36.78	.72
No	1.24		1.83		201.57		8.45		36.40	
p		.070		.195		.918		.997		.397
Income (MYR)										
<2500	1.16	1.24	1.77	1.34	198.36	.89	8.21	1.84	36.53	.22
2500-5000	1.44		2.03		202.43		8.84		37.06	
5001-10,000	1.30		1.82		196.92		8.88		36.60	
>10,000	1.47		1.93		201.30		9.17		35.83	

p	.296	.261	.445	.140	.884

Note. $*p < .05$, $**p < .01$

4.4.2 Cognitive Factors and Financial Literacy

Multiple regression was carried out to investigate whether a significant relationship exists between CA, NS and MA, respectively, with Malaysian adults' financial literacy. An alpha level of .05 was used for all statistical tests. The results of the regression (Table 3) showed that the model explained 26.5% of the variance and significantly predicted financial literacy $F(3, 296) = 35.58$, $p < .001$. All three cognitive factors were significant contributors to the model; CA (B = .69, $p < .05$), NS (B = .38, $p < .05$) and MA (B = .02, $p < .05$). The final relationship established was:

$$FL = 3.89 + (.69^{*}CA) + (.38^{*}NS) + (.02^{*}MA)$$

Table 3

Regression Analysis Summary for Cognitive Ability, Numeracy Skills and Metacognitive Awareness with Financial Literacy

	B	95% CI	β	t	*p*	*df*	*F*	*p*
Overall Model								
Regression						3	35.58	<.001
Residual						296		
Variable								
(Constant)	3.89	[1.88, 5.90]		3.80	<.05			
Cognitive Ability	.69	[.43, .95]	.32	5.31	<.05			
Numeracy Skills	.38	[.16, .59]	.21	3.44	.001			

Metacognitive Awareness	.02	[.01, .03]	.16	3.08	.002

Note. R^2_{adj} = .265 (N = 300, p < .001). CI = confidence interval for B.

4.4.3 Financial Literacy and Psychological Well-Being

Linear regression was conducted to investigate whether there is a significant relationship between financial literacy and Malaysian adults' psychological well-being. The regression results (Table 4) showed that the model explained 21.2% of the variance and significantly predicted psychological well-being $F(1, 298) = 80.34$, $p < .001$. Financial literacy contributed significantly to the model (B = 1.48, $p < .05$). The final relationship established was:

$$PWB = 23.85 + (1.48^{*}FL)$$

Table 4

Regression Analysis Summary for Financial Literacy and Psychological Well-Being

	B	95% CI	β	t	*p*	*df*	*F*	*p*
Overall Model								
Regression						1	80.34	< .001
Residual						298		
Variable								
(Constant)	23.85	[20.92, 26.77]		16.03	<.05			
Financial Literacy	1.48	[1.15, 1.80]	.46	8.96	<.05			

Note. R^2_{adj} = .212 (N = 300, p < .001). CI = confidence interval for B.

4.4.4 Mediating Role of Financial Literacy

In Model 1 of the mediation analysis using regression, the R^2 value of .23 showed that CA, NS and MA explained 23% variance in psychological well-being with $F(3, 296) = 28.74$, $p < .001$. The results demonstrated that CA (B = 1.19, $p < .05$), NS (B = .74, $p < .05$) and MA (B = .12, $p < .05$) have a significant and positive relationship with psychological well-being.

In Model 2, the R^2 value of .31 showed that CA, NS, MA and financial literacy explained 31% variance in psychological well-being with $F(4, 295) = 33.01$, $p < .001$. The results demonstrated that MA (B = .10, $p < .05$) and financial literacy (B = 1.08, $p < .05$) have a significant and positive relationship with psychological well-being. In contrast, CA (B = .45, $p > .05$) and NS (B = .33, $p > .05$) no longer have a significant and positive relationship with psychological well-being. The ΔR^2 value of .31 demonstrated a 31% change in variance of Model 1 and Model 2 with $\Delta F(4, 295) = 33.01$, $p < .001$. The regression weights reduced from Model 1 to Model 2 for CA (1.19 to .45) and NS (.74 to .33) and became non-significant, which shows full mediation. On the other hand, the regression weights slightly reduced from Model 1 to Model 2 for MA (.12 to .10) and remained significant, showing partial mediation. The result of the mediation analysis is shown in Table 5.

Table 5

Regression Analysis Summary for Mediation between Cognitive Factors and Psychological Well-Being by Financial Literacy

	B	95% CI	β	*p*	*df*	*F*	*p*	R^2	ΔR^2
Model 1								.23	.23*
Overall Model									
Regression					3	28.74	<.001		

Residual					296			
Variable								
Constant	10.75*	[4.13, 17.38]		.002				
Cognitive Ability	1.19*	[.35, 2.04]	.17*	.006				
Numeracy Skills	.74*	[.03, 1.44]	.13*	.042				
Metacognitive Awareness	.12*	[.08, .15]	.35*	<.05				
Model 2							.31	.31*
Overall Model								
Regression					4	33.01	<.001	
Residual					295			
Variable								
Constant	6.55	[.12, 12.97]		.046				
Cognitive Ability	.45	[-.39, 1.28]	.06	.293				
Numeracy Skills	.33	[-.35, 1.01]	.06	.343				
Metacognitive Awareness	.10	[.07, .13]	.30*	<.05				
Financial Literacy	1.08	[.73, 1.44]	.34*	<.05				

Note. ΔR^2 = Change in R^2, CI = confidence interval, *$p < .05$.

4.4.5 Summary of Results

From the multiple regression conducted between the cognitive factors and financial literacy, all three cognitive factors were shown to be positively related to financial literacy i.e., CA (B = .69, $p < .05$), NS (B = .38, $p < .05$) and MA (B = .02, $p < .05$), which supports the first three hypotheses (H1, H2, and H3). Following the regression analyses between the cognitive factors (CA, NS and MA) and financial literacy, the effect strength of each cognitive factor was also analysed by comparing their standardised coefficients beta. CA (β = .32) had the strongest relationship with financial literacy, followed by NS (β = .21) and MA (β = .16). Next, results from the linear regression between financial literacy and psychological well-being showed that financial literacy is positively related to psychological well-being (B = 1.48, $p < .05$), which supports the fourth hypothesis (H4). Lastly, from the mediation analysis, it was found that CA (B = .45, $p > .05$) and NS (B = .33, $p > .05$), respectively, no longer have a positive and significant relationship with psychological well-being after financial literacy was controlled, which demonstrated full mediation. On the other hand, the regression weight between MA and psychological well-being only slightly reduced and remained significant (B = .12 to .10, $p < .05$) after financial literacy was controlled, which demonstrated partial mediation. Both full and partial mediation results demonstrate the role of financial literacy as a mediator for the relationship between cognitive factors and psychological well-being, which supports the fifth hypothesis (H5).

4.5 Discussion (Study 1)

From the results, CA was found to have a positive and significant relationship with financial literacy, which means that as CA increases, so does financial literacy. This result supports the findings of previous studies that discovered similar positive effects of CA on financial literacy (Delavande et al., 2008; Lin & Bates, 2022; Muñoz-Murillo et al., 2020). The

positive relationship between CA and financial literacy is explained by the fact that higher CA reflects the use of System 2 Process (deliberative) over System 1 Process (intuitive) as stated by the dual-process decision-making model, which indicates appropriate thinking disposition (i.e., cognitive reflection) (Frederick, 2005; Shea & Frith, 2016). This form of thinking disposition helps one identify and inhibit intuitive errors during reasoning, accurately assess probability and risk during problem-solving and perform deliberate computations; which are fundamental abilities for acquiring financial knowledge and applying them effectively (i.e., financial literacy) (Macpherson & Stanovich, 2007).

Next, results from the multiple regression showed that NS are positively related to financial literacy, which means that as NS increase, financial literacy increases. The relationship established between NS and financial literacy aligns with the findings of previous research that investigated the role of numeracy in financial literacy and financial decision-making (Lusardi, 2012; Skagerlund et al., 2018). As financial literacy involves understanding financial concepts, the ability to perform mathematical operations and accurately interpret risks, NS are essential for developing these abilities (Liberali et al., 2012; Lusardi, 2012). This explanation is further supported by the fact that five of the twelve questions in the FLQ used to measure financial literacy required a good grasp of numbers, percentages and calculations. On the other hand, two questions required adequate understanding and evaluation of risk. In other words, NS are crucial for one to understand the computational mechanism underlying most if not all, financial decisions.

Another finding from this study is the significant and positive relationship between MA and financial literacy, which signifies that as MA increases, so does financial literacy. This study is one of the first few to empirically explore the relationship between MA and financial literacy, as existing literature has only proposed a conceptual connection between the two

variables (Antonietti et al., 2016). The result obtained supports the conceptual idea proposed by Antonietti and colleagues (2016), which suggested MA as a potentially beneficial approach to financial literacy as it helps one identify the most appropriate thinking mode to solve the problem at hand, therefore contributing to the effective application of one's financial knowledge for sound financial decisions. Next, although studies on MA and financial literacy have been primarily conceptual, the relationship established between the two variables aligns with the findings of previous studies that explored metacognition's role in general academic learning (Dinsmore et al., 2008; Jaleel, 2016; Schraw et al., 2006). The idea that metacognition helps one identify and utilise relevant learning strategies and self-regulate their learning behaviour, highlighted by these past studies, could be applied to MA's role in facilitating financial knowledge acquisition, contributing to financial literacy. Considering that a positive and significant relationship was established between MA and financial literacy in a real-world sample, the next step will be to design and test the efficacy of metacognitive training programmes in enhancing financial literacy.

Overall, the positive and significant relationships established between CA, NS and MA with financial literacy support the theory of human capital (Huston, 2010), emphasising the importance of enhancing human capital to improve financial literacy. Furthermore, as most intervention studies conducted to improve financial literacy have focused their investigations on the aspect of financial knowledge and demonstrated limited effectiveness in improving financial literacy and financial behaviour (Fernandes et al., 2014), the findings of this study provide novel insight into an alternative approach in the financial education setting that considers developing people's cognitive capabilities as equally or more important than content knowledge about financial matters. The approach of helping people enhance their cognitive capabilities is especially crucial and worthwhile considering the unsatisfactory CA and NS levels found from the descriptive statistics analysis of individual item scores for CRT and BNT

in this study; in which more than half of the participants failed to answer most questions correctly (refer to Tables A and B in Appendix H). The suboptimal levels of cognitive factors uncovered highlight the capabilities Malaysians either lack or require improvement, which may explain their struggle to conduct effective financial management and make sound financial decisions. Collectively, findings from the descriptive statistics analysis and the positive and significant relationship established between cognitive factors and financial literacy provide indications to policymakers and educators on areas that need attention and those to be targeted in future strategies to improve financial literacy among Malaysians. Specifically, educational efforts can be made by independently enhancing cognitive capabilities or including cognitive skills training as complementary components alongside financial information dissemination in financial literacy interventions.

From the linear regression analysis, a positive and significant relationship was found between financial literacy and psychological well-being. This means that as financial literacy increases, psychological well-being increases. The current study is a pioneer in exploring the link between financial literacy and psychological well-being (Horwood & Guo, 2021), as most existing research explored financial literacy in the context of financial well-being (Adam et al., 2017; Sabri & Falahati, 2012; Shim et al., 2009). The relationship established between financial literacy and psychological well-being, however, supports the findings of a similar past study that investigated the impact of financial capability on psychological well-being (Taylor et al., 2011). Specifically, the ability to manage and have control over one's finances was shown to be associated with higher levels of psychological health. In contrast, the lack of ability and control was associated with psychological costs. Drawing from past studies, the relationship between financial literacy and psychological well-being is explained by the fact that those who are financially literate are more likely to make appropriate retirement plans, protect themselves from falling prey to unscrupulous financial schemes, effectively allocate their resources to meet

their financial goals and feel more secure about their financial future; all of which contributes to improved psychological health (Anagol et al., 2017; Choi et al., 2010; Giné et al., 2017; Stein et al., 2013; Van Rooij et al., 2012). In sum, as financial decision-making is inevitable in our lives, effectively managing finances and having a high internal locus of control act as protective factors against mental distress and contribute to psychological well-being.

Descriptive statistics on financial literacy were also computed to gain an understanding of Malaysians' financial literacy levels. Findings (refer to Table C in Appendix H) revealed that Malaysian's level of financial literacy was rather unsettling, with at least 25% of Malaysians failing to correctly answer questions on basic financial literacy (i.e., numeracy (division), compound interest and time value of money). When it comes to advanced financial literacy, other than questions on the function of stock market and risk diversification, at least 10% and up to 19.3% of participants selected 'do not know' as their response for the majority of the questions on advanced financial literacy (i.e., knowledge of mutual funds, relationship between interest rates and bond prices, understanding risk, long-period returns and asset volatility) and at least 30% of participants provided incorrect responses to questions on long-period returns and the relationship between interest rates and bond prices. Altogether, these findings indicate weak knowledge and understanding of both levels of financial literacy. As financial literacy was shown to have a positive and significant relationship with psychological well-being, the suboptimal financial literacy level among Malaysians uncovered in this study suggests avenues for tackling the mental health issues in Malaysia, especially those arising from financial difficulties, i.e., by helping people become financially literate. Strategies aimed at enhancing financial literacy are likely to be beneficial through an all-encompassing approach that integrates various elements, such as a comprehensive understanding of financial concepts and products, practical knowledge application opportunities, and the cultivation of critical thinking and decision-making skills. By implementing these strategies, individuals can acquire

the necessary knowledge, skills, and confidence to make informed financial choices, thereby gaining better control over their financial lives. This, in turn, may contribute to reduced stress, minimisation of negative emotions, and overall improved psychological well-being.

The current study also explored the mediating role of financial literacy in the relationship between cognitive factors and psychological well-being. From the mediation analysis, financial literacy was found to fully mediate the relationship between CA and psychological well-being, and between NS and psychological well-being. After controlling the variable of financial literacy, the relationship between CA and psychological well-being, as well as between NS and psychological well-being, became non-significant. This suggests that most of the variation in psychological well-being is explained by financial literacy rather than by CA and NS. In other words, financial literacy is a stronger predictor of psychological well-being compared to CA and NS. Without financial literacy, the effects of CA and NS on psychological well-being, respectively, are minimal. The weak direct relationship between cognitive factors (i.e., CA and NS) and psychological well-being uncovered from the mediation analysis contradicts past studies that showed significant associations between higher cognitive capabilities and psychological well-being (Ali et al., 2013; Jokela, 2022; Llewellyn et al., 2008). However, this result supports several others (Gale et al., 2012; Ramírez-Luzuriaga et al., 2021), demonstrating a weak association between cognitive functions and psychological well-being. In these studies, other factors such as self-control, delayed gratification and personality were highlighted to explain the little connection between the two variables, similar to financial literacy's role in this study. Overall, the full mediation established in this study aligns with the fundamentals of the human capital theory by reinforcing the idea that enhancing human capital, which in this case refers to CA and NS, helps enhance psychological well-being through improving financial literacy (Huston, 2010). The full mediation results also shed new light on the need to exercise prudence in future applications of the human capital theory. This

involves factoring in an individual's level of financial literacy. Given that the relationship between CA and NS, respectively, with psychological well-being is significant only in the presence of financial literacy, and the fact that a positive and significant relationship is established between financial literacy and psychological well-being; individuals with higher levels of financial literacy may not need to rely on CA and NS to achieve better psychological well-being. On the contrary, improving CA and NS may benefit individuals with lower financial literacy as enhancing these two cognitive capabilities on top of improving financial literacy leads to a higher combined effect on psychological well-being. In sum, enhancing human capital to improve psychological well-being is deemed worthwhile only in cases where such efforts are applied among those with lower financial literacy levels. As for those with optimal financial literacy levels, the capacity to effectively acquire and utilise financial knowledge by itself is adequate to impact psychological well-being positively.

Another finding revealed from the mediation analysis was that financial literacy partially mediates the relationship between MA and psychological well-being. After controlling the variable of financial literacy, the relationship between MA and psychological well-being remained significant. This suggests that not only is there a significant relationship between financial literacy and psychological well-being but also a direct relationship between MA and psychological well-being. The partial mediation established signifies that financial literacy does not fully explain the relationship between MA and psychological well-being and that some other variables or mechanisms may be in play to explain the relationship between MA and psychological well-being. The direct relationship established between MA and psychological well-being aligns with past literature that described metacognitive skills as an ability that helps one resolve cognitive and performance-based tasks and overcome various problems in life with a higher rate of success, which promotes one's self-efficacy and life satisfaction, contributing to psychological well-being (Cera et al., 2013; Cikrikci & Odaci,

2016; Isgör, 2016). Additionally, the result supports past research findings highlighting metacognition as a protective factor against mental health problems and metacognition deficits as risk factors for mental disorders (Giugliano et al., 2022; Koç & Tanrıverdi, 2022; Weight & Bond, 2022). Essentially, metacognitive capabilities help increase awareness of negative and unhelpful thoughts as well as regulate attention towards positively reframing them (Weight & Bond, 2022). As MA increases one's likelihood of accomplishing positive outcomes in life and plays a protective role against mental health issues, this explains how, even without financial literacy as a mediator, MA directly affects psychological well-being. The partial mediation relationship established in this study proposes enhancing MA as a beneficial approach to improving financial literacy and psychological well-being, considering that MA demonstrated a positive and significant relationship with both variables. As metacognition encompasses a set of abilities that helps one understand the underlying cognitive processes and manage them to handle tasks, solve problems and regulate one's mental state (Semerari et al., 2003), these cognitive capabilities are expected to produce positive outcomes, not only in the aspect of financial management but also in overall mental health; the latter either with or without enhancing financial literacy. The widespread benefit of metacognition is advantageous as it provides policymakers and educators more flexibility in designing effective and cost-efficient interventions that incorporate metacognitive components to either independently or collectively improve financial literacy and psychological well-being (e.g., integrating metacognitive strategies into financial education curricula in schools, developing financial management tools that offer self-reflection features or including metacognitive training elements into existing mental health programs). Lastly, as financial literacy was shown to only partially explain the relationship between MA and psychological well-being, future research is encouraged to explore other variables that may explain the underlying mechanism for the relationship between MA and psychological well-being.

To sum it up, this study found positive and significant relationships between CA, NS, MA, respectively with financial literacy; and between financial literacy and psychological well-being. Additionally, the mediation analysis showed that financial literacy fully mediates the relationship between CA and psychological well-being and between NS and psychological well-being, while partially mediates the relationship between MA and psychological well-being. The relationship between cognitive factors and financial literacy established in this study suggests alternative approaches that can be considered in the effort to improve the effectiveness of current financial education primarily implemented to improve financial literacy, i.e., by independently enhancing cognitive capabilities or including cognitive skills training as complementary components to financial information dissemination in financial literacy interventions. Such approaches may also improve psychological well-being in the process, as supported by the relationship between financial literacy and psychological well-being and the mediation relationship established in this study. The relationship established between financial literacy and psychological well-being also provides endorsement for policymakers and organisations to enhance financial literacy in their initiatives to improve people's psychological health, especially when it is compromised due to financial difficulties. Next, the full mediation relationship demonstrated provides a deeper insight into future efforts embarking on the path of developing cognitive capabilities (CA and NS) to improve psychological well-being, which considers the approach worthwhile specifically for individuals with lower financial literacy levels. Lastly, the partial mediation relationship established highlights a direct relationship between MA and psychological well-being and between MA and financial literacy, therefore offering policymakers and educators greater flexibility when designing interventions to improve financial literacy and psychological well-being, i.e., by integrating metacognitive elements into their strategies.

4.6 Limitations and Recommendations for Future Research (Study 1)

Although the current study demonstrated significant relationships between the proposed variables and provided new insights for future financial literacy and psychological well-being interventions, this study had a few limitations. Firstly, although the research sample represented a diverse population, the pool of participants was still concentrated in the Klang Valley area. Therefore, the extent to which the data may vary in low literacy, income and employment rate areas is yet to be determined. This opens up opportunities for future studies investigating financial literacy and psychological well-being.

Another limitation of the current study is that while cognitive factors were shown to have significant and positive relationships with financial literacy and psychological well-being, there was insufficient capacity to address other non-cognitive factors that may affect financial literacy and psychological well-being. Hence, following the completion of the present study, a phenomenological study was conducted for an in-depth exploration and to establish an understanding of the other non-cognitive factors associated with poor financial literacy and psychological well-being among Malaysians.

Next, due to the COVID-19 pandemic constraints (i.e., lockdown, social distancing policies and people's concern for their safety), a pivot to an online data collection method of using electronic forms circulated through social network platforms, was deemed necessary. Therefore, the tendency to recruit more participants who were younger (below age 35) was inevitable as younger individuals are more likely to be technologically literate and users of these social network platforms.

Lastly, another component of the human capital theory, i.e., personal finance behaviour, was not explored in this study. As it may be a potential confounding variable affecting psychological well-being, it is recommended that future research consider including the

variable of financial behaviour as a control variable. Additionally, as CA, MA, FL and PWB were found to significantly varied across different age groups, controlling for the variable of age can be considered in future studies.

4.7 Conclusion (Study 1)

The objective of this study was to provide practical solutions to address the issue of ineffective financial education programmes, which are currently implemented to enhance financial literacy. As the lack of effectiveness of these programmes is often attributed to the failure to acknowledge and address the role of cognitive factors that impact learning and the practical application of financial information imparted, an investigation was conducted to identify the cognitive variables that can be targeted and strengthened in future interventions to improve financial literacy, and, ultimately, psychological well-being. The positive and significant relationships established between cognitive factors (CA, NS, MA) and financial literacy highlight a potential alternative approach in the financial education setting, which considers independently enhancing cognitive capabilities or developing these abilities alongside financial information dissemination as essential for future interventions to be effective in improving financial literacy. Additionally, the positive and significant relationship demonstrated between financial literacy and psychological well-being, and suboptimal financial literacy (basic and advanced levels) revealed in this study emphasised the importance of improving financial literacy to improve and protect Malaysians' psychological health. Lastly, the full mediating role that financial literacy plays in the relationship between CA and psychological well-being, as well as between NS and psychological well-being, provides insight for future financial literacy interventions aimed at improving people's psychological well-being. Specifically, to ensure efficient utilisation of resources, efforts to strengthen CA and NS to enhance psychological well-being are recommended among individuals with lower

levels of financial literacy. In contrast, enhancing CA and NS among individuals with higher financial literacy is considered unproductive as it might do little to nothing to improve their psychological well-being. Finally, the partial mediating role that financial literacy plays in the relationship between MA and psychological well-being opens up more avenues for enhancing financial literacy and psychological well-being through leveraging metacognitive components.

CHAPTER 5

PREFACE

To provide solutions to current ineffective financial education primarily implemented to improve financial literacy so that financial literacy and consequently people's psychological well-being, particularly those affected by financial hardships, can be enhanced, Study 1 was conducted to investigate the role of cognitive factors in relation to financial literacy and psychological well-being. This investigation stemmed from the postulation that cognitive capabilities may impact one's ability to acquire and apply financial information effectively; however, this connection is underexplored, particularly within the Malaysian context. From the study results, a significant relationship between cognitive factors (i.e., cognitive ability, numeracy skills, and metacognitive awareness), financial literacy and psychological well-being was demonstrated, which offers an alternative approach for future efforts: targeting these cognitive capabilities to empower individuals in effective financial management and improve financial outcomes, which contribute to psychological well-being.

While the findings from Study 1 are insightful for providing an avenue for future interventions to increase the likelihood of producing positive outcomes, nevertheless, as highlighted in the limitation section of Study 1, other factors beyond cognitive factors that may play equally important roles in affecting financial literacy and psychological well-being were not explored. These other variables are pertinent and should not be missed as they offer valuable information for policymakers, educators, financial organisations and mental health organisations to address any unmet needs of people suffering from financial difficulties and compromised mental health, design effective interventions and provide tailored support to those in need. The need for a more comprehensive exploration is further justified considering the limited depth of financial literacy literature in Malaysia, hinting at potentially overlooked

or yet-to-be-highlighted aspects that could significantly benefit the enhancement of strategies aiming to enhance both financial literacy and psychological well-being.

Hence, conducting a follow-up study becomes imperative to understand the multifaceted elements influencing the current state of suboptimal financial literacy. This chapter presents Study 2, which explored the lived experiences of Malaysians with poor financial literacy and psychological well-being using a phenomenological approach. The findings from this phenomenological exploration highlight key aspects to be focused on for future financial literacy efforts and mental health support to be practically beneficial, i.e., the factors that contribute to poor financial literacy, those that maintain the problem, the range and extent of financial and psychological problems arising from poor financial literacy, the help individuals with poor financial literacy seek, and protective factors that have made pursuing financial knowledge possible.

CHAPTER 5

STUDY 2

Lived Experiences of Individuals with Poor Financial Literacy and Psychological Well-Being in Malaysia: A Phenomenological Study

5.1 Introduction

As financial literacy research conducted in Malaysia up to this point lacks depth and has been primarily quantitative, a qualitative approach was proposed to thoroughly explore underlying or unforeseen factors not captured in past research to identify missing links in conceptualising the entire phenomenon of poor financial literacy. Qualitative methods of analysis, such as personal interviews, can reveal hidden dimensions associated with poor financial literacy from individuals' perspectives (Howitt & Cramer, 2010) that are not easily identified in quantitative research; for example, negative personal financial experiences that may discourage one from pursuing financial knowledge and skills. A qualitative approach is also crucial to avoid inefficient use of resources in developing and implementing interventions unlikely to address the poor financial literacy problem due to an incomplete understanding of all the factors involved. Additionally, considering that financial literacy is a significant factor that impacts psychological well-being, as demonstrated by the findings of the first study, it is essential to conduct an in-depth exploration of the personal experiences of individuals with poor financial acumen to obtain comprehensive information about the extent and severity of financial and psychological challenges faced. Such an investigation is beneficial to complement the results from initial surveys and empirical studies so that appropriate financial and mental health support can be provided to these individuals.

Hence, this study explored the lived experiences of individuals with poor financial literacy and psychological well-being using a phenomenological approach that has yet to be explored sufficiently in the Malaysian context. Similar to how Lusardi and colleagues (2009) obtained valuable insights by conducting interviews with their participants to identify the barriers to saving before proceeding to develop and implement a programme that successfully improved pension contribution rates, this study conducted an in-depth interview with the participants, specifically those who demonstrated poor levels of financial literacy and psychological well-being from the first study. Using this approach, the factors that explain poor financial literacy, the subjective experiences of individuals living with poor financial literacy and the impact of poor financial literacy on psychological well-being uncovered, shed light on the factors to be considered and those to be targeted by decision-makers of governmental and non-governmental organisations in future interventions to effectively improve the level of financial literacy and psychological well-being among Malaysians. On top of that, findings from this explorative study provided insights into measures that can be taken on the individual, interpersonal, community, organisational and public policy levels to equip oneself and others with resources and opportunities for acquiring financial knowledge and skills to make sound financial decisions that lead to financial and psychological well-being.

5.2 Theoretical Background, Prior Research and Research Questions

To explore the non-human capital factors of the Human Capital Theory (Huston, 2010), a framework was developed from the integration of the Theory of Planned Behaviour (TPB) by Ajzen (1991) and the Quality of Life (QoL) theory by Veenhoven (2000) to cover a broad range of factors associated with poor financial literacy. The incorporation of both theories was conducted as using a single theory would not be sufficient to describe the entire poor financial literacy phenomenon. Precisely, to obtain an in-depth understanding of the factors that explain

or contribute to poor financial literacy so that effective interventions to help people overcome problems faced in acquiring and applying financial knowledge and skills could be designed, this study referred to the TPB that explains human behavioural patterns and decisions (Ajzen, 1991). According to TPB, a behaviour carried out by an individual is determined by the intention that has been formed. Intention refers to the extent of a person's willingness to engage and the amount of effort they plan to put in to perform a specific behaviour, or in other words, one's motivation towards a particular behaviour. A person's intention is shaped by three independent factors: attitude, subjective norms and perceived behavioural control. The more positive the attitude, the more supportive the subjective norms and the greater the perceived behavioural control towards a particular behaviour, the stronger would be one's intention to perform it. With respect to this study, intention refers to the motivation to improve one's level of financial literacy, and TPB was applied to investigate and understand the deeper beliefs that influence an individual's intention to pursue financial literacy.

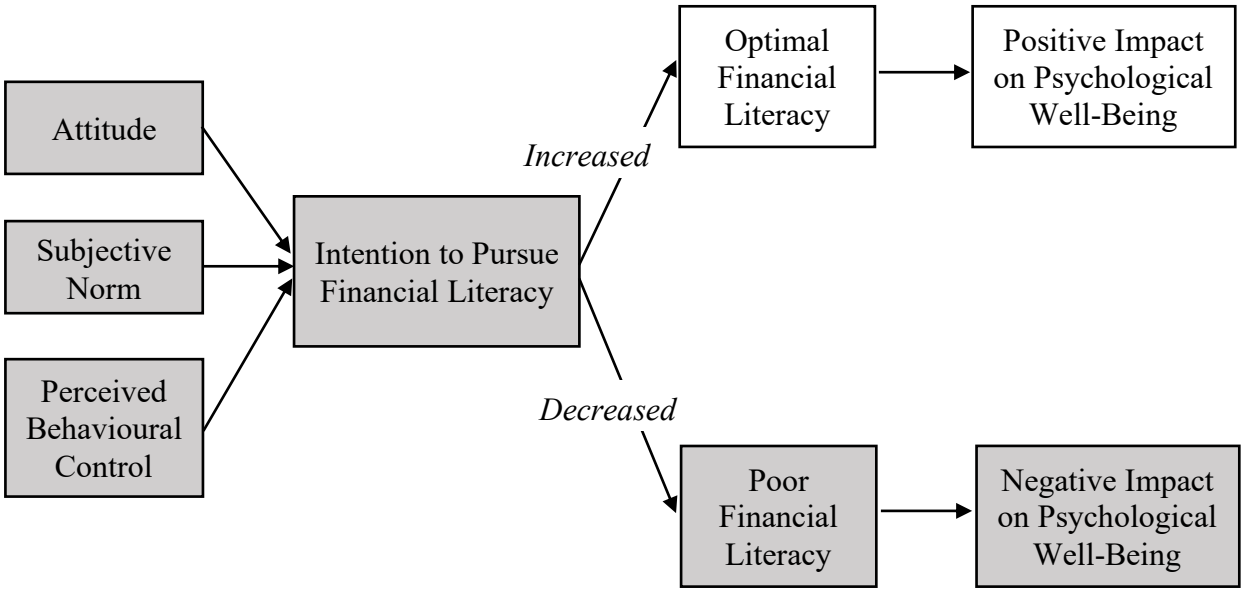
Next, the QoL theory (Veenhoven, 2000) was referred to guide the exploration of the impact of financial literacy on individuals' lives and well-being, with a focus on poor financial literacy levels. According to the QoL theory, quality of life is described by four components that are differentiated between two dimensions: between life chances and life results, and between external and internal qualities. Collectively, the combinations of the components represent four qualities of life, namely 'livability of environment' (external life chances), 'life-ability of a person (internal life chances), 'utility of life' (external life results) and 'appreciation of life' (internal life results). Life chances and life results are differentiated simply by the fact that life chances refer to opportunities or conditions that lead to certain outcomes (life results). On the other hand, between external and internal qualities, the first refers to the characteristics of the environment, and the latter refers to characteristics within an individual. In the context of this study, 'livability of environment' represents the level of living conditions. A good living

condition constitutes material welfare, which includes having good quality housing, clothing and food, being socially included and having respectable social status. In contrast, the opposite would mean deprivation and social exclusion. Next, the 'life-ability of a person' represents how well a person is equipped to handle the problems of life, which include capabilities and the acquisition of new skills for optimal living. Some examples of these capabilities and skills are financial literacy, intelligence, autonomy, self-efficacy, reality control and resilience. The lack of ability to cope with problems negatively affects mental health. Subsequently, 'utility of life' is defined as the usefulness of life that goes beyond an individual's life, often demonstrated through one's contributions, such as providing for one's family, friends and society. A higher utility of life contributes to the perception of life as virtuous, while a lower utility of life may lead to feelings of lacking honour or integrity. Lastly, 'appreciation of life' refers to how one feels about different aspects of one's life based on two sources of information, i.e., intuitive emotional appraisal and cognitively directed evaluation. Positive life appraisals lead to life satisfaction, happiness, and positive emotions, while negative life appraisals can develop into mental illnesses such as depression. With respect to this study, an individual's financial literacy level affects the capability for financial management and solving financial problems, representing the 'life-ability of a person', which impacts an individual's living condition. Next, financial capability and availability of resources have a role to play in shaping one's self-perception of usefulness (based on the ability to contribute) and the emotional and cognitive appraisal of one's life based on the satisfaction of different life areas. Altogether, the life chances and results from the financial perspective significantly impact an individual's well-being, particularly their psychological well-being. As the QoL theory effectively describes the link between financial literacy and psychological well-being based on plausible connections drawn among its four components, this theory was applied to facilitate an in-depth understanding of the mechanism behind poor psychological well-being that results from a lack

of financial literacy. The illustration of this study's (Study 2) conceptual framework is shown in Figure 8.

Figure 8

Conceptual Framework for the Exploration of Lived Experiences of Individuals with Poor Financial Literacy and Psychological Well-Being



Due to the preliminary nature of Malaysian financial literacy literature and the lack of depth in explaining the poor financial literacy phenomena, a review of international studies that investigated the factors related to financial literacy and the impact of lack of financial literacy was undertaken. In alignment with the theoretical frameworks employed in this study (TPB and QoL), these studies offer valuable insights that serve as a foundation for a more comprehensive exploratory study. Specifically, findings from these past researches illuminated the key areas of focus and relevant information to look out for that guided the process of developing the research questions and formulating the interview questions for this study. The studies discussed in the following sections exclude those that investigated demographic variables in relation to financial literacy. This is because studies of this nature have been

extensively undertaken within the Malaysian context, and their results have demonstrated limited explanatory power for the poor financial literacy and psychological well-being phenomena.

5.2.1 Factors Associated with Financial Literacy

Upon thorough examination, apart from demographic factors, most international studies described financial literacy through the perspective of psychological and social variables. In terms of the psychological variables that have been studied in relation to financial literacy, they mainly fall into two categories. The first form of psychological variable involves those that shape one's appraisal of financial literacy, otherwise known as attitude. These variables include interest in financial matters and perception of the importance of financial knowledge. The second form of psychological variable involves those that shape the perception of ease or difficulty in performing the behaviour of improving one's financial literacy level, otherwise known as perceived behavioural control. These variables include financial experience, self-efficacy and resource accessibility. On the other hand, the social variables that have been studied in relation to financial literacy constitute primarily those that shape one's belief of whether most people approve or disapprove of the behaviour of pursuing financial knowledge, otherwise known as subjective norms. These social variables include financial socialisation agents and stigma. Both psychological and social variables play a role in influencing the motivation to pursue financial literacy.

5.2.1.1 Attitude

TPB defines attitude as the extent to which one has a favourable or unfavourable appraisal of a particular behaviour that results from the perceived consequences of the behaviour and their evaluation of those consequences (Ajzen, 2020; Ajzen & Fishbein, 2005). Concerning the intention of pursuing financial literacy, one's interest in financial matters and

perception of the importance or benefits of financial literacy impact the attitude towards the behaviour. Findings from previous research are presented below to provide more context and support to the statement above.

Interest. A study by Caplinska and Ohotina (2019) found that a large portion of the study respondents possessed inadequate financial knowledge. Simultaneously, it was revealed that more than 20% of the respondents admitted not being interested in financial matters. Findings from this study highlight the possibility that poor financial literacy could result from a lack of interest and initiative in learning about financial matters rather than the lack of financial information. Several studies highlighted the relationship between a lack of interest in financial matters and poor financial literacy across different samples. A study by Monticone (2015) demonstrated that female respondents were less interested in finance-related topics and had lower levels of financial literacy compared to their male counterparts. Van Rooij and colleagues (2011) found that many employees demonstrated not only poor financial knowledge but also a significant lack of interest in financial matters, particularly pension matters. On the other hand, a large-scale study conducted among young people found that although these individuals often lack adequate financial knowledge and recognise the importance of financial literacy, they do not show much interest in financial topics due to unfamiliarity with financial terms and concepts (Luksander et al., 2014). Overall, there are valid reasons to believe that the lack of interest in financial matters could drive low intentions to pursue financial literacy.

Perception of Importance. Financial literacy is inherently characterised by an active inclination to acquire and utilise information, making it an information-seeking behaviour. In understanding the intention of information-seeking behaviours, the motivation behind the behaviour is influenced by one’s recognition of a knowledge gap and awareness of the negative consequences of the lack of knowledge and skills in one's life (Wallace et al., 2000). Such

awareness encourages knowledge acquisition to improve one's existing level of knowledge and fill the knowledge gap (Griffin et al., 2008; Kahlor, 2007; Marchionini, 1995; Yang et al., 2011). Based on this explanation, the awareness of one's suboptimal financial literacy level and the negative repercussions of a lack of financial literacy are essential factors that contribute to the perception of financial literacy as important and an increased intention to pursue financial literacy.

Several pieces of literature have also highlighted various cognitive and emotional variables that influence the perception towards financial literacy and whether or not an individual chooses to acquire financial knowledge and skills. A study by Lusardi, and colleagues (2010), for instance, found that individuals with present bias (those who heavily discount the future) are less willing to invest their resources in financial education, driven by their preference for immediate returns and the tendency to undervalue the benefits of financial literacy. This occurrence results in lower levels of financial literacy. In another study by De Beckker and colleagues (2020), a positive correlation was established between uncertainty avoidance and financial literacy. Risk-averse individuals tend to enhance their financial literacy and financial management skills to safeguard themselves against unforeseen financial challenges. Consequently, those more at ease with uncertainty may deprioritise financial education, resulting in comparatively lower financial literacy levels than their uncertainty-avoidant counterparts. Low financial satisfaction is another factor that has been suggested to affect one's tendency to pursue financial literacy. Contrary to some existing studies that regarded financial satisfaction as a consequence of financial literacy (Loibl & Hira 2005; Mezias 1994; Walker 1996), financial satisfaction, or rather financial dissatisfaction, was hypothesised to predict financial literacy. Financial difficulties and the negative impact on one's psychological well-being may lead to financial dissatisfaction, which drives one to develop financial literacy to improve their financial and psychological circumstances (Murphy,

2013). Other motivators for gaining financial knowledge and improving the level of financial literacy arise from positive attitudes about money, such as money as an emotional representation of worth (Engelberg & Sjöberg, 2006), for financial security (Burgess, 2005), a symbol of success and power (Barry, 2016), and for the maintenance of one's social status and contentment (Taneja, 2012).

5.2.1.2 Perceived Behavioural Control

Perceived behavioural control is the perceived ease or difficulty in performing a behaviour resulting from one's perception of the internal and external factors that may impede or facilitate the particular behaviour (Ajzen & Fishbein, 2005; Hapsari, 2021). The intention to carry out a specific behaviour increases when one is more confident, has more resources or control over their resources and perceives fewer anticipated obstacles. In the context of this study, several variables have been postulated to affect one's perceived behavioural control over the behaviour of pursuing financial literacy, which is discussed in the following section.

Financial Experience. It is common for people to make decisions based on past experience, and the same applies to financial matters. Specifically, one's past financial experience impacts the tendency to engage in present and future financial management behaviours (Ameliawati & Setiyani, 2018). A person with more financial experience would be able to distinguish what should be done and what to avoid, and they typically would have a good understanding of the type or extent of risk to take, therefore having a positive appraisal of financial management. On the contrary, a person who does not have much financial experience may perceive financial management and making financial decisions as challenging, which may hamper their motivation to participate further in financial activities or pursue financial education. Several studies (Johnson & Sherraden, 2007; Kotlikoff & Bernheim, 2001) provided support for the role of financial experience in affecting the pursuit of financial

knowledge and, ultimately, one's financial literacy level. In the latter two studies, individuals who receive allowances or own a bank account were found to be more financially savvy compared to their counterparts who lack these financial experiences. In sum, the opportunity to participate in financial activities and make financial decisions are drivers for the intention to improve the level of financial literacy as they increase confidence and perceived ease in financial management.

Self-Efficacy. Self-efficacy, which is the belief one has about their ability to achieve and succeed at a given task (Bandura, 1977), has been demonstrated by numerous studies to have a significant relationship with financial literacy (Forbes & Kara, 2010; Heckman & Grable, 2011; Meeus et al., 2011; Shim et al., 2013). The relationship is based on the fact that self-efficacy increases confidence and motivation, which is evident in findings of past studies that demonstrated an increased tendency to participate in financial activities such as owning financial assets (Farrell et al., 2016; Montford & Goldsmith, 2016), increased belief in the ability to make sound financial decisions and have good control of one's finances (Hadar et al., 2013) and increased tendency to actively respond to challenges (Kuhnen & Melzer, 2018). Self-efficacy may also improve one's confidence in information searching, which leads to proactiveness in regard to learning about financial matters instead of inaction or avoidance (Fernandes et al., 2014). Additionally, individuals with higher confidence and skills in financial management are more likely to identify and understand the benefits of financial management practices (Kidwell & Turrisi, 2004), which may increase the tendency to pursue financial literacy due to its perceived importance.

Besides confidence, self-efficacy also affects one's ability to cope with challenges. Those with higher self-efficacy are more likely to persevere through obstacles and failures in their journey of pursuing financial literacy as they possess the emotional resources which they

can draw upon in various phases of the financial management process compared to those with low self-efficacy (Baumeister et al., 2003; Neymotin, 2010; Sommer and Baumeister, 2002). Self-efficacy has also been highlighted as an essential factor that helps one initiate the process of personal finance management, often perceived as intimidating (Tang & Baker, 2016). In one study by Farrell and colleagues (2016), women with higher levels of self-efficacy were shown to have greater confidence in their financial capabilities, leading them to hold and engage in savings and investment products, ultimately contributing to improved financial literacy. Therefore, it is plausible to postulate that individuals with higher self-efficacy are more likely to be motivated to pursue financial literacy. In comparison, those with lower self-efficacy may be deterred from pursuing financial literacy due to lower confidence and ability to cope with challenges.

On the other end of the self-efficacy spectrum, there are some psychological states that, unfortunately, negatively affect one's perception of their financial management capabilities and ability to improve their financial literacy level. Examples of such states include feelings of hopelessness and depressed moods, which may lead one to believe that their financial goals are beyond achievable and, therefore, become unmotivated to improve their level of financial literacy (Murphy, 2013).

Resource Accessibility. Undeniably, there are aspects of pursuing financial literacy that are not entirely under volitional control, such as the accessibility to resources and opportunities. Despite progress in financial inclusion, gaps in financial access still exist, typically among women, younger and poorer individuals, and those unemployed (Demirgüç-Kunt et al., 2022). This is evident in the lower rate of account ownership among these populations compared to men and individuals who are older, with higher income and those who are employed (Demirgüç-Kunt et al., 2022). In reality, financial literacy and resource

accessibility mutually influence one another (Hasan et al., 2021). To improve one's financial literacy, one would need to be able to not only access but effectively select and utilise financial resources. However, to choose the right resources, one would need to have adequate financial literacy. Thus, those with poor financial literacy levels are trapped in a vicious cycle whereby they have limited opportunities to participate in financial activities and gain financial experience, which are fundamental for improving their financial literacy. The lack of opportunity to use a substantial range of financial products and participate in proper financial planning experienced by individuals with limited financial ability may also contribute to an overall negative view of financial matters, further discouraging them from pursuing financial literacy (Janor et al., 2016).

5.2.1.3 Subjective Norm

Subjective norm is defined as perceived social pressure that results from one's perception of others' expectations and the motivation to meet those expectations (Ajzen, 2020; Ajzen & Fishbein, 2005). As explained by Bandura (1986), observing others, imitating the behaviour of others similar to oneself, and the outcome of others' behaviour are essential interpersonal factors that affect learning, which impact individuals' intention to improve their financial literacy level by either encouraging or impeding the behaviour. Findings from previous research are presented below to provide more in-depth explanations.

Financial Socialization Agents. Past studies have shown that people acquire financial knowledge not only from financial educational networks but also through interactions with various socialisation agents such as family, peers, school and media (Hilgert et al., 2003; Mitchell et al., 2009). To understand the motivation for seeking financial literacy, it is essential to specify the influence and examine the role of different socialisation agents in shaping one's behaviour of pursuing and developing financial knowledge and skills.

Family. Numerous studies have shown that family, specifically parents, have the strongest influence on one's learning about financial matters (Albeerdy & Gharleghi, 2015; Clarke et al., 2005; Sabri, 2011; Shim et al., 2010). Starting from childhood, parents are the primary source of financial knowledge (Shim et al., 2010), therefore playing a vital role in developing financial knowledge and financial information-seeking behaviour through direct financial teaching and indirect financial behaviours. Direct financial teaching involves deliberate instruction on financial topics and the practice of financial decision-making. On the other hand, indirect financial behaviours involve observations and purposive modelling (Jorgensen & Savla, 2010; Peng et al., 2007). Observing parents' participation in day-to-day money management and financial information-seeking activities, as well as participating in financial discussions that take place in the family, helps instil the importance of money, highlight the risk of a lack of financial literacy and motivate young individuals to seek and have sufficient financial knowledge and skills (Angulo-Ruiz & Pergelova, 2015; Lusardi et al., 2010). In fact, a study by Pahlevan and colleagues (2020) found that parents' implicit financial behaviour had a stronger impact on young adults' financial information-seeking behaviour and financial literacy than financial teaching. Other than parents, the belief that other family members or relatives may have a better perception of them if they engage in financial information-seeking may also motivate young individuals to meet the expectations of these people, which promotes the intention of improving their financial literacy. On the other hand, some studies found that negative emotions and attitudes regarding money can be passed on from one family member to another (Allen et al., 2007).

Peers. Numerous past studies have highlighted the influence of peers as crucial in shaping one's financial literacy and behaviour (Kretschmer & Pike, 2010; Moore & Bowman, 2006; Yanto et al., 2021). Peers play a pivotal role in the acquisition of financial knowledge through collaborative problem-solving and sharing of learning resources (Yanto et al., 2021).

The role of peers in learning about financial matters also becomes significantly important over time. As a child grows older, family communication on financial matters gradually declines, and so does their influence on the child's financial literacy (Sohn et al., 2012). In contrast, communication with peers only increases, thus taking over the role of family as the strongest influence on one's financial knowledge acquisition process. Peers become the primary source of financial information and advice (van Rooij et al., 2011) and one's behaviours are strongly influenced by those of their peers, evident in the study of youth's gambling behaviour (Shim et al., 2010), retirement savings decisions (Duflo & Saez, 2003) and consumer behaviours (Lachance & Legault, 2007). The role of peers in influencing financial literacy levels has also been observed both among the young (Jamal et al., 2015; Maurer & Lee, 2011) as well as in the elderly population (Duflo & Saez, 2003). Based on findings of past studies, it is highly likely that by surrounding oneself with financially literate peers and peers who actively pursue financial knowledge skills, an individual might be more inclined to acquire financial knowledge and skills. On the contrary, if one is surrounded by peers who do not regard financial literacy as important and beneficial, they might likely be discouraged from pursuing financial literacy.

School. There are two prominent roles that schools play in financial education. Firstly, it provides one of the earliest exposures to financial matters and acts as the primary financial socialisation agent for those whose parents are not well-educated or lack financial sophistication (Mitchell et al., 2009). Thus, promoting the importance of financial literacy in schools will likely influence one to pursue financial education both within and beyond the school setting. Secondly, financial exposure in schools is considered a form of 'nonlinear exposure' for financial literacy, whereby early exposure to financial education contributes to the accumulation of financial knowledge later in life (Lusardi & Mitchell, 2017). The importance of financial literacy and awareness of resources for self-learning could potentially

be instilled in individuals through early financial exposure, which increases the likelihood of experiencing positive financial outcomes. This encourages further pursuits of financial knowledge and skills as well as active participation in financial decision-making, ultimately improving financial literacy. Therefore, it is plausible to postulate that individuals who receive financial education in schools might be encouraged to pursue financial literacy compared to their counterparts who did not receive such education.

Media. Today, globalisation and technology have changed how individuals manage their finances and learn about financial matters (Servon & Kaestner, 2008). Media has made it significantly easier to seek and exchange financial knowledge. For example, a study by Lyons and colleagues (2006) found that 33% of students use the Internet to acquire financial knowledge. Most study participants from a study by Sundarasen and colleagues (2016) also agreed that media is essential in creating awareness of financial planning. Since financial information has become widely accessible through media, self-directed financial learning could take place more easily (Yanto et al., 2021). Other than that, observing other people's active participation in learning about finance and improving their financial situation through social media may encourage one to be initiative in improving their own financial literacy. Therefore, having access to media might be a contributing factor to the behaviour of pursuing financial literacy. On the other hand, the lack of access might place one at a disadvantage in their pursuit of financial knowledge and the enhancement of their financial literacy.

Stigma. Other than financial socialisation agents, stigma could also be a potential influencing factor affecting one's intention to acquire financial knowledge and skills, specifically in preventing the behaviour. Just like how stigma impedes individuals who are eligible for welfare programmes from seeking out the assistance provided (Rainwater, 1982; Moffit, 1983), negative judgement by members of society regarding one's lack of financial

literacy or poor financial circumstances may discourage one from talking about finance, participating in financial activities or seeking financial help from family members, friends or financial professionals. The lack of financial experience combined with the fear of judgment may eventually lead one to cease most or all actions to improve their financial literacy level.

Overall, findings from international studies conducted to investigate the role of various psychological and social variables in affecting the intention to pursue financial literacy provide sufficient ground for exploring factors that influence Malaysians' financial literacy beyond demographic factors. To ensure that future interventions are effective in improving financial literacy by considering all the essential factors, the following research question was formulated to guide the detailed exploration of psychological and social factors that play a role in influencing Malaysians' financial literacy level:

Research Question

1) **What are the factors (psychological and social) that explain poor financial literacy among Malaysians?**

Specifically, the first research question was used to identify the factors throughout an individual's lifetime that have led to or contributed to the difficulty in acquiring adequate financial knowledge and skills, and effectively applying them to make sound financial decisions. Information obtained provides guidance on areas to be targeted for future interventions that seek to improve financial literacy.

5.2.2 Impact of Lack of Financial Literacy

Apart from exploring the factors contributing to financial literacy or the lack thereof, the focus of financial literacy research has revolved around examining the repercussions of inadequate financial knowledge. As previously outlined in Chapters 1 and 2, a substantial body

of international research has uncovered the adverse consequences of financial illiteracy. For the purpose of this study, a discussion of the impact of poor financial literacy documented by past international studies is conducted through the lens of the QoL theory in the following section to guide this explorative study while encouraging flexibility in discovering novel findings yet to be highlighted by previous financial literacy research. Specifically, the adverse effects of poor financial literacy were observed to fall under the following categories, i.e., impact on individuals' financial lives, other non-financial life areas and overall psychological well-being.

5.2.2.1 Impact on Financial Life

The impact of financial literacy level on one's financial life can be understood through the factor of 'life-ability of a person' and 'livability of environment', as described by the QoL theory (Veenhoven, 2000). Firstly, as a form of human capital (Huston, 2010), financial literacy is undoubtedly essential for solving financial problems and making sound financial decisions (life-ability of a person). Studies have shown that individuals with low levels of financial literacy are more likely to make financial mistakes and poor decisions, leading to difficulties in their financial lives (Agarwal et al., 2007; Duca & Kumar, 2014; Fox et al., 2005; Gerardi et al., 2013; Lusardi & Mitchell, 2007c; Mudzingiri et al., 2018; Sabri & Aw, 2019; Yong & Tan, 2017). These difficulties include but are not limited to the inability to select financial products wisely, high consumer debt, low savings rates, financial unpreparedness for post-retirement life, a tendency to default on risky mortgages, a higher likelihood of withdrawing from home equity, and an increased risk of bankruptcy.

Secondly, the lack of financial literacy also affects one's living conditions (livability of environment). Past research has shown that people with low incomes, who often possess low levels of financial literacy, face tremendous struggles to fulfil their basic living needs due to

the combined effect of a lack of financial knowledge and having limited resources (Collins et al. 2009). Additionally, in times of financial difficulties, economically disadvantaged individuals often reduce their spending on essential needs such as food, clothing, education, and healthcare (Sebstad & Cohen, 2003). The level of financial literacy has also been highlighted to represent a household's ability to take advantage of income opportunities, therefore impacting their current living situation (Wang et al., 2022). This is because a higher financial literacy level would typically mean that the household has higher tendencies for entrepreneurship and can utilise financial instruments more effectively, which increases market investment participation, both of which develop long-term human capital that helps generate sustainable income and improve one's living condition. In contrast, a lack of financial literacy signifies that the household has fewer resources and opportunities to improve its existing financial circumstances.

5.2.2.2 Impact on Personal Relationships, Job Performance and Social Life

The detrimental effects of ineffective financial management often spill over to other aspects of one's life, such as relationships (Poortman, 2005; Wolcott & Hughes, 1999), job performance (Garman et al., 1996; Luther et al., 1997) and social relationships (Payne, 2000) which also negatively impact the 'livability of environment', as described by the QoL theory (Veenhoven, 2000). Financial strain has been shown to negatively affect the quality of social relationships, represented by poor levels of social support and more negative interactions (Lincoln, 2007). To illustrate, living in poverty and relying on financial assistance can be stigmatised and discriminated against, leading to feelings of shame and embarrassment and, eventually, social isolation and exclusion (Davis & Hagen, 1996). Additionally, as mentioned by Sebstad and Cohen (2003), financial strain can compel individuals to make changes in their lives, such as delaying essential life events or withdrawing from social responsibilities, which

may lead to social exclusion. Apart from social struggles, financial problems have been shown to pose adverse effects on an individual's work life, evident in decreased work productivity, conflict with other colleagues, lack of work punctuality, absenteeism, and employee theft (Garman, 1997); all of which compromises job security and may negatively impact one's social standing.

Over time, the adverse consequences of financial hardships on various facets of life significantly influence individuals' overall life appraisal (appreciation of life). For instance, the Family Stress Model posits that the despair, resentment, and frustration experienced by spouses concerning their financial future, along with heightened stress due to daily financial challenges, can give rise to marital conflicts (Conger et al., 2002). These conflicts, in turn, may have an adverse impact on an individual's assessment of their personal relationships, eventually leading to an overall negative evaluation of one's life. Similarly, workplace problems and social exclusion can also contribute to an overall negative life appraisal.

5.2.2.3 Impact on Psychological Well-Being

The lack of financial literacy gives rise to financial problems, which affects psychological well-being in two ways. From one perspective, financial problems and financial strain experienced may pressure one to withdraw from various responsibilities ranging from marital, familial, social and societal, as highlighted by Sebstad and Cohen (2003), leading to lower perceived usefulness, or in other words, 'utility of life'. From another perspective, the suboptimal living conditions and negative evaluation of various life areas affect one's overall life appraisal, otherwise known as 'appreciation of life'. Based on these reasons, understandably, a lack of financial literacy leads to poor psychological well-being, as evident in numerous past studies. These studies highlighted increased feelings of hopelessness (Murphy, 2013), emotions of fear and anxiety (Tedeschi & Calhoun, 2004), depression (Peirce

et al., 1994; Turkington, 1985), lower sense of personal well-being and poorer self-esteem (Fox & Chancey, 1998), stemming from inadequate financial literacy and financial difficulties. As financial problems intensify, such as extreme indebtedness leading to eventual bankruptcy, the impact on psychological well-being becomes even more profound. This is evidenced by the heightened emotional experiences of failure, guilt, and shame, which may help account for the rising suicide rates observed over the years (Carey, 2012; Howarth, 2012; Singh, 2014). Lastly, it was noted that the impact of financial hardship was amplified among the elderly population, who inherently face a higher vulnerability to mental health issues (Drentea & Reynolds, 2012; Hatch, 2005).

Overall, the harmful consequences of a lack of financial literacy documented by international studies in alignment with the QoL theory provide a strong foundation for delving into the ramifications of inadequate financial literacy on various life areas and one's psychological well-being. Given that the majority of research on the impact of poor financial literacy has been conducted on a global scale, and Malaysian surveys and empirical studies are preliminary in nature, it becomes imperative to undertake a thorough examination of this subject matter within the Malaysian context. This approach is essential to facilitate the development of practical and beneficial support and resources to enhance the financial and psychological well-being of individuals struggling with poor financial literacy. Thus, the following research questions were formulated to facilitate the understanding of the nature and extent of challenges faced by Malaysians with poor financial literacy and psychological well-being:

Research Question

2) **What are the experiences of individuals living with poor financial literacy?**

The second research question was used to understand the subjective experiences of individuals with poor financial literacy, particularly from the perspective of their financial lives.

Research Question

3) **What is the impact of poor financial literacy on psychological well-being?**

The third research question was used to understand the mental and emotional processes individuals face as a result of: a lack of financial literacy, their present financial situations and the negative repercussions of financial problems in other non-financial life areas.

5.3 Methodology

5.3.1 Research Design

A qualitative study using the transcendental phenomenological approach was adopted to obtain an in-depth understanding of the lived experiences of individuals with poor financial literacy and psychological well-being. Phenomenology refers to the form of research method that aims to capture the fundamental nature of a phenomenon by examining it from the perspective of individuals who have encountered it (Teherani et al., 2015). Specifically, the transcendental phenomenological approach entails a method aimed at understanding and gathering data that illuminates the core of human experience while putting aside prejudgments as much as possible and using systematic procedures for data analysis (Moustakas, 1994). The objective of phenomenology is to describe the significance of this encounter, both in terms of the actual content of the experience and the manner in which it was undergone. This type of qualitative approach was selected as it allows for a detailed, unbiased view of the poor financial literacy phenomenon and provides the freedom to explore unforeseen elements while establishing a baseline investigation of target areas, i.e., factors that explain or contribute to poor financial literacy and the impact of lack of financial literacy. The interview method was

employed to obtain information to address the three research questions of this study. For data analysis, the process was guided by Braun and Clarke's (2006) framework for thematic analysis, which involved identifying patterns and common themes from qualitative data to provide a comprehensive explanation of the poor financial literacy and psychological well-being phenomenon among Malaysians.

The interviews were conducted online via Zoom in a semi-structured format using four open-ended questions to guide the interview process. Based on the answers provided by the interviewee, follow-up questions were asked to draw out more specific responses. The four open-ended questions were developed based on the review of past literature that pertained to the study's research questions. Once the interview questions were constructed, they were reviewed by the supervisory team to ensure appropriateness in terms of language, phrasing, and relevance.

The four finalised open-ended questions that were used in the interview are as follows:

1. What do you struggle with the most when it comes to your finances?

2. How has your struggle with your finances affected your psychological well-being?

3. If you look back at your life, what stopped you from having sufficient financial knowledge and skills?

4. What do you think can help you today to have better financial knowledge and skills to properly manage your finances?

The first question was used to obtain insight into the financial lives of individuals with poor financial literacy and addressed the second research question, i.e., ‘What are the experiences of individuals living with poor financial literacy?’. The second question was used to understand

the impact of poor financial literacy on individuals' psychological well-being and addressed the third research question, i.e., 'What is the impact of poor financial literacy on psychological well-being?'. The third question was used to identify the psychological and social factors that acted as barriers to financial literacy and addressed the first research question, i.e., 'What are the factors (psychological and social) that explain poor financial literacy among Malaysians?'. The fourth question was used to understand the support sought by individuals with poor financial literacy and also addressed the second research question two, i.e., 'What are the experiences of individuals living with poor financial literacy?'.

Before data collection, a pilot study was conducted to assess the appropriateness of the interview questions in seeking information for the context of this study, test the interview protocols and assess the overall feasibility of the study. Additionally, the pilot study allowed the researcher to strengthen the skills and experience in conducting in-depth, semi-structured interviews to ensure a seamless data collection process for the actual study. Participants selected for the pilot study shared the same characteristics as the actual study participants, as suggested by Hennink and colleagues (2020). Specifically, three participants who fulfilled the inclusion criteria of the study, i.e., age 18 and above and residing in Klang Valley at the time of data collection, obtained a score of seven and below on the FLQ and a score of 30 and below on the BIT in the first study and those willing to participate in a follow-up study, were recruited for a 20–25-minute online interview. The four open-ended questions were used to guide the interview process. Feedback was also collected at the end of the interview to obtain participants' comments regarding the overall understanding of the interview questions. Overall, feedback gathered from the pilot study revealed that participants did not face any issues understanding and providing answers to the interview questions. Once the pilot study was completed, the audio recorded was transformed into verbatim transcripts and then coded and analysed using the thematic analysis framework by Braun and Clarke (2006) to identify themes.

The preliminary themes obtained were deemed sufficient to address the study's research questions. Thus, the four open-ended questions tested in the pilot study were used for the data collection process of the full-scale study.

5.3.1.1 The Researcher's Role

As the researcher for this study, it was important for me to establish fairness and a non-judgemental point of view. Thus, to prevent my preconceptions and personal bias from influencing the research process, I utilised the method of bracketing, specifically through journaling, to document my experience relating to financial literacy and any assumptions I may have about people from diverse economic backgrounds. Gearing (2004) explains bracketing as a 'scientific process in which a researcher suspends or holds in abeyance his or her presuppositions, biases, assumptions, theories, or previous experiences to see and describe the phenomenon' (p. 1430). Using this method, I was able to have clarity regarding my thoughts and feelings regarding financial literacy, set aside my biases and assumptions, and prevent them from influencing the research, especially the data collection and analysis processes.

5.3.2 Data Collection

Ethics approval from the Monash University Human Research Ethics Committee (MUHREC) (Project ID: 27038, Review Reference: 2020-27038-52057) was obtained before the commencement of data collection. Participants were selected using purposive sampling based on the fulfilment of the study inclusion criteria, i.e., age 18 and above and residing in Klang Valley at the time of data collection, obtained a score of seven and below on the FLQ and a score of 30 and below on the BIT in the first study. Additionally, participants of this second study were chosen from those who had expressed their willingness to participate in a follow-up study. According to the review of empirical-based qualitative studies, the minimum

sample required for saturation ranges from nine to 17 (Hennink & Kaiser, 2022). Hence, a sample of 20 participants, which is larger than the necessary number of participants, was recruited to account for participation dropout. Following the computation of the FLQ and BIT scores, participants who fulfilled the inclusion criteria and expressed interest in participating in a follow-up study were contacted through their email addresses provided during the data collection of the first study. The eligible participants were briefed on the study's objective and the interview process, and their willingness to participate in the second study was confirmed. Upon receiving confirmation of their study participation, consent for audio recording of the interview was also obtained from participants, and the interview dates and times were subsequently scheduled. Informed consent for participation and demographic information were not collected at this phase as they had already been obtained from participants at the start of data collection for the first study. On the day of the interview, participants were given the opportunity to ask any questions they might have before the interview commenced. Each interview lasted approximately 20-25 minutes. At the end of the interview, participants were invited to provide additional information beyond those provided to address the questions asked. A short debriefing was conducted at the end of each interview session. Subsequently, audio recordings from the interview were transcribed to produce verbatim accounts to prepare for data analysis. Participant numbers were assigned to each participant to ensure anonymity during data analysis and reporting. The entire data collection process spanned six months and 20 days.

5.3.2.1 Participants

The sample of this study comprised eleven males and nine females, and their ages ranged from 21 to 57. The participants comprised ten Malays, six Chinese, two Indians and two in the Other category. Thirteen participants were employed at the time of the interview,

while seven were not in employment. Lastly, eight participants were earning income in the range of less than MYR2,500, five in the range of MYR2,500-5,000, four in the range of MYR5,001-10,000 and three in the range of more than MYR10,000. The demographic distribution of the final sample is shown in Table 6.

Table 6

Demographic Characteristics of Participants

Participant	Age	Gender	Ethnicity	Employment	Income Range (MYR)
1	30	F	Malay	Y	2,500 - 5,000
2	24	M	Malay	Y	5,001 – 10,000
3	21	M	Malay	Y	< 2,500
4	23	M	Malay	Y	< 2,500
5	21	M	Indian	Y	< 2,500
6	37	M	Chinese	Y	> 10,000
7	42	F	Other	Y	5,001 – 10,000
8	27	F	Chinese	N	2,500 - 5,000
9	31	F	Malay	Y	> 10,000
10	53	F	Other	N	5,001 – 10,000
11	21	M	Malay	N	2,500 - 5,000
12	30	M	Malay	Y	5,001 – 10,000
13	26	F	Malay	N	< 2,500
14	21	F	Chinese	Y	< 2,500
15	21	M	Malay	N	< 2,500
16	26	M	Chinese	Y	2,500 - 5,000

17	24	M	Malay	N	< 2,500
18	27	F	Chinese	Y	2,500 - 5,000
19	36	M	Indian	Y	> 10,000
20	57	F	Chinese	N	< 2,500

Notes. M = male, F = female, Y = yes, N = no.

5.3.3 Data Analysis

Thematic analysis, as outlined by Braun and Clarke (2006), was used in the data analysis process. This study employed a mix of deductive and inductive approaches to thematic analysis. The deductive approach was undertaken as a starting point whereby segments of data were coded in a manner that is relevant to or captures something interesting about the research question of this study. Additionally, using an inductive approach, interesting and profound data that emerged from the interview were also considered for an in-depth understanding of the poor financial literacy phenomenon. Using thematic analysis, common themes and patterns were identified from the verbatim transcripts. The first stage of the process was data familiarisation, which involved conducting and recording initial analytic observations about each data item and the entire data set. Next, preliminary coding of the data was undertaken to describe their content. Open coding was chosen for this process, whereby codes were developed and modified throughout the coding process instead of having pre-set codes. The process of coding and identifying themes was guided by Bree and Gallagher's (2016) method, which uses Microsoft Excel to facilitate the process of entering and organising the codes generated. To reduce potential human error, subjectivity and bias, two coders were included in the coding process for additional scrutiny and objectivity to ensure coding reliability (Kurasaki, 2000). Specifically, the coding team consisted of the primary researcher and another coder from a research and social sciences background. The process of coding was conducted independently

by each coder. Following that, online meetings were conducted to discuss the disagreements in coding and establish criteria for each theme. The coding system underwent several refinements before the final version was established. Next, patterns were identified from the codes created to form themes and sub-themes, which were compared and discussed between the two coders. A list of themes and sub-themes that were agreed upon was created. Following that, the process of reviewing and refining the themes that have been formed was conducted by returning to the data set to ensure no information was overlooked and that the themes generated were not too broad, applied to the context of the whole data set and had no overlap with one another. The final step involved defining and renaming the themes.

5.4 Findings

From the verbatim transcript of the 20 participants, 142 excerpts were extracted and analysed using thematic analysis according to the framework by Braun and Clarke (2006). Six themes were identified, with a total of 21 sub-themes. Re-evaluation of the themes developed across the 20 participants revealed that all themes were well represented to varying extents. The themes and sub-themes are presented in Table 7.

Table 7

Themes and Sub-Themes From Most to Least Represented

Themes	Frequency of Occurrence	Sub-Themes
Barriers to financial literacy	39	Lack of financial education in schools Lack of financial education in family Poor financial literacy in social circle

		Lack of interest
		Stigma surrounding money matters
Negative psychological experiences	29	Anxiety
		Stress
		Hopelessness
		Fear
		Remorse
Financial problems faced	26	Insufficient income
		Spending problems
		Debt problems
		Difficulty coping with inflation
Support and resources sought	21	Finance community
		Money management and investing guide
		Financial mentor
Perpetuating factors of poor financial literacy	18	Lack of financial knowledge
		Lack of discipline
Facilitators of financial literacy	9	Motivation to improve
		Learning about finance through social media
Total number of excerpts	142	

5.4.1 Theme One: Barriers to Financial Literacy

The most represented theme was barriers to financial literacy. All participants explained that there were factors experienced throughout their lives up to the point of the interview that hampered their pursuit of financial education. A common view among participants was that the lack of financial education and exposure from a young age prevented them from developing

positive financial behaviours and having sufficient financial knowledge and skills, essential to manage their finances efficiently as an adult.

Firstly, participants expressed that they faced a lack of financial education in schools. Most participants opined that they would have preferred receiving exposure to financial education starting from school age and that such exposure would have made the process of learning about financial matters easier.

"I don't want to sound like I'm blaming or condemning or anything, but in school, I didn't really get the saturated or deep financial literature that I wanted. I realised in university, they do teach you about stuff like this, like introduction to business, financial management…like at most the foundation. In school, I really didn't learn anything about it apart from maths and additional maths. I did question why I did not learn this before because I would much rather say that if I did learn about it, right now, I'd be doing something or more disciplined about it. So in a way, I think, I would say I prefer if schools start teaching us basic financial management." (Participant 5)

"I think maybe if I was younger and I've been exposed to a little bit of knowledge every day or like every once day or like a school had this programme, then it will be much easier for me to learn or to transition now because like now I feel like oh my gosh I know nothing at all and I have all these things thrown at me, I'm like I don't want any of it. Whereas back then, if I have like a little bit of knowledge and then now I just pick it up, it'll be a little bit better." (Participant 18)

Secondly, participants shared that they experienced a lack of financial education and interaction regarding financial matters in their families.

"When I was growing up, my family never talked about how to manage money and when I'm starting my college life, it's kind of like… this sum of money, and I said, omg it's a lot of money, and I start to think...my first year of college, oh I can use the money. At the end, where has all my money gone?' (Participant 13)

On the other hand, some indicated that the lack of financial education at home could be attributed to their parent's lack of financial literacy.

"Umm, I wouldn't say that my parents are a barrier, but they didn't…in their times, that's normal. In their time, if you study and get a job, you can live really well. But now that's not the case anymore. So, yeah. Well, I don't think they have to, but they could've. But in all honesty, I don't think they are the type to venture out into something different…business or different streams of income. They taught me what they knew best. So there's nothing really to blame." (Participant 2)

Next, participants also revealed that poor financial literacy in their social circle hampered their motivation to pursue financial education. Specifically, they were influenced by their peers and colleagues who were not financially literate and underplayed the importance of financial literacy.

"I was an ex-(company name) employee… so the social circle in (company name) is completely different from the social circle that I have outside (company name). Usually, the employees over there…they have it easier in terms of… the pay is a lot higher than the market. So, of course, they don't have so much of a financial worry, at least for most of them. So I would think that being in that bubble doesn't help me in exposing myself to different walks of life. I think that your social circle influences your financial decisions and your financial knowledge. Unfortunately, during that time, my social circle in (company name), most of them are not financially literate. It's only after I got out of (company name) that I got to build my financial

knowledge and, you know, be more aware of things that I spend on…that kind of thing." (Participant 6)

When it comes to personal struggle, several participants expressed a lack of interest in pursuing financial education, which prevented them from improving their financial literacy.

"I took accounting back in high school, and I didn't like it at all. I felt it to be…like boring, but now I understand that…I hope it's not too late, but I understand that it's very important, even the basics of cash in cash out, it's all very important." (Participant 15)

One participant opined that their lack of interest in pursuing financial education could be due to a lack of perceived importance towards financial literacy:

"I think whenever I pick up a book or listen to videos like investments and stuff, then I'll be like, I'll just like fall asleep…or to read about like bitcoin and how the system works and everything like, that really takes me a lot of energy to want to do that. Yeah, maybe because right now, I'm really not "desperate" to earn or to have a significant amount of money because what I have now is enough. So I'm much more interested in like doing other things like pursuing my passions and my purpose and stuff like that." (Participant 18)

Lastly, another personal struggle participants face is the stigma surrounding money matters. Several participants mentioned that they faced challenges in having money conversations with others, which impeded their ability to learn more about finance.

"…And also, yes, the culture in our country. Whenever you talk about money, people will be very sensitive about it, like it is a taboo. But I think it shouldn't be." (Participant 10)

Additionally, the stigma concerning seeking financial help discouraged some participants from accessing the resources and assistance that could help them solve their financial problems and improve their financial situation.

"I think another part when it comes to financial literacy…I think we have that AKPK thing right, which they help to gather all these…help you to reorganise your finances whatsoever…so I think there's also the stigma of getting this kind of help. At least for myself, in my head, if I do get that help, I'm already in big trouble. So, for me, it is actually not that easy to acknowledge that I'm having trouble. So instead of seeking help, I would just try to resolve it on my own instead of going to people for help." (Participant 9)

Overall, the lack of financial education from a young age, i.e., in schools and at home and poor financial literacy in social circles contributed to a limited understanding of the importance of financial literacy and fewer opportunities to learn about financial matters. Furthermore, the lack of interest and stigma surrounding money matters experienced by participants also serve as significant obstacles, hindering their motivation and efforts in seeking financial education. Collectively, these factors prevented participants from actively enhancing their financial knowledge and skills, resulting in suboptimal levels of financial literacy.

5.4.2 Theme Two: Negative Psychological Experiences

Although the type and severity of financial problems varied, all participants suffered negative implications on their psychological well-being due to the lack of financial literacy. One experience frequently expressed was anxiety; participants shared that they were often worried about not having enough money to sustain themselves.

"Anxious, I would say. Anxious because I don't know what's going to happen if I fall into the state of lack of money or no money. I just know that it's not good." (Participant 2)

"*For me, anxiety causes me to be over worried and obsessed about lack.. like oh my god, I can't pay this, I don't know what's going to happen! My mind overworks."* (Participant 7)

Some were concerned about the inability to sustain themselves in the case of unexpected events, such as job loss or the inability to pay for unplanned large expenses.

"Sometimes I will get anxious. So what if I lose my job… then I'll get anxious. Oh no, what should I do if I lose my job, I lose my current income, and I don't have the skills to get any other income? So basically, from that, I think I can completely say it gives me anxiety." (Participant 12)

"At the time when it was bad, back in December, it did cause me to have really big anxiety up to the point where I was thinking, what if in the future something similar were to happen again? Like maybe not in the case of a laptop but something else like medical bills or something."(Participant 1)

Other than anxiety, stress was common among participants as they were constantly pressured to find solutions for their financial problems that were impacting their livelihood. One participant shared that:

"When I was living off my savings during my unemployment, looking at it depreciate more and more, every week or every month, that really took a toll on my mental health. Because it really pushed me to feel desperate to find a job at that time. I was taking courses for particular classes. As I said, I had some family members that needed money at that time, so more and more, I felt like I needed a job as soon as possible."(Participant 4)

Several participants experienced hopelessness, whereby they felt demotivated and helpless as they struggled to find solutions to improve their financial situation.

"The struggle affects you holistically. It affects you physically, mentally and also spiritually because you believe in some higher spirituality, but it's not helping or guiding you." (Participant 3)

"Sometimes, when I try to find different income sources without sacrificing my time, I will spend a lot of time online looking for different methods. But sometimes I feel hopeless in a way. After the hopelessness, I will feel like I decided not to care because I'm avoidant. Like I know that I have issues that I need to solve, but I can't solve them, so I choose to avoid them by not thinking about them. Or I distract myself with something else." (Participant 10)

A number of participants suffered from persistent fear, particularly related to their perceived financial unpreparedness for potential future adversities.

"I have an apartment, and I want to pay it off. And I feel not settled in life because I'm already 42 this year. I feel like, what's going to happen to my future? How long will I get to work? What if something happens and my house is not being paid off? (Participant 7)

Lastly, due to a lack of financial literacy, participants expressed feelings of remorse over actions that they have done or failed to do. One participant shared that they resorted to actions that were against their personal values due to their financial struggles, which evoked feelings of guilt:

"Back then, I was so afraid of losing money…so yeah, I did like shoplifting. I mean, like, I never pay for my speeding tickets and stuff like that as well…so yeah, in a way, I committed a crime because of that, those mindsets… and then yeah… I guess it conflicts with that side of me that wants to do good."(Participant 18)

Other participants felt regretful for failing to commit to the financial plans that they had made to improve their financial situation and for having to rely on their families for financial support.

"When I cannot allocate money for saving, I start to think like, where have you spent more? Like maybe this month, I spent a lot of money, but I said to myself, where have you spent more without thinking about savings? So I criticise myself, and I start being harsh."(Participant 13)

"Because I'm spending my mum's money, I feel really bad. I have to be independent. I have to ...like, stop putting a burden on her financially. So I felt like I wasn't giving back enough to her for her to give me money." (Participant 18).

In sum, poor financial literacy led to various financial problems among participants, which negatively impacted their psychological well-being. The psychological difficulties experienced include anxiety and fear in relation to not having sufficient financial means for sustenance and a lack of financial preparedness for unforeseen events. On the other hand, participants faced stress and a sense of hopelessness when they struggled to find solutions to improve their current suboptimal financial circumstances. Some participants also grappled with remorse over actions that contradicted their personal values due to financial struggles, their inability to adhere to devised financial plans aimed at improving their financial situation and their reliance on families for financial aid.

5.4.3 Theme Three: Financial Problems Faced

The next most represented theme uncovered from the interview is the financial problems faced. A large number of participants face the problem of insufficient income. Precisely, participants expressed the struggle of having an adequate income that covers their expenses.

"I can see my money is going lower and lower, and maybe the salary will come in, will take another week maybe. So, I have to budget whatever is left for that month to stretch out into that whole week." (Participant 1)

"I guess I struggle the most is, having enough….or sustaining in the long term. I guess I could give an illustration, say, for example, in a typical month, I get employed, and I get paid my salary, right? I noticed that… let's say, bills, and groceries and all that stuff, right… I noticed there's always a very small amount that's left for like emergency fund. So, I don't think it's something I can control fully. But rather, the struggle is that it tends to not last the whole month." (Participant 5)

Several participants also expressed that the income earned was insufficient to pay for large and unaccounted expenses, which led to financial distress and having to withdraw from their investments to cover the expense.

"That sudden big spending on the laptop and having to pay such a big lump sum… and laptops these days are not cheap. They pretty much cost however much your salary is for the month. So, that was a very big spending, and actually, that is the biggest struggle I had in terms of my money most recently. Because when that happened… that was back in December when I had to buy a brand new laptop, I had to take out money from my savings, from the ASB savings, in order to purchase the laptop."(Participant 1)

Another financial problem that many participants faced was spending issues. A number of participants struggle with overspending, whereby their expenses often exceed their income.

"So basically, I have like a goal to save so much, but then there are unexpected expenses and everything… and all that comes into place. So, I've never been able to live within the budget. At the end of the day, I somehow overspend a little bit." (Participant 19)

Furthermore, some tend to spend unnecessarily and experience difficulty controlling the impulse to spend.

"When the latest stuff comes out, or there's something that's discounted, on offer…you don't want to get a sense of feeling FOMO, fear of missing out. So you know, you head to the store, and then you're enticed to continue to buy. So, I do feel like I am…I mean, I track my finances, so budgeting is very important to me. But I do fall into the trap of consumerism and buying stuff that I don't necessarily need at the time being." (Participant 15)

"I think because we have a lot of online platforms right now, so it's very… it's very tempting, you know…like you see all those things on discount and then oh, if it's on discount then you want to buy now, because then later it's (discount) not there anymore…it gets more expensive. So yeah, I think it's because, yeah,…a lot of external factors that affect the judgment…because of the online…it's so easily accessible to us right now… to buy anything. (Participant 16)

Several participants expressed having debt problems and facing difficulty paying their debts off. One participant, in particular, pointed out the impact of unmanageable debts on other aspects of their finances, such as savings and the ability to cover monthly expenses for basic needs:

"When I started my job, it was mostly paying off the debt for those credit cards. So I was not able to save. After a while, something got into my life. Suddenly, all this money that I needed to spend monthly was only to pay my credit card debts. So, at that point in time, I was really scared that I needed to pay all this debt, but at the same time, I had no savings whatsoever. So yeah, those were my struggles." (Participant 9)

Lastly, due to the recent COVID-19 pandemic and inflation that has taken place, some participants shared that they faced difficulty coping with inflation as their income stagnated, which led to significant financial distress.

"For the past few years, we were in a pandemic. So, for me, I'm quite lucky that I did not get any reduction in my pay. But I wouldn't say I'm very fortunate because I didn't get any increment in the past few years…which means that my income has been stagnant for a few years. To fight inflation, it's difficult. Currently, all the prices are going up…food prices are going up…so, uh, a big headache. So I think currently it's still not a big issue, but I think it will be if there's no… if the inflation doesn't stop. I don't think it will be fine. And also, because of the increment of other stuff, it may feel like my spending power is actually getting lesser and lesser. So as it gets less, I get more stressed out because I cannot afford what I want." (Participant 16)

All participants struggled to conduct effective financial management at varying degrees, which negatively affected their financial lives and contributed to livelihood challenges. The financial problems faced include insufficient income, spending problems, debt problems and difficulty coping with inflation. The extent of these financial problems varied among participants, with some encountering milder setbacks, such as struggling to achieve short-term financial goals of saving for non-essential purchases (e.g., a laptop). Others faced more severe financial predicaments, where initial difficulties cascaded into a series of issues. For instance, mismanagement of debts resulted in a significant portion of their income being channelled into repayments, eventually leading to an inability to cover basic needs. Overall, most financial problems stem from a lack of financial knowledge (e.g. increasing income, budgeting, debt management), while some are attributed to psychological factors (e.g. impulse control). The most challenging struggle highlighted by participants was poor financial security, whereby they struggled to financially protect themselves during economic changes and unprecedented events.

5.4.4 Theme Four: Support and Resources Sought

As a consequence of the financial problems faced and their impact on participants' psychological well-being, many openly shared the help they hope to receive to enhance their financial literacy level so that they can effectively manage their finances and improve their financial situation. Firstly, having a supportive finance community where people could learn from one another about financial matters was highlighted.

"I think for me, what's useful would be like working with people that have the same mindset as you. Again for illustration… I didn't have any friends who were into cryptocurrency, NFTs, or anything about investments or the market. It was zero. But then I started networking in university, talking to people in random crowds, and I realised that even though they are a small percentage of people who know about these, they are very literate about it. They are those people I learned from." (Participant 5)

Apart from financial knowledge sharing, participants also seek positive encouragement from others for their journey of pursuing financial education through these finance communities.

"So I figured out that if more people were to learn about it, we could encourage each other. Because till today, if I were to tell my friends, hey, you should learn more about cryptocurrency…the prices are low now, they would…some friends would just shut you off. They don't even want to listen. So I think a community really plays a role." (Participant 8)

Next, several participants expressed the desire for money management and investing guides to assist them in pursuing financial literacy. This need is underscored by the common challenge encountered in distinguishing accurate financial information from inaccurate ones.

(Money management guide) *"For me, a specific video or course. But it will have to be very short and precise on how to, like maybe…buy a car, what's the interest to buy a car, or there's*

a 442 method of buying a car. So for me, exposure to methods or specific buying or saving behaviour… that would help me a lot."(Participant 4)

(Investing guide) *"I would love to be exposed to like bigger workshops on investing…that would be great. Maybe I'm not looking in the right places, or maybe I don't have enough friends who are smart with finances and things like that…so that could be something that could be worked on. But it would be nice to have like…more exposure to these kinds of things."* (Participant 15)

Lastly, participants expressed that having a financial mentor or, in other words, an experienced individual who can provide specialised assistance would be beneficial in helping them acquire the financial knowledge and skills that apply to their unique financial situation:

" A more experienced person to kind of walk me through, like how he would've done it at my age, would've helped a lot."(Participant 4)

"I think a mentor would help. Someone with whom I can share my current financial situation, and then I can set my goal… and my mentor, he or she would guide me on how I can get there. Like in a way that's not too risky or takes too much out of me. I think a mentor would help." (Participant 2)

Overall, participants identified specific needs i.e., a finance community, money management and investing guide, as well as a financial mentor, that are considered essential for improving their financial literacy level. Unfortunately, they opined that these needs have not been sufficiently addressed, which serves as roadblocks to becoming financially literate. These demands if met, could make the pursuit of financial education more achievable and likely to produce positive outcomes on participant's financial capabilities.

5.4.5 Theme Five: Perpetuating Factors of Poor Financial Literacy

Upon further probing, participants highlighted several factors that they perceived had contributed to the challenge of overcoming their poor financial literacy level or, in some cases, exacerbated their current circumstances. One notable perpetuating factor was the lack of financial knowledge. Most participants opined that an inadequate understanding of different aspects of basic money management, such as budgeting and income generation, prevented them from engaging in financial management and improving their financial literacy level.

(Budgeting) *"I think twice about how I should spend my money, how I should budget my money… but then, I think about these things, but I don't really take action on it because I don't really know how to properly prepare for the future, financially."* (Participant 1)

(Income generation) *"I'm not brave enough to try different methods that are not conventional. Or maybe I'm just, erm…maybe I just don't know the methods to increase my income sources without trading my time away. For me, what I was brought up with… like graduating and then securing a good job, I think…that's the norm. So I don't know what is the …what other things I can do."* (Participant 10)

Besides knowledge of basic money management, some participants shared that the lack of investing knowledge prevented them from starting their investing journey; therefore, they missed the opportunity to improve their financial situation and enhance their financial literacy level.

"So I think my lack of knowledge on finding another source of income is scarce. I think I didn't venture into it. People keep talking about investing, and I always thought, what does it actually mean? There are so many things you can do to invest money, and I never really launch myself into it… which leaves me little to no exposure, which also equates to misunderstanding or no

understanding of how to actually grow your wealth by finding more sources of income."(Participant 2)

Apart from the lack of financial knowledge, another perpetuating factor of poor financial literacy highlighted among participants was the lack of discipline. Participants expressed the struggle of committing themselves to practise positive financial behaviours and conduct self-learning about financial matters.

"It's a struggle for me to create a budget or a plan because I've never been the type to do so. I've never been the type to follow a schedule or create a schedule and follow it. Other people can create a schedule, and I will follow it, but for me to create my own schedule and following it is not something I tend to do." (Participant 1)

"*But in truth, I actually have to put effort to learn something. And I never put in the effort enough. I was always like… I guess I was lacking that discipline."* (Participant 5)

In sum, certain factors perpetuated the issue of poor financial literacy, by posing challenges to participants in improving their suboptimal financial literacy levels. Specifically, these factors i.e., lack of financial knowledge and lack of discipline, hindered active participation in financial management and self-directed financial learning that could help participants improve their financial knowledge and skills.

5.4.6 Theme Six: Facilitators of Financial Literacy

The last theme uncovered from the analysis of participants' verbatim transcripts is the facilitators of financial literacy. Participants expressed that even though they faced difficulty managing their finances effectively, there were some factors that helped them conduct financial management to the extent of their current ability and pursue financial literacy. One of the factors that were mentioned is the motivation to improve. Some participants shared that they

reappraised their suboptimal financial situations in a positive manner, whereby they perceived the financial problems faced as driving factors to improve their financial knowledge and skills so that they could solve them.

" I would say the struggle, actually, motivates me in a way. Because I realised every time I'm struggling financially, I try to push myself to find a solution or like find what's a way to solve it. So I pick a new skill like web development, or like I pick up a book about how to invest. So, it teaches me how to improve on the situation, which is not easy, but it teaches me to find a way to improve it. Therefore, I motivate myself to find a new way."(Participant 5)

Several participants shared that they were able to learn about finance with the aid of social media. However, they were aware that financial information obtained through social media may not always be accurate. Nevertheless, this platform has made financial education easier and more accessible for them.

"When I look back…social media so far…has helped me in keeping up to speed in terms of financial literacy. While they are not the best…they might have their own opinions and their own ways…every social media influencer, especially in the financial space, they sort of have different kind of perspective for all levels."(Participant 6)

Some shared that social media has also helped instil awareness regarding financial literacy.

"So you know, when I see people on social media, you know, trying to create awareness…thanks to them, I've been getting into stocks and all that. So you read, and you learn a lot…even stocks. And now I've seen people as young as early 20s are getting into stocks, and I just got into stocks. So, I've been reading a lot, and there are many of them on social media. They actually helped me a lot."(Participant 19).

In short, despite the difficulties faced in conducting effective financial management due to their suboptimal financial knowledge and skills, participants highlighted the motivation to improve and learning about finance through social media as factors that made it easier for them to acquire financial knowledge and apply it in managing their finances to some degree.

5.5 Discussion (Study 2)

This study aimed to understand the lived experiences of individuals with poor financial literacy and psychological well-being, i.e., by obtaining insight into the factors that contributed to or led to poor financial literacy and the impact of a lack of financial literacy. With greater clarity of the poor financial literacy and psychological well-being phenomenon, future interventions that are effective in improving the level of financial literacy and psychological well-being, as well as practical assistance, can hopefully be provided to those in need. Overall, six themes were uncovered from the thematic analysis; five arose from the deductive approach, and one was an unexpected theme from the inductive approach of the analysis.

5.5.1 Research question: 1) What are the factors (psychological and social) that explain poor financial literacy among Malaysians?

Two themes, i.e., barriers to financial literacy and perpetuating factors of poor financial literacy, were identified from the thematic analysis and addressed the first research question.

5.5.1.1 Theme: Barriers to Financial Literacy

Upon further examination of the data, the following sub-themes were categorised under the main theme of barriers to financial literacy: lack of financial education in schools, lack of financial education in family, poor financial literacy in social circle, lack of interest and stigma surrounding money matters. Firstly, most participants expressed that, unfortunately, there was little to no exposure to financial education during their schooling years, which hampered their

pursuit of financial literacy. They opined that the process of learning about finances during their adult years would have been less taxing and overwhelming if they had been exposed to financial education in schools starting from childhood. Specifically, financial education in schools would help instil awareness regarding financial literacy and initiate early pursuit of financial education both within and beyond the school setting, providing more time and opportunity to build basic financial knowledge and skills that participants can refine as they age. Basically, the lack of early exposure to financial education contributed to the perceived difficulty in pursuing financial literacy, which decreased the intention of the behaviour. The sub-theme uncovered aligns with past research by Mitchell and colleagues (2009) and Lusardi and Mitchell (2017), which highlighted the vital role that schools play in providing one of the earliest exposures to financial matters and fostering the importance of financial literacy starting from a young age. Early financial education is described as imperative in setting the foundation for positive financial attitudes, inclination to pursue financial education and active engagement in financial management.

Next, many participants experienced a lack of financial education and opportunities to develop positive financial behaviours within their families starting from their childhood. Often, the lack of financial education at home was attributed to limited financial knowledge and lack of financial experience of participants' parents. Most were also discouraged by their parents from participating in financial management. On the other hand, a few participants mentioned picking up unhealthy financial attitudes and behaviours from their parents. Overall, the lack of direct financial teaching and unhealthy financial practices depicted by parents can undermine the importance of financial literacy, leading to reduced motivation among individuals to acquire and possess adequate knowledge and skills for effective financial management. These findings validate the findings of past studies that demonstrated parents and family as crucial influencing factors that affect individuals' intention to pursue financial literacy (Angulo-Ruiz

& Pergelova, 2015; Albeerdy & Gharleghi, 2015; Allen et al., 2007; Clarke et al., 2005; Jorgensen & Savla, 2010; Lusardi et al., 2010; Peng et al., 2007; Sabri, 2011; Shim et al., 2010).

Poor financial literacy in social circles also hampered participants' motivation to pursue financial education, which can be explained in two ways. From one perspective, the lack of regard for financial literacy in participants' social circles influenced them to undermine the importance of financial literacy. For example, several participants cited the significant influence of their peers on their unhealthy spending habits: *"During my university, I would just spend because I was with friends who would like to spend a little bit more than usual…than just enough to survive for that month."* (Participant 4). Alternatively, individuals who lack financial education within their family setting face additional hurdles when their friends and colleagues also lack financial literacy, as this eliminates yet another opportunity for them to learn about financial matters despite their desire to do so. The sub-theme uncovered aligns with past studies that highlighted the significant role peers play in influencing one's financial literacy and behaviour (Duflo & Saez, 2003; Kretschmer & Pike, 2010; Lachance & Legault, 2007; Moore & Bowman, 2006; Shim et al., 2010; Yanto et al., 2021).

Overall, the influence of parents, family, peers and school on individuals' motivation to pursue financial education and improve their financial literacy level that was revealed through the sub-themes in this study supports the role of subjective norms in affecting one's behavioural intention, as explained by TPB (Ajzen, 1991). Specifically, poor awareness of the role of financial literacy in financial management and the lack of perceived importance of financial literacy displayed by these socialisation agents contributed to decreased social pressure to pursue financial literacy among study participants. These findings, however, contradict a few past research (Sabri & Aw, 2019; Sohn et al., 2012) that minimised the significance of acquiring financial knowledge through family and peer interactions. According

to these researches, the development of financial literacy through family and peer interactions were considered to have certain drawbacks, such as their passive learning nature and the potential for incomplete or inaccurate information dissemination. Nevertheless, this study suggests that despite the proposed drawbacks, exposure to financial matters that occur through these informal settings serves as a beneficial starting point for developing positive financial attitudes, healthy financial habits and an awareness of the importance of financial literacy, which may facilitate individuals to conduct self-learning and improve in ability to discern accurate information from those that are not as financial experience increases. Thus, the benefits from these financial socialisation processes, i.e. family and peer interactions, outweigh the limitations.

Other than the lack of positive attitude regarding financial literacy by financial socialisation agents, another barrier participants face in pursuing financial literacy is the stigma surrounding money matters. As financial matters were regarded as a sensitive topic in their environment, participants expressed that they struggled to have money conversations with others, which deterred them from learning more about finance. This finding is novel, considering that most research to date has evaluated stigma in relation to financial help-seeking behaviours (Crichton, 2019; Holthaus, 2016). Based on the assumptions of the Communication Privacy Management Theory (CPM) (Petronio, 2002), people might feel conflicted about disclosing personal information, such as those concerning money, which leads them to develop rules for making their judgment of disclosure. One of the criteria used to make such a judgment is culture, which is formed by looking at the norm in society. The perception of money conversations as a cultural taboo is evident in the study interview, for example: "*...the culture in our country…whenever you talk about money, people will be very sensitive about it, like it is a taboo."* (Participant 10). This cultural taboo affects financial literacy as it discourages individuals from engaging in discussions about money due to the perception that it is a topic

that is off-limits. Consequently, it limits the opportunity to learn about financial matters from others who are more financially literate, thus hampering financial knowledge acquisition. Apart from difficulty having money conversations, the stigma surrounding financial help-seeking acted as a barrier to improving financial literacy. Some participants expressed that they avoided seeking financial assistance and resources due to fear of being judged for their financial situation. These findings corroborate those of past research (Moffit, 1983; Rainwater, 1982) that highlighted stigma as a factor that negatively impacted people's decision to take up assistance programmes that are made available to them. Overall, the sub-theme of stigma surrounding money matters as a barrier to pursuing financial literacy further supports the role of subjective norms in affecting behavioural intention, as explained by the TPB (Ajzen, 1991). In the case of this study, stigma contributed to a negative attitude towards financial literacy, which deters participants from engaging in actions that may help them improve their level of financial literacy.

Lastly, the lack of interest in financial matters was a personal struggle that was a barrier to acquiring financial knowledge and skills. Mainly, the lack of interest expressed by participants was attributed to the low perceived importance of financial literacy, which hampered their motivation to engage in financial learning. This sub-theme supports the results of past studies that found a correlation between a lack of interest in financial matters and inadequate financial knowledge (Caplinska & Ohotina, 2019; Luksander et al., 2014; Monticone, 2015; Van Rooij et al., 2011). Additionally, this finding aligns with the role of attitude in affecting the intention of behaviour, as explained by TPB (Ajzen, 1991). Precisely, an unfavourable attitude towards money and financial literacy dampened individuals' motivation to pursue financial education. The role of attitude in impacting the motivation to pursue financial literacy highlighted in this study also aligns with other past empirical studies. For example, Sohn and colleagues (2012) demonstrated that those who perceive money as a

reward for effort or something valuable that needs to be retained are more likely to actively seek financial knowledge compared to those who perceive money as something to be avoided or merely a symbol of achievement. Next, drawing from findings of past literature by Lusardi and colleagues (2010), one's time preference (present vs future bias) may also impact the willingness to invest time and effort to acquire financial knowledge and skills. A pattern of spending to fulfil immediate gratification was observed among a number of participants, which demonstrates the prioritisation of short-term (present bias) over long-term rewards (future bias). For example, *"When the latest stuff comes out or there's something that has discount or on offer, you don't want to get a sense of feeling of FOMO, fear of missing out, so you head to the store and then you're enticed to continue to buy* (Participant 15) and "*I think I tend to buy stuff that is not needed… I think because we have a lot of online platform right now so it's very tempting, like to see all those things on discount and then you want to buy now"* (Participant 16). In the same way, having to wait for their investment in financial knowledge to pay off may be unattractive to these participants, which explains the lack of interest in improving their financial literacy level.

5.5.1.2 Theme: Perpetuating Factors of Poor Financial Literacy

As for the theme of perpetuating factors of poor financial literacy, the sub-themes of lack of financial knowledge and lack of discipline were identified. These perpetuating factors were highlighted as obstacles to active participation in financial management and self-directed learning, making it challenging for study participants to overcome their current suboptimal financial literacy. Firstly, due to the lack of knowledge in basic money management (i.e., budgeting and income generation) and investing, participants often felt confused when faced with financial decisions and hesitant to take action for financial advancements due to a lack of understanding of risk: *"Maybe I'm not brave enough to try different methods that are not*

conventional. Or maybe I'm just erm…maybe I just don't know the methods to increase my income sources without trading my time away. Like for me, what I brought up with, like graduating and then securing a good job, I think that is the norm. So I don't know what is the …what other things I can do." (Participant 10). Additionally, the lack of adequate financial knowledge led to financial mistakes such as being over-insured: *"Right now, I think I'm quite over-insured because I'm taking up too many kinds of insurance. Sometimes, the bank would just call up to offer me insurance or whatever, and I just sign up without knowing whether it's needed or not."* (Participant 9*).* These struggles contributed to the perceived difficulty of financial management, which hampered study participants' motivation to engage further in financial management activities. The absence of active involvement in financial management hinders the development of financial literacy in two ways. Firstly, it deprives individuals of the opportunity to acquire new financial knowledge and practice existing ones. Secondly, the lack of financial experience negatively impacts individuals' confidence in their ability to become financially literate, which demotivates the behaviour itself. The vicious cycle of financial struggles expressed by the participants of this study aligns with those identified in other previous studies conducted among individuals with poor financial literacy, such as trouble selecting financial products wisely (Sabri & Aw, 2019), costly financial mistakes (Agarwal et al., 2007), poor investment decisions (Chu et al., 2017; Guiso & Jappelli, 2008), and lower tendency in stock market participation (Calamato, 2010; Van Rooij et al., 2011).

Apart from the lack of financial knowledge, many participants admitted that they lacked discipline when pursuing self-learning of financial matters and practising positive financial behaviour. This lack of discipline can be seen as a consequence of their limited financial experience, which contributes to poor financial knowledge and a lack of understanding regarding the importance of financial literacy. Consequently, their motivation to enhance their financial literacy level decreases. These findings align with prior research, such as the study by

Frijns and colleagues (2014), which demonstrated a causal relationship between financial experience and financial knowledge. Individuals with greater financial experience are more inclined to engage in self-learning and display a positive attitude towards financial education programmes, as they are motivated to become financially literate, and vice versa. Therefore, it is understandable that those with limited financial experience, such as the participants in this study, exhibited low motivation to improve their financial literacy level.

Together, the lack of financial knowledge and discipline decreased the intention of pursuing financial literacy due to the perceived difficulty of performing the behaviour, which supports the role of perceived behavioural control as explained by the TPB (Ajzen, 1991). Specifically, the perceived difficulty resulted from the lack of financial experience and poor confidence in one's ability to improve their financial knowledge. Additionally, one may also suffer from low self-efficacy due to past unsuccessful efforts during financial management and negative financial outcomes, which affect the ability to persevere through the challenges faced on the journey of pursuing financial literacy (Baumeister et al., 2003; Neymotin, 2010; Sommer and Baumeister, 2002). As a result, the individual may feel discouraged from engaging in behaviours to improve their financial literacy level and struggle to progress beyond their current circumstances.

5.5.2 Research question: 2) What are the experiences of individuals living with poor financial literacy?

Two themes were identified from the thematic analysis and addressed the second research question, i.e., financial problems faced, and support and resources sought.

5.5.2.1 Theme: Financial Problems Faced

All 20 participants struggled to effectively manage their finances, which negatively impacted their financial lives and contributed to livelihood challenges. The financial problems faced are evident through the sub-themes that emerged: insufficient income, spending problems, debt problems and difficulty coping with inflation, which affected participants in varied ways. Some encountered comparatively minor obstacles in pursuing short-term financial objectives, such as saving for non-essential items like a laptop. Others faced more severe financial difficulties that created a ripple effect of many other financial issues, for example, poor management of debts, which led to a large portion of one's income being used up for debt payments and an eventual inability to meet basic needs. Most financial problems result from a lack of financial knowledge and skills, such as those pertaining to increasing income, budgeting and debt management. On the other hand, some financial problems are attributed to psychological factors, such as impulse control issues. The most challenging struggle consistently highlighted by participants was poor financial security, whereby they struggled to protect themselves financially during economic changes and unprecedented events. Specifically, participants experienced difficulty sustaining themselves due to income stagnation and unemployment from the COVID-19 pandemic and decreased purchasing power from recent inflation.

The financial problems experienced by individuals with poor financial literacy uncovered from this study corroborate findings from previous studies that demonstrated the relationship between suboptimal financial literacy and unfavourable financial outcomes. In explaining the association between the two, a lack of financial literacy is often linked with cognitive flaws and poor emotional control (Mudzingiri et al., 2018), which leads to poor financial decisions and, eventually, financial problems as documented by numerous past studies (Agarwal et al., 2007; Duca & Kumar, 2014; Fox et al., 2005; Gerardi et al., 2013; Lusardi & Mitchell, 2007c; Mudzingiri et al., 2018; Sabri & Aw, 2019; Yong & Tan, 2017).

Similarly, findings from the interview revealed that the financial problems faced by individuals with poor financial literacy can be attributed to the lack of regard for financial literacy and money management, fear of pursuing activities that have the potential of increasing income or producing financial gains and spending as means for instant gratification; all of which encompass cognitive and emotional dimensions.

The theme of financial problems faced by individuals with poor financial literacy supports the concept of life chances (i.e., the life-ability of a person and the livability of environment), as described by the QoL theory (Veenhoven, 2000). Financial literacy affects the capability to effectively manage finances and solve financial problems (life-ability of a person). A lack of financial literacy leads to poor financial decisions and financial issues that are evident in the experiences of study participants. The financial problems eventually impact the living conditions of participants (livability of environment), as observed through participants' inability to fulfil basic needs. This circumstance occurred due to insufficient monetary resources and a lack of knowledge to effectively utilise the available resources and opportunities to improve one's financial situation. Furthermore, having insufficient financial resources may give rise to feelings of shame or embarrassment and lead to withdrawal from social activities. For example*: "I felt like I was very stingy when I go out to eat with my friends. So, I was like, oh, I don't want to go anymore and things like that."*(Participant 18). Over time, social withdrawal can progress to the point of social isolation, negatively affecting the livability of environment. Together, reduced life chances (life-ability of a person and livability of environment) that arose from the difficulty navigating through financial matters, deprivation from basic needs and social isolation decreased participants' likelihood of experiencing positive life results, which negatively impacted well-being.

5.5.2.2 Theme: Support and Resources Sought

In addition to existing financial resources and current financial education practices, participants highlighted several unmet needs and aspirations related to the support and resources considered necessary for improving their financial literacy. These unmet needs were portrayed as roadblocks to becoming financially literate. The support and resources sought are illustrated through three sub-themes, i.e., finance community, money management and investing guide and financial mentor. Firstly, several participants opined that they would like to be a part of a community that consists of people with similar interests in financial matters and those who desire to improve their financial literacy. Such a community is deemed to provide the benefits of a support system and facilitate the financial knowledge acquisition process through the exchange of financial information. This finding corroborates past studies highlighting higher success rates in financial education intervention conducted in groups that leveraged peer effects for learning and information distribution (Cai et al., 2015; Giné et al., 2013). Other participants seek reliable, practical and brief financial resources to help them acquire knowledge about money management and investing, especially since they face challenges discerning accurate financial information from inaccurate ones and applying complex ideas due to the lack of financial knowledge and experience. The call for brief and easily comprehended financial materials provides support to findings of past studies that demonstrated positive outcomes from simple and short-form methods of conveying financial information over long and complex ones (Drexler et al., 2014; Heinberg et al., 2014), presumably because the information derived from the first could be directly applied by individuals in their everyday financial management, compared to the latter.

Lastly, some participants expressed that they would like to receive assistance from individuals who are experienced and knowledgeable in the financial field; in other words, a

financial mentor. A financial mentor was deemed helpful for acquiring financial knowledge and skills that apply to participants' unique financial situations. The demand for tailored financial assistance expressed by participants addresses the limitations of existing financial education interventions highlighted by past research, i.e., the failure to consider the factor of individual differences (e.g., socioeconomic status and life-cycle stages) and the lack of well-customized "just in time" financial education that targets specific financial topics, offered at appropriate timings, (Fernandes et al., 2014; Lusardi & Mitchell, 2013). Incorporating these demands into current financial education interventions could potentially improve the effectiveness of these interventions in yielding positive outcomes due to higher relevance, increased attention and motivation to follow through, as well as a lower propensity for forgetting because one is likely to apply and practise the financial knowledge and skills learned within a short time of acquiring them.

The support and resources sought by participants in this study share one common thing: they would contribute to improved financial management capability (life-ability of a person) and enhanced financial situation and living conditions (livability of environment) that are both crucial for well-being, which provides support to the significance of life chances as described in the QoL theory by Veenhoven (2000). Due to the financial problems faced and the impact on livelihood, urgent demand was made by study participants for the assistance mentioned to help them build their ability to manage their finances effectively so that they can overcome these problems and improve their living situation. Hence, these demands should be seriously considered in interventions aimed at improving people's financial lives and well-being.

5.5.3 Research question: 3) What is the impact of poor financial literacy on psychological well-being?

5.5.3.1 Theme: Negative Psychological Experiences

The theme of negative psychological experiences addressed research question three. Poor financial literacy among participants contributed to various financial problems, as depicted through the theme of financial problems faced. Regardless of the type and severity of financial problems, all participants suffered negative implications on their psychological well-being. The psychological difficulties experienced were demonstrated through the sub-themes uncovered, i.e., anxiety, stress, fear, hopelessness, and remorse. Most participants felt apprehensive about the future, especially regarding their ability to sustain themselves and their family until the next paycheck, in cases of unaccounted large expenses or unexpected events like job loss. Additionally, participants expressed that they were frequently under pressure to resolve their financial problems as these problems affected their ability to fulfil financial obligations and family responsibilities and caused adverse effects on their psychological well-being. Several participants felt afraid as they anticipated that their living conditions would be severely impacted if they lost their current source of income due to their lack of financial acumen. Others were fearful that their financial problems might affect the lives of people around them. Next, the perpetuating cycle of insufficient financial knowledge and the challenge of selecting and utilising appropriate financial resources to enhance financial literacy that occurs due to a lack of financial understanding contributed to feelings of demotivation and hopelessness. Lastly, participants encountered varied feelings of guilt and regret either from an earlier behaviour or the failure to perform a behaviour. For example, one participant felt guilty for engaging in unlawful acts that were against their values due to their financial struggles: *"Back then, I was so afraid of losing money…so yeah, I did like shoplifting. I mean, like, I never pay for my speeding tickets and stuff like that as well…so yeah, in a way, I committed a crime because of that, those mindsets… and then yeah… I guess it conflicts with that side of me that wants to do good."*(Participant 18). On the other hand, several other participants experienced feelings of regret for not following through with previously established financial

plans: *"When I cannot allocate money for saving, I start to think like, where have you spent more? Like maybe this month, I spent a lot of money, but I said to myself, where have you spent more without thinking about savings? So I criticise myself, and I start being harsh."*(Participant 13), and some expressed a sense of guilt for placing financial burdens on their families, *"Because I'm spending my mum's money, I feel really bad. I have to be independent. I have to…like, stop putting a burden on her financially. So I felt like I wasn't giving back enough to her, for her to give me money."* (Participant 18). While some psychological effects were brief, most others were persistent and impaired individuals' overall mental health.

The negative implications of poor financial literacy on individuals' psychological well-being revealed from the interview validate findings of past studies that highlighted the psychological impact of poor financial literacy i.e. frequent worries (Brobeck, 2008; Shim et al., 2012), increased feelings of hopelessness and decreased motivation to improve one's financial situation and other depressive symptoms (Murphy, 2013; Peirce et al., 1994), fear and anxiety (Tedeschi & Calhoun, 2004) and overall lower sense of personal well-being (Fox & Chancey, 1998). One intriguing but regrettable finding was that older participants in this study were revealed to experience high stress and regret due to past suboptimal financial decisions. This finding coincides with past research (Drentea & Reynolds, 2012; Hatch, 2005), which has consistently demonstrated amplified adverse effects of financial difficulties on mental health among the older population. For example, Participant 20 stated, *"I think I just cannot be in peace. I go about my day doing my normal things, but then at the back of my mind, I keep thinking…do we have enough to spend on groceries, pay bills, pay loans and everything? Always thinking about not having enough money. Very stressful...It becomes tiring, you know…when you are always stressed,"* and*, "I think when you see other people able to live the life they want, you start to feel like, why can't I live like that? I have some things I want to do, like travelling, but I don't think I can do it now because of not having enough money. Now I*

can just hope that I have enough to just live comfortably until the end." Overall, the detrimental effects of poor financial literacy on people's psychological well-being across all ages are concerning, calling for significant attention and intervention.

The impact of poor financial literacy on psychological well-being also validates the concept of life results as described by the QoL theory (Veenhoven, 2000). Firstly, participants' lack of financial literacy hindered their capacity to fulfil familial obligations, which negatively affected the perceived usefulness, or in other words, the 'utility of life'. Lower 'utility of life' contributed to negative feelings that affect well-being, such as guilt and regret depicted in the paragraph above. Secondly, poor financial literacy led to financial problems, which negatively impacted not only one's financial life but also other life areas such as personal aspirations, familial relationships, and both physical and spiritual health. For example, one participant expressed discontentment regarding their inability to achieve their desired lifestyle as a result of their financial circumstances: *"When my colleagues are having the time of their life, maybe buy the car that they like, or maybe go for vacations that they've always dreamed of right, I choose for more economical or within my means… like instead of going for overseas brand car, I'll just settle for locally made car. Or instead of going on a vacation in the Europe region, I go for vacation in Malaysia or the Pacific region. So certainly, there is some change in the decision-making on where to spend my money on."* (Participant 6). The same participant also conveyed that their financial problems had caused tension and conflict within the relationship with their parents, *"Unfortunately, my parents were not well educated, and because their life experiences didn't develop them to be a financially savvy person, they made bad financial decisions, and so they sort of umm…roll over to my generation. So, the kids will have to bear the consequences of poor financial decisions. And, it takes a lot of effort to break that cycle."* (Participant 6). Another participant shared that the financial struggles negatively impacted their physical and spiritual health, *"I wasn't getting enough rest and sleeping on time. So that was*

it. The struggle affects you holistically. It affects you physically, mentally and also spiritually because you believe in some higher spirituality, but it's not helping or guiding you. So you just start pointing fingers everywhere. What am I doing wrong?" (Participant 3). Problems in various life aspects that occur as a direct or indirect consequence of poor financial literacy have unfavourable effects on one's appraisal of each domain, ultimately impacting the overall appreciation of life. Over time, the negative life appraisal compromises psychological well-being and can give rise to mental health issues.

5.5.4 Unexpected Theme and New Contribution to The Field

5.5.4.1 Theme: Facilitators of Financial Literacy

The inductive approach of thematic analysis led to the discovery of an unexpected theme, i.e., facilitators of financial literacy. Despite their suboptimal financial literacy levels, participants highlighted several factors that they perceived have made it possible or easier to acquire and apply financial knowledge in financial management to some degree. The facilitating factors were motivation to improve and learning about finance through social media. Firstly, some participants shared that their financial problems and current suboptimal financial situations were reappraised positively. Specifically, the awareness of a knowledge gap evoked the determination to improve their financial literacy. These experiences provide support to the concept of attitude, specifically favourable ones that positively impact the intention of pursuing financial literacy, as explained by TPB (Ajzen, 1991). A positive attitude is achieved through perceiving financial literacy as an important skill. Furthermore, this finding validates prior research assertions that acknowledging a knowledge deficit, having an awareness of the negative consequences stemming from inadequate financial literacy, and experiencing financial dissatisfaction can collectively act as driving forces for the pursuit of information-seeking behaviour (Griffin et al., 2008; Kahlor, 2007; Loibl & Hira 2005; Murphy,

2013; Wallace et al., 2000; Yang et al., 2011). In this context, information-seeking behaviour refers to actively acquiring and applying financial knowledge and skills.

Next, the participants also shared that social media helped create awareness about financial literacy and made learning about financial matters easier. Exposure to financial topics on social media served as a starting point for self-directed financial education and allowed participants to learn from others who are more financially literate. Nevertheless, participants were aware that information obtained through social media platforms may not always be accurate and, therefore, engage the social media content with discretion. Social media's contribution to promoting financial literacy corresponds to the TPB's concept of the subjective norm (Ajzen, 1991), wherein observing other users' engagement in financial education and financial management motivated individuals to adopt similar behaviours. This finding also supports the results of past studies that demonstrated the significant role of media in shaping financial literacy (Sohn et al., 2012; Sundarasen et al., 2016; Yanto et al., 2021). However, the positive impact of media on financial literacy identified in this study contradicts the assertion made by Sabri and Aw (2019) that highlighted the unidirectional and instructional methods of transmitting financial information through media as a limitation and suggested these approaches as a hindrance to real-life application of financial knowledge. While financial learning via media may lack an interactive, two-way element, this study underscores its value in increasing financial literacy awareness and acting as a financial education resource for individuals who may not have access to a conducive environment for acquiring financial knowledge or formal financial education. Other benefits of media include the promotion of proactive learning behaviours, which increases one’s exposure to more resources that may enhance financial knowledge and skills.

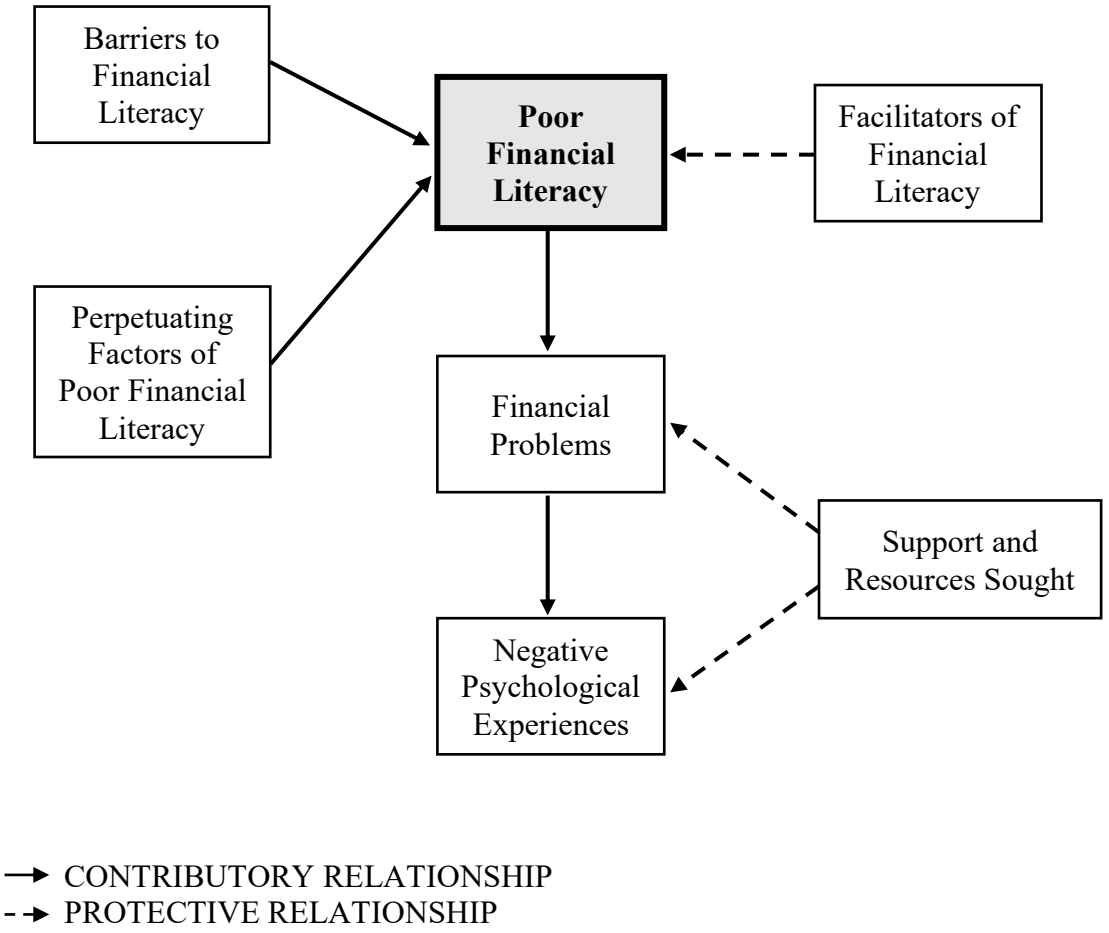
This study's identification of the facilitators of financial literacy is a noteworthy discovery, as it sheds light on the key factors that can help individuals with poor financial literacy acquire and apply financial knowledge, even in the presence of barriers in their lives. Essentially, the motivation to improve and acquisition of financial knowledge through social media are examples of agencies that strengthen psychological capital. Luthans and colleagues (2007) illustrated that psychological capital constitutes four psychological resources, i.e., hope, efficacy, resilience, and optimism. These psychological resources facilitate positive appraisal of a situation, determined action and perseverance, which increases the likelihood of success. In the case of participants in this study, those who were able to pursue financial literacy to a certain degree were able to do so, possibly because they possess and leverage their internal resources (e.g. determination, a clear purpose for improving financial literacy, positive reappraisal skills and the ability to overcome challenges) and external resources (e.g. supportive network that facilitates the learning process). Based on this theory, strengthening the internal and external resources may enhance psychological capital, represented as "a resource reservoir" (Hobfoll, 2002, p. 318), which boosts one's ability to navigate challenging goals successfully. Hence, apart from helping people improve their financial knowledge and skills, efforts to develop psychological capital are recommended to equip them with the resources to deal with the challenges that may arise during the process of financial knowledge acquisition and financial management, therefore increasing their chances of success.

Figure 9 illustrates the relationship between six key themes uncovered in this study. The barriers to financial literacy impeded the process of financial knowledge acquisition and application. Additionally, factors such as lack of financial knowledge and discipline perpetuated the problem by making it more challenging to improve financial literacy. The combined effect of barriers and perpetuating factors resulted in poor financial literacy, which led to financial problems in individuals' lives. These financial problems cause detrimental

effects on psychological well-being, as evidenced by participants' varying degrees of negative psychological experiences. On the other hand, the facilitators of financial literacy acted as protective factors, mitigating the adverse effects of barriers to financial literacy and perpetuating factors of poor financial literacy, enabling financial knowledge acquisition and application to a certain extent. Finally, the support and resources sought by individuals highlight unmet needs that must be addressed to alleviate or resolve financial and psychological problems associated with poor financial literacy.

Figure 9

Six Key Themes from the Exploration of Lived Experiences of Malaysians with Poor Financial Literacy and Psychological Well-Being



5.6 Implications (Study 2)

5.6.1 Theoretical Implications

To date, this study is one of the first to apply the Theory of Planned Behaviour (TPB) to explain the phenomena of poor financial literacy. Most studies have only used TPB to describe a range of financial behaviours such as saving, investment and borrowing intentions (Hapsari, 2021; Kennedy, 2013; Tanuwijaya & Setyawan, 2021; Widjaja et al., 2020). The themes uncovered, i.e. barriers to financial literacy, perpetuating factors of poor financial literacy and facilitators of financial literacy, provide support to TPB's concept of attitude, subjective norm and perceived behavioural control and validate the usefulness of this theory in explaining the mechanism behind the intention to pursue financial literacy. This study's findings support the use of TPB in future Malaysian and global studies intended to understand the occurrence of suboptimal financial literacy across different populations.

Next, the application of the Quality of Life Theory (QoL) to explain well-being from a financial perspective is a novel approach as most research utilised the theory in various social contexts, such as urban living (Okulicz-Kozaryn & Valente, 2019), culture (Liao et al., 2005) and politics (Pacek & Radcliff, 2008). The furthest extent of the utilisation of QoL in the context of finance can be observed in a Malaysian study that explored the relationship between financial wellness and quality of life (Aripin & Puteh, 2017). In the present study, financial literacy was found to influence the ability to conduct effective financial management (internal life chances), which contributed to financial problems that affect individuals' living conditions (external life chances). Collectively, these factors led to deprivation of basic needs and social isolation evident from participants' accounts, which negatively impacted psychological well-being. The absence of both life chances eventually compromised individuals' ability to fulfil family obligations (external life results). Additionally, the ripple effect of financial problems

on other life aspects results in negative life appraisal (internal life results), exacerbating the negative impacts on psychological well-being. Altogether, the role of life chances and life results in influencing psychological well-being from the financial domain perspective was clearly demonstrated, which supports the significance of these factors in affecting one's quality of life or well-being. The insightful findings obtained from adopting QoL in this study, therefore, encourage the utilisation of this theory in future studies for other life domains.

Lastly, this study emerged from integrating two theoretical frameworks, i.e., the TPB (Ajzen, 1991) and the QoL Theory (Veenhoven, 2000). TPB guided the exploration of factors that explain individuals' poor financial literacy levels. On the other hand, QoL facilitated understanding the impact of lack of financial literacy on individuals' lives and psychological well-being. The combination of the two theories enriched the findings of this study, whereby an in-depth understanding of the lived experiences of individuals with poor financial literacy and psychological well-being was obtained. Hence, the framework used in this study may serve as a guide and foundation for necessary modification in future research aimed at gaining a comprehensive understanding of similar phenomena.

5.6.2 Practical Implications

This study offers insight to individuals, parents and educators on key factors to consider in future approaches to improve financial literacy and psychological well-being. Firstly, on an individual level, the findings from this study highlight the importance of personal effort and initiative in pursuing financial education. As most participants expressed a lack of financial literacy in their homes, schools and social circles, a significant amount of the financial knowledge acquisition responsibility is placed upon the individual. Therefore, individuals who are proactive in conducting self-directed learning about financial matters would more likely benefit in terms of improving their financial acumen compared to those who are reactive.

Secondly, the role that parents play in the process of financial knowledge acquisition identified in this study calls for parents to equip themselves with sufficient financial knowledge and skills, especially considering that many participants highlighted their parents' lack of financial literacy. Such effort would enable parents to provide their children with appropriate financial education from a young age until college.

Next, the demand for brief and practical methods of conveying financial information uncovered in this study provides hints for educators to develop specific and just-in-time programmes that may increase people's likelihood of participating and following through due to higher perceived relevancy. For instance, implementing investment programmes for individuals entering the workforce is expected to yield favourable outcomes as the target audience can readily apply the knowledge soon after receiving it. Next, the sub-theme of lack of interest in financial matters that often stems from a poor understanding of the importance of financial literacy and existing bias towards financial matters underscores the crucial role that attitudinal factors play in influencing an individual's motivation to pursue financial literacy. This finding suggests that efforts to help people modify their perceptions or attitudes regarding money and financial literacy could potentially be beneficial in promoting financial knowledge-seeking behaviours. For example, educators may consider including attitudinal components such as the concept of money or emotional aspects of money in educational programmes, which has also been suggested by Xu and Zia (2012). Another pointer for educators in their effort to improve financial literacy is to assist individuals in building their financial experience. As evident in the theme of perpetuating factors of poor financial literacy, inadequate financial experience has been observed to be a significant factor in perpetuating the cycle of lack of knowledge and discipline, shaping the perception of improving financial literacy as difficult. Thus, employing experiential learning methods such as online games and simulations, which provide a protected learning environment without actual financial loss, holds great promise for

helping individuals acquire the necessary financial experience and ultimately bolster their financial literacy. Other benefits of experiential learning methods include their ability to more effectively garner and maintain learners' interest and motivation to pursue financial knowledge (Way, 2014), as well as the aspect of automation, which makes these approaches cost-effective. Lastly, as social media was found to facilitate the acquisition and exchange of financial information, educators could also teach learners ways to harness the benefits of these platforms to improve their level of financial literacy.

The findings of this study also propose several guidelines for policymakers, financial institutions and non-governmental organisations (NGOs) going forward. Firstly, the importance of financial education in schools for promoting financial literacy awareness and financial information-seeking behaviours highlighted in this study points to an area that requires the attention of policymakers. As the integration of financial education elements in primary and secondary schools' curricula has been implemented by the Ministry of Education Malaysia as one of the National Strategy for Financial Literacy (2019-2023) initiatives, a recommendation for policymakers would be to conduct regular evaluation and monitoring of the strategy to assess its effectiveness in producing the desired outcomes. Next, recognising the significant role parents play in an individual's acquisition and application of financial knowledge, offering tailored educational resources for parents would better prepare them to provide financial education to their children. Moving on, the demand for a finance community and financial mentor by study participants that emerged under the theme of support and resources sought highlight unmet needs that, if fulfilled, may significantly help participants overcome the challenges currently faced in becoming financially literate. These demands offer a new perspective of more customised approaches that can be implemented alongside financial education programmes to achieve the objective of helping individuals improve their financial literacy. One form of such approach is providing the option of personal coaching to those who

need it. Personal coaching has the advantage of teaching specific financial subjects that are highly applicable to an individual's unique financial situation and tailored to their level of financial literacy, as well as the ability to address personal biases and struggles, which encourages successful knowledge transfer and application. However, as highlighted by previous studies, personalised guidance can be resource-intensive (Willis, 2011). Hence, incorporating cost-effective strategies, such as leveraging technology and interpersonal interactions, could be beneficial in achieving the goal of providing personalised financial guidance while optimising resource allocation. Considering the subtheme of peers' role in affecting one's motivation to learn about financial matters that was uncovered, peer-to-peer counselling or mentor programmes are some examples of interventions that are not only more likely to produce successful outcomes due to more personalised help compared to large-scale financial education but are also time and cost-effective as they reach out to more people. Alternatively, using financial planning applications and software, and video conferencing for financial counselling may also offer customised financial guidance in a cost-effective manner. Additionally, the subthemes of demand for a finance community, the role of peers, and the stigma surrounding money matters uncovered collectively emphasise the need for community building to create a platform that facilitates information exchange and social support. This becomes particularly beneficial for individuals who lack a conducive environment for acquiring financial knowledge in their current life. Efforts as such could also help develop and maintain positive financial learning behaviours due to the concept of prosocial bias. Essentially, people are more willing to act when their behaviours are observable by others, in an interactive environment and when they share a certain group identity (Gerber et al., 2008). Another benefit of the finance community is that one's financial education journey can be significantly enriched by seeking guidance from peers who have faced similar challenges and effectively implemented innovative solutions. Finance-related support groups or online

communities may also allow individuals to connect with others experiencing similar financial challenges, providing an avenue for experience-sharing, emotional support and learning coping strategies.

Lastly, the negative psychological experience observed among individuals with poor financial literacy revealed in this study highlights the dire need for mental health support that can be addressed by financial institutions, NGOs and mental health organisations through targeted interventions. One approach is integrating mental health components into financial education programmes and counselling. This integration aims to develop individuals' psychological capital (Luthans et al., 2007), enabling them to effectively navigate challenges that may arise during their financial knowledge acquisition and management process. This can include teaching stress management and coping methods, and strategies for emotional well-being alongside financial skills. To ensure that financial advisors and counsellors are equipped to help individuals with poor financial literacy, it is essential that they are well aware and skilled regarding the psychological aspects related to finance so that they can address them sensitively and effectively (Alsemgeest, 2015). Hence, providing financial professionals with training and education on these aspects is essential. Next, a collaboration between financial institutions, NGOs, and mental health organisations could be established that involves allocating mental health professionals within financial institutions or providing joint services. This way, both financial and mental health needs can be addressed more effectively. Alternatively, financial service providers and mental health professionals could arrange a referral system to ensure that individuals receive appropriate mental health support when required. Another strategy for offering mental health support involves increasing the accessibility of mental health resources to individuals with financial difficulties. This can be achieved by providing online self-help tools, helplines, or affordable counselling options specifically catering to their needs that can be accessed at any time as opposed to time-sensitive

financial education or counselling programmes. Lastly, the impact of financial problems was amplified among older participants, who were found to suffer from intrusive negative thoughts and feelings due to their situation. This calls attention to a group of people who require specialised assistance. However, before any intervention can be implemented, more research is needed to fully understand the experience of this specific population and identify the factors in play.

5.7 Limitations, Delimitations and Recommendations (Study 2)

Although the current study brought to light valuable insights into the lived experiences of individuals with poor financial literacy and psychological well-being, there are several delimitations and limitations to this study, which will be presented in this section. Following the presentation of the limitations, recommendations for future research will also be provided. Firstly, a delimitation of this study is that the aspect of financial behaviour was not explored. Financial problems and poor psychological well-being could well arise from a disconnection between financial knowledge and the execution of such knowledge in the form of financial behaviours. Those with financial knowledge may struggle to convert the knowledge they have into actual practices for various reasons, which were intentionally unaddressed. To comprehensively understand the phenomena of poor financial literacy within the given time constraints, boundaries were set to focus on exploring the factors influencing the intention to acquire financial knowledge and the eventual outcomes of poor financial literacy. This approach ensured sufficient data could be gathered to effectively achieve the study's objective without compromising the depth of information. Therefore, the unexplored facet of financial behaviour in this study offers future research the opportunity to explore the interaction between financial literacy, financial behaviour and their outcomes.

This study also strictly recruited participants who exhibited both poor financial literacy and psychological well-being (i.e., a score of seven and below on the FLQ and a score of 30 and below on the BIT), thus narrowing the participant selection and emphasising this specific group for analysis. In other words, participants with a score of seven and below on the FLQ but a score above 30 on the BIT were excluded. This study deliberately focused on participants with suboptimal levels of both financial literacy and psychological well-being so that in-depth insights into the psychological implications of poor financial literacy could be obtained. Such insights are critical for designing and implementing interventions to solve the mental health problems in Malaysia arising from financial problems. Since this study focused on individuals with poor financial literacy and psychological well-being and successfully explored the adverse impact of financial literacy on psychological well-being, future research could conduct their investigations among individuals with poor financial literacy but high psychological well-being. Such investigations could potentially provide a deeper understanding of the protective mechanisms that explain the relationship between the two variables.

In terms of the study limitations, it's important to note that the sample was drawn exclusively from an urban area in the Klang Valley. Additionally, the study focused on understanding the issue of poor financial literacy through the lens of psychological and social factors, which led to brief investigations of economic and cultural factors such as income and ethnicity. While these factors were explored, there remains potential for a more comprehensive exploration of various economic and cultural factors that might impact financial literacy and psychological well-being. Past research has highlighted the influence of economic and cultural factors in affecting people’s motivation to improve their financial literacy. For example, Sohn and colleagues (2012) explained that traditional Korean values and the influence of Confucianism discourage individuals from money and materialistic pursuits. Additionally, these cultural factors may lead one to attribute less importance to financial matters compared

to other life aspects. On the other hand, it has been suggested that the financial behaviours of individuals experiencing poverty are influenced to a greater extent by circumstances beyond their control rather than those solely by their intentions (Bertrand et al., 2006). Therefore, improving the motivation to pursue financial literacy in these cases may only partially solve the problem of poor financial literacy, which calls for further research to investigate factors beyond psychological and social.

Lastly, the need for more positive-tone interview questions was another limitation of this study. Although the interview questions used in this study successfully generated rich qualitative data and managed to obtain positive responses from the participants (e.g. facilitators of financial literacy), incorporating more positive-tone questions would help improve the interview's neutrality. Hence, future studies referring to the current study are recommended to take a more neutral approach in gathering data.

5.8 Conclusion (Study 2)

This phenomenological study aimed to fill the gaps in the current Malaysian financial literacy literature by providing a comprehensive understanding of the lived experiences of individuals with poor financial literacy and psychological well-being. Studies conducted in Malaysia up to this point have primarily focused on exploring correlational relationships between commonly studied variables in financial literacy research and evaluating the effectiveness of specific financial interventions, which, although beneficial, limits our understanding of the broader aspects and valuable insights related to the phenomenon of poor financial literacy. The incomplete understanding of the phenomenon may well explain the lack of effectiveness of existing financial literacy interventions in improving financial literacy and psychological well-being, and the increase in the prevalence of financial difficulties and mental health problems in this country. Specifically, the study explored the psychological and social

factors that explain poor financial literacy, the experiences of individuals living with poor financial literacy and the impact of poor financial literacy on psychological well-being. Thematic analysis revealed six themes that depict the subjective experience of individuals living with poor financial literacy, i.e., barriers to financial literacy, perpetuating factors of poor financial literacy, financial problems faced, support and resources sought, negative psychological experiences and facilitators of financial literacy. The themes discovered highlight several blind spots and provide direction to various stakeholders, including individuals, educators, policymakers, and organisations such as financial institutions, mental health organisations, and NGOs, on the factors to be taken into consideration for financial literacy efforts and mental health support in the future aimed at improving financial literacy and psychological well-being. Finally, this study was conceptualised based on integrating two theories, i.e., the TPB and QoL theory, which led to insightful findings, providing support for using these theories in future research aimed at understanding similar phenomena. The adoption of TPB explained the mechanism underlying poor financial literacy by understanding the factors that affect the intention to pursue financial literacy. On the other hand, using QoL theory in this study allowed an in-depth understanding of the mechanism behind poor psychological well-being resulting from a lack of financial literacy.

CHAPTER 6

GENERAL DISCUSSION AND CONCLUSION

The growing complexity and accessibility to financial products and services, combined with the shift towards individual financial decision-making, highlight the crucial need for people to be financially literate so that they can conduct effective financial management and make wise financial choices. The consequences of a lack of financial literacy on people's lives and well-being are alarming, as evident in the vast array of severe financial problems, the rapid increase in financial stress over recent years and the spill-over effects of financial stress on other life areas that threaten psychological well-being. In light of the information derived from surveys and empirical studies regarding the extent of financial illiteracy in Malaysia, along with the consistent findings from international research highlighting the detrimental impact of inadequate financial literacy on financial and psychological health, it is imperative to prioritise efforts aimed at enhancing financial literacy to ensure financial and psychological well-being. Unfortunately, the current practice of implementing financial education to improve financial literacy and welfare-enhancing financial behaviours has been shown to be ineffective and resource-intensive, highlighting the urgent need for alternative strategies to enhance financial literacy. Past research has attributed the lack of effectiveness of financial education to the failure to recognise and address the role of cognitive factors that can hinder an individual's capacity to both learn and proficiently apply the financial knowledge provided. Furthermore, despite efforts by the government and private institutions to improve financial literacy, financial problems remain a pressing concern. The lack of positive outcomes from existing interventions could be attributed to the limited depth of Malaysian financial literacy literature, resulting in an incomplete understanding of the critical factors associated with poor financial literacy and psychological well-being, ultimately leading to a failure to address them.

Therefore, this research aims to offer solutions to current ineffective financial literacy interventions so that Malaysians' financial literacy and psychological well-being can be improved. The first study described in Chapter 4 was conducted to investigate the role of cognitive factors in affecting financial literacy and psychological well-being to provide an alternative approach that targets these cognitive factors to effectively improve financial literacy and psychological well-being. Next, the second study described in Chapter 5, explored the lived experiences of individuals with poor financial literacy and psychological well-being using a phenomenological approach to obtain a comprehensive understanding of the poor financial literacy phenomena and uncover information that was either overlooked or yet to be considered to guide future strategies for improving the financial literacy and psychological well-being of Malaysians.

6.1 Prospective Solutions to Current Ineffective Financial Education for Improving Financial Literacy and Psychological Well-Being

Findings from the two studies provide promising solutions to the current ineffective financial education implemented to improve financial literacy and psychological well-being. Firstly, an alternative approach targeting cognitive factors is proposed to be beneficial and potentially more promising in improving financial literacy and, ultimately, psychological well-being than merely imparting financial information. This is because such an approach focuses on enhancing the core competency of financial knowledge acquisitions and application, i.e., cognitive capabilities. Secondly, a comprehensive understanding derived from the phenomenological exploration of the factors that contribute to poor financial literacy, those that maintain the problem, the help individuals with poor financial literacy seek, and protective factors that have made pursuing financial knowledge possible fills the gap in our understanding of the poor financial literacy problem and allows the development of resources and assistance

that target the key factors that directly influence the intervention outcomes; therefore increasing the likelihood for positive changes in financial literacy. In addition, the repercussions of poor financial literacy on individuals' financial life and psychological well-being highlighted in this research provide insights on the range and extent of struggles that people with poor financial literacy face and therefore propose finance-related mental health initiatives as equally important to financial literacy interventions for protecting Malaysians' well-being.

6.2 Framework of Financial Literacy and Psychological Well-Being

Overall, the results of this research predominantly align with the conceptual framework formulated based on the adaptation of the Human Capital Theory specific to finance by Huston (2010). Specifically, the cognitive factors investigated in the first study (i.e., cognitive ability, numeracy skills and metacognitive awareness) exemplify the endowed human capital as proposed by this framework and were shown to affect financial literacy and, ultimately, psychological well-being based on the positive and significant relationships established between these variables. The explanation behind these associations is based on the fact that cognitive factors, acting as a type of human capital, enhance an individual's proficiency in acquiring and utilizing financial knowledge. This proficiency cultivates optimal financial literacy, pivotal for making sound financial decisions which is crucial in maintaining psychological well-being. Results from the first study, therefore, suggest directing future efforts towards cognitive capabilities, rather than solely emphasizing the impartation of financial information to effectively help people conduct financial management and resolve financial problems, which is beneficial for overall psychological health.

Based on the conceptual framework, other non-human capital factors such as culture, family, economic conditions, time preference, behavioural biases and many others were also proposed to affect financial literacy, which in turn impacts well-being. The second study

uncovered similar findings whereby non-cognitive factors, such as lack of financial education in the family, perceived unimportance of financial literacy and a lack of interest in the subject matter, were found to be barriers to financial literacy. However, cultural and economic factors were not addressed as the study focused its scope of investigation on psychological and social barriers to financial literacy. Apart from the initial hypothesised non-human capital factors, additional barriers to financial literacy surfaced, including a lack of financial education in schools, poor financial literacy in social circles and stigma surrounding money matters. Moreover, certain perpetuating factors, such as the lack of financial knowledge and discipline, placed individuals in a vicious cycle that maintained their suboptimal financial literacy levels. Collectively, these factors posed roadblocks to learning about financial matters, contributed to the perceived difficulty in pursuing financial education and hampered the motivation to improve one's financial literacy; which corroborates the non-human capital aspect of the conceptual framework in explaining poor financial literacy and psychological well-being.

Lastly, while the conceptual framework laid the groundwork for understanding the factors contributing to poor financial literacy, the second study, employing a phenomenological approach, delved deeper and uncovered information beyond the initial framework's scope. In particular, the impact of inadequate financial literacy on an individual's financial life and psychological well-being were illuminated. Additionally, factors that could assist those grappling with poor financial literacy, were also revealed. By merging these findings, a more comprehensive picture emerges, highlighting the multifaceted elements at play and those to be considered in future financial literacy and mental health initiatives aimed at helping Malaysians become financially literate, and improve their financial life and psychological well-being.

6.3 Overall Research Implications

From a theoretical perspective, the insightful findings obtained in this research were possible through the guidance of the human capital theory by Huston (2010). This provides validation for the usefulness of this theory in describing human capital from the perspective of finance and promotes future application in the context of understanding financial literacy and other associated variables. Next, the novel approach of combining the two theories, i.e., TPB (Ajzen, 1991) and QoL (Veenhoven, 2000), allowed for a thorough exploration of the lived experiences of individuals with poor financial literacy and psychological well-being. Considering that financial literacy is a form of human capital and the integration of both these theories provided explanations for its occurrence and consequence, this framework can guide future research studying the phenomena of similar or different forms of human capital.

From a practical perspective, the collective findings from both studies inform decision-making and provide directions for future research in various ways. Firstly, as cognitive factors are found to have significant associations with financial literacy and psychological well-being, interventions designed to enhance these factors can be implemented to help people acquire and apply their financial knowledge effectively, resulting in positive financial outcomes and improved psychological well-being. These interventions may involve independent strategies to enhance cognitive capabilities or integrate cognitive skills training alongside disseminating financial information. Moreover, the positive and significant relationships established among the three cognitive factors, financial literacy and psychological well-being, open avenues for further research into other cognitive variables associated with financial literacy and psychological well-being.

Secondly, findings from the phenomenological study provide directions to various stakeholders on the key aspects to be focused on in financial literacy efforts in the future and

the practical steps that can be taken to improve financial literacy and psychological well-being. For individuals and parents, the themes identified in this study highlight the importance of proactivity in developing financial knowledge-seeking behaviours, i.e., by conducting self-directed learning of financial matters and providing financial education to children from a young age. As for educators, it is essential to take a practical approach to financial education by prioritising educational content directly applicable to people's lives and incorporating attitudinal aspects into it. Additionally, using experiential learning methods and leveraging social media can be beneficial in developing financial experience, which increases the motivation to pursue financial literacy. When it comes to strategies that policymakers can employ, the influence of financial education in school on one's financial literacy emphasises the importance of conducting regular evaluations of school financial education to ensure that they produce positive outcomes. Next, the role of peers and stigma in affecting the intention of pursuing financial literacy, as well as the demand for finance community, suggest that leveraging social networks and peer effects in financial literacy interventions (e.g. finance community, peer-to-peer counselling, mentor programmes) is a step that financial institutions, NGOs and mental health organisations can take to help people improve their financial literacy. In addition, specialised financial assistance and support that are easily accessible to those who need it could be developed to provide more personalised help. Consequently, the financial problems and negative psychological experiences expressed by individuals with poor financial literacy highlight the importance of incorporating the aspect of mental health into financial literacy efforts. This involves ensuring psychological components are included in financial education materials, training financial professionals to be psychologically knowledgeable and skilled and providing accessible mental health support and resources across all service providers established through an alliance between the various stakeholders. Finally, the valuable findings uncovered through the phenomenological approach lay the groundwork and

inspire future research among specific populations, such as older individuals or those from low socio-economic backgrounds. The potential richness of data that could be gathered from these studies holds great promise for furthering our understanding in this field.

6.4 Limitations and Suggestions for Future Research

Although this research provides valuable insights for upcoming efforts and future research on financial literacy and psychological well-being, it has certain limitations. Firstly, as mentioned briefly in the limitations section of both studies, due to time constraints and the objective of gaining a comprehensive and in-depth understanding of poor financial literacy, this research focused on gathering its data from Klang Valley, which is an urban area. Secondly, the poor financial literacy investigation was focused on the scope of psychological and social factors. Based on these research decisions, economic and cultural factors such as poverty, religion and cultural beliefs and how they may affect financial literacy were not explored in detail. Given Malaysia's diversity in terms of religion, culture, ethnicity, and socioeconomic status, research that explores and seeks to understand the economic and social factors in play when it comes to financial literacy would be highly beneficial. Additionally, building on the constructive findings uncovered in this study, future research is recommended to extend similar investigations to other regions of Malaysia.

Next, to ensure a sufficient sample size despite the social constraints that occurred as a safety measure for the COVID-19 pandemic, a non-randomised sampling was utilised in the first study. It is important to acknowledge that this type of sample selection might restrict the generalizability of the findings (Trochim & Donnelly, 2007). However, to mitigate the potential drawbacks associated with non-randomized sampling, quota sampling was employed to create a sample that better represents Malaysia's diverse multi-ethnic society compared to other non-randomized sampling methods (Trochim & Donnelly, 2007). Nevertheless, it is recommended

that future studies, if afforded the opportunity and resources, employ randomised sample selection methods to enhance the validity and generalizability of their investigations.

Furthermore, it is crucial to note that the data collection for this research spanned from 2021 to 2022. Despite the World Health Organization declaring the COVID-19 coronavirus outbreak a global pandemic in 2021 (Hashim et al., 2021), it is undeniable that the pandemic's adverse effects on individuals' financial well-being and mental health are expected to persist throughout this year and potentially for an extended period. However, as the primary objective of this research was to understand the lifelong experiences, choices, and circumstances shaping participants' current suboptimal financial literacy and psychological well-being, investigations of the COVID-19 aspect and its effects were not conducted. This decision was made to maintain the research's initial focus. Nevertheless, exploring the factor of the COVID-19 pandemic may benefit future studies interested in exploring the role of unexpected events and their impact on people's livelihood and well-being.

Lastly, another limitation of this research is the use of self-report measures for metacognitive awareness and psychological well-being in the first study. Unlike cognitive ability, numeracy skills and financial literacy, which were tested using psychometric tests, metacognitive awareness and psychological well-being were measured using a self-report questionnaire, which may lead to potential inaccuracy. According to past research evaluating the reliability and validity of metacognitive self-reports, self-report measures were said to aid the understanding of participants' perceptions of their metacognitive abilities. However, it is not certain that this perception is accurate, as bias could exist in participants' responses (Craig et al., 2020). Likewise, subjective measures, such as the one employed to assess psychological well-being, can be susceptible to various systematic biases (Bertrand & Mullainathan, 2001; Podsakoff et al., 2003; Redelmeier et al., 2003). Therefore, even though the MAI used in this

study provided a good understanding of Malaysians' level of metacognitive awareness, future research studying this variable could utilise more reliable methods if provided with the time and required resources. For example, using metacognitive tasks in which participants' judgment of their task performance is compared against their actual task performance (Sunderaraman et al., 2020). Behavioural indicators could also be used as a complementary component to self-report measures, for example, using user tracking data to measure and record metacognitive activities such as reflective thinking in online learning settings. As for psychological well-being, it is recommended to incorporate objective measures as a standalone evaluation or in combination with subjective measures.

6.5 Conclusion

In conclusion, this thesis aims to provide solutions for the ineffectiveness of existing financial education approaches implemented to enhance financial literacy and psychological well-being. Specifically, this research explored the possibility of targeting cognitive factors in future interventions and conducted a phenomenological exploration of the lived experiences of individuals with poor financial literacy and psychological well-being to identify potentially overlooked variables for guidance for future efforts. Findings from this research propose a promising approach of developing cognitive capabilities to enhance financial literacy and, ultimately, psychological well-being based on the significant and positive association established between cognitive factors, financial literacy and psychological well-being. Additionally, the themes uncovered from the phenomenological study offer insights for educators, policymakers, financial institutions, NGOs and mental health organisations on areas to focus on or improve in future interventions to enhance financial literacy and psychological well-being. Precisely, the themes that explain the motivation to pursue financial literacy highlight the factors that need to be addressed as they represent the obstacles hindering the

improvement of one's financial literacy. On the other hand, the themes that explain the impact of a lack of financial literacy highlight the importance of implementing finance-focused mental health initiatives alongside financial assistance and education to protect people's psychological well-being. Together, both studies put forward alternative and innovative strategies that are yet to be considered in the Malaysian field of financial literacy and mental health to help people become financially literate and resolve or alleviate psychological problems arising from financial difficulties.

As presented at the start of the thesis, among the major causes of stress in people's everyday lives, money-related problems were found to be the number one cause of stress (GfK, 2015). The present research conducted in the Malaysian context confirms the findings of international studies that underscore the widespread consequences of a lack of financial literacy. These consequences extend beyond an individual's financial life, affecting various aspects of life, ultimately diminishing their quality of life and impacting their psychological well-being. Undeniably, money plays a significant role in every aspect of our life. From graduation until retirement, every financial decision is heavily influenced by the understanding of financial matters and the ability to conduct effective financial management. Hence, being financially literate is essential for leading a prosperous, content, and financially secure life. A financially literate population will inevitably contribute to a stronger and more prosperous economy as it drives informed consumer behaviour, responsible financial decision-making, entrepreneurship, economic stability, and reduced economic inequality. Given the significance of financial literacy, each stakeholder must play their part in enhancing and promoting financial literacy.

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Appendices

Appendix A

Explanatory Statement & Informed Consent

Project Title: The Exploration of Cognitive Contributory Factors on Financial Literacy and Psychological Well-Being among Malaysian Adults

Chief Investigator's name: Associate Professor Dr Tam Cai Lian

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You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the phone numbers or email addresses listed above.

What does the research involve?

The purpose of this research is to study the relationship between cognitive contributory factors, financial literacy and psychological well-being among Malaysian adults.

This research will take place for a duration of 30 minutes. Participants will firstly be briefed on the objective of the study. Once consent for participation has been obtained, participants will be required to complete one set of questionnaires, which consist of Section A:

Demographic information, Section B: Three-item questionnaire measuring cognitive ability, Section C: Four-item questionnaire measuring numeracy skills, Section D: 52-item questionnaire measuring metacognitive awareness, Section E: 12- item questionnaire measuring financial literacy and Section F: 10-item questionnaire measuring psychological well-being. Once you have completed the questionnaire, you will be given the option to provide your contact details, which you may do so, if you wish to be contacted for a follow-up study. Debriefing information will also be provided at the end of the questionnaires.

Why were you chosen for this research?

You are invited to this research because you are an adult aged 18 years and above, proficient in the English language and your participation can contribute to the findings of this research.

Consenting to participate in the project and withdrawing from the research

You will be asked to complete and submit a consent form before the commencement of your participation in this research, which will take place at the start of this research. Participants have the right to choose not to participate. Participants may also choose to withdraw from this research at any time. When withdrawing from the research, participants should inform the research team regarding the withdrawal and may provide the research team with the reason(s) for leaving the research, though this is not compulsory.

Possible benefits and risks to participants

Participants from this research would have a better understanding of their level of cognitive ability, numeracy skills, and metacognitive awareness and how these three factors are linked with their level of financial literacy and psychological well-being, whereby the data obtained from the research will also be conveyed to the participants upon request. Participants will also be able to access the completed research study report once it is published.

There is no danger or risk anticipated in this research. However, if, at any cost, participants have any concerns about their participation in this research, participants may contact any member of the research team.

Confidentiality

All information will be kept confidential. Any personally identifiable information obtained will be de-identified in the research project report and future publication.

Storage of data

Data will only be accessible by both the chief investigator and co-investigator and, will be stored in a confidential manner, and will not be revealed to third parties.

All data and responses will be deleted after a minimum of 5 years following the completion of the research.

Complaints

Should you have any concerns or complaints about the conduct of the project, you are welcome to contact:

Chua Khong Wai

Campus Research Director, Research Management

2-5-11A, Monash University Malaysia

Jalan Lagoon Selatan,

47500 Bandar Sunway

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***Consent Form**

Project Title: The Exploration of Cognitive Contributory Factors on Financial Literacy and Psychological Well-Being among Malaysian Adults

1. I have been asked to participate in the Monash University research project specified above. I have read and understood the Explanatory Statement and hereby consent to participate in this project. I also provide consent for the following:

   (Tick the statement(s) that is/are applicable)

   ☐ Completing an Online Questionnaire

   ☐ Contacted to participate in a Follow-Up study if the results of the questionnaire I have completed in this research fulfil the criteria for participation in the follow-up study.

2. Name: _____

3. Date: _____

Appendix B

Demographic Information Form

Project Title: The Exploration of Contributory Factors on Financial Literacy and Psychological Well-Being among Malaysian Adults

Please complete the following information. Kindly mark only one answer for each question.

1. Age: _____

2. Gender:

☐ Male

☐ Female

3. Ethnicity:

☐ Malay

☐ Chinese

☐ Indian

☐ Others

4. Are you currently employed?

☐ Yes

☐ No

5. Which range does your monthly income fall under?

☐ Below MYR2,500

☐ MYR2,500 - 5,000

☐ MYR5,001-10,000

☐ More than MYR10,000

Appendix C

Cognitive Reflection Test

Instructions: Please answer all of the questions.

1. A bat and a ball cost MYR5.20 in total. The bat costs MYR5.00 more than the ball. How much does the ball cost?

MYR _____

2. If it takes 5 machines 10 minutes to make 5 widgets, how long would it take 200 machines to make 200 widgets?

_____ minutes

3. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 24 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

_____ days

Appendix D

Berlin Numeracy Test

Instructions: Please answer all of the questions.

1. Imagine we are throwing a five-sided dice 50 times. On average, out of these 50 throws how many times would this five-sided dice show an odd number (1, 3 or 5)?

_____ out of 50 throws.

2. Out of 1,000 people in a small town, 500 are members of a choir. Out of these 500 members in the choir, 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. What is the probability that a randomly drawn man is a member of the choir? (please indicate the probability in percent).

_____ %

3. Imagine we are throwing a loaded dice (6 sides). The probability that the dice shows a 6 is twice as high as the probability of each of the other numbers. On average, out of these 70 throws, how many times would the dice show the number 6?

_____ out of 70 throws.

4. In a forest 20% of mushrooms are red, 50% brown and 30% white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poisonous with a probability of 5%. What is the probability that a poisonous mushroom in the forest is red?

_____%

Appendix E

Metacognitive Awareness Inventory

Instruction: Think of yourself as a learner. Read each statement carefully. Using the scale below, please indicate your agreement or disagreement with each of the following statements indicating the extent that it applies to you as a learner:

1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), 5 (strongly agree)

1. I ask myself periodically if I am meeting my goals.
2. I consider several alternatives to a problem before I answer.
3. I try to use strategies that have worked in the past.
4. I pace myself while learning in order to have enough time.
5. I understand my intellectual strengths and weaknesses.
6. I think about what I really need to learn before I begin a task.
7. I know how well I did once I finish a test.
8. I set specific goals before I begin a task.
9. I slow down when I encounter important information.
10. I know what kind of information is most important to learn.
11. I ask myself if I have considered all options when solving a problem.
12. I am good at organising information.
13. I consciously focus my attention on important information.
14. I have a specific purpose for each strategy I use.
15. I learn best when I know something about the topic.
16. I know what I am expected to learn.
17. I am good at remembering information.
18. I use different learning strategies depending on the situation.

19. I ask myself if there is an easier way to do things after I finish a task.

20. I have control over how well I learn.

21. I periodically review to help me understand important relationships.

22. I ask myself questions about the material before I begin.

23. I think of several ways to solve a problem and choose the best one.

24. I summarize what I've learned after I finish.

25. I ask others for help when I don't understand something.

26. I can motivate myself to learn when I need to.

27. I am aware of what strategies I use when I study.

28. I find myself analysing the usefulness of strategies while I study.

29. I use my intellectual strengths to compensate for my weaknesses.

30. I focus on the meaning and significance of new information.

31. I create my own examples to make information more meaningful.

32. I am a good judge of how well I understand something.

33. I find myself using helpful learning strategies automatically.

34. I find myself pausing regularly to check my comprehension.

35. I know when each strategy I use will be most effective.

36. I ask myself how well I accomplish my goals once I'm finished.

37. I draw pictures or diagrams to help me understand while learning.

38. I ask myself if I have considered all options after I solve a problem.

39. I try to translate new information into my own words.

40. I change strategies when I fail to understand.

41. I use the organizational structure of the text to help me learn.

42. I read instructions carefully before I begin a task.

43. I ask myself if what I'm reading is related to what I already know.

44. I re-evaluate my assumptions when I get confused.

45. I organize my time to best accomplish my goals.

46. I learn more when I am interested in the topic.

47. I try to break studying down into smaller steps.

48. I focus on overall meaning rather than specifics.

49. I ask myself questions about how well I am doing while I am learning something new.

50. I ask myself if I learned as much as I could have once I finish a task.

51. I stop and go back over new information that is not clear.

52. I stop and reread when I get confused.

Appendix F

Financial Literacy Questionnaire

Instructions: Select only one answer for each question. Please answer all the questions below.

1. If the chance of getting a disease is 10%, how many people out of 1,000 would be expected to get the disease?

- 100
- 10
- 11
- Do not know

2. If 5 people all have the winning number in the lottery and the prize is MYR2million, how much will each of them get?

- MYR400,000
- MYR40,000
- MYR2,000,000
- Do not know

3. Let's say you have MYR200 in a savings account. The account earns 10% interest per year. How much would you have in the account at the end of two years? Assuming you did not take out the money and interest after first year.

- MYR220
- MYR242
- MYR240
- Do not know

4. Suppose you have a friend who inherits MYR10,000 today and his siblings inherits MYR10,000 3 years from now. Who is richer because of the inheritance?

- My friend
- His sibling
- They're equally rich
- Do not know

5. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account?

- More
- Less
- Exactly the same
- Do not know

6. Which of the following statements describes the main function of the stock market?

- The stock market helps to predict stock earnings
- The stock market results in an increase in the price of stocks
- The stock market brings people who want to buy stocks together with those who want to sell stocks
- None of the above
- Do not know

7. Which of the following statements is correct?

- Once one invests in a mutual fund, one cannot withdraw the money in the first year
- Mutual funds can invest in several assets, for example invest in both stocks and bonds
- Mutual funds pay a guaranteed rate of return which depends on their past performance

- None of the above
- Do not know

8. If the interest rate falls, what should happen to bond prices?

- Rise
- Fall
- Stay the same
- None of the above
- Do not know

9. Stocks are normally riskier than bonds.

- True
- False
- Do not know

10. Considering a long time period (for example, 10 or 20 years), which asset normally gives the highest return?

- Savings accounts
- Bonds
- Stocks
- Do not know

11. Normally, which assets display the highest fluctuations over time?

- Savings accounts
- Bonds
- Stocks
- Do not know

12. When an investor spreads his money among different assets, the risk of losing money:

    - Increase
    - Decrease
    - Stay the same
    - Do not know

Appendix G

Brief Inventory of Thriving

Instruction: Please indicate your agreement or disagreement with each of the following statements using the scale below:

1 Strongly Disagree

2 Disagree

3 Neither Agree nor Disagree

4 Agree

5 Strongly Agree

1. My life has a clear sense of purpose.

2. I am optimistic about my future.

3. My life is going well.

4. I feel good most of the time.

5. What I do in life is valuable and worthwhile.

6. I can succeed if I put my mind to it.

7. I am achieving most of my goals.

8. In most activities I do, I feel energized.

9. There are people who appreciate me as a person.

10. I feel a sense of belonging in my community.

Appendix H

Descriptive Statistics for Cognitive Ability, Numeracy Skills & Financial Literacy

Table A

Individual Item Scores of Cognitive Reflection Test (CRT) for Cognitive Ability

	Q1	Q2	Q3
Correct	109	147	142
Wrong	191	153	158
Correct (%)	36.3	49.0	47.3

Table B

Individual Item Scores of Berlin Numeracy Test (BNT) for Numeracy Skills

	Q1	Q2	Q3	Q4
Correct	223	101	157	70
Wrong	77	199	143	230
Correct (%)	74.3	33.7	52.3	23.3

Table C

Individual Item Scores of Financial Literacy Questionnaire (FLQ) for Financial Literacy

	Basic Financial Literacy				
	Q1 Numeracy-Percentage	Q2 Numeracy-Division	Q3 Compound Interest	Q4 Time Value of Money	Q5 Inflation
Correct (%)	92.7	72.0	73.3	63.0	86.0
Wrong (%)	6.0	25.0	24.7	32.0	9.3
Do not know (%)	1.3	3.0	2.0	5.0	4.7

	Advanced Financial Literacy						
	Q6 Function of Stock Market	Q7 Knowledge of Mutual Funds	Q8 Interest Rates & Bond Prices	Q9 Understan-ding Risk	Q10 Long Period Returns	Q11 Asset Volatility	Q12 Risk Diversi-fication
Correct (%)	71.3	66.0	49.7	77.0	56.7	77	79.7
Wrong (%)	22.3	14.7	32.0	11.0	30.0	12.0	14.7
Do not know (%)	6.3	19.3	18.3	12.0	13.3	10.3	5.7

Appendix I

Sample of Full Interview Verbatim (Participant #8)

Interviewer/Researcher: Okay, thank you so much for spending your time for this interview. Before we start, I would like to highlight two things. One, everything you share here in this interview will be private and confidential. And second, our interview session will be recorded for the purposes of data transcription. Is that okay with you?

Participant #8: Yeah.

Interviewer/Researcher: In that case, I'll proceed with the questions. So, the first question is, what do you struggle with the most when it comes to your finances?

Participant #8: Okay. It can be any answer, right? There's no right or wrong, right?

Interviewer/Researcher: Yes. You can just share your honest opinions and thoughts.

Participant #8: Okay. So, I think the biggest struggle in my finances is the thought that…always never enough. Okay, erm… and another thing is… actually, this is a very broad topic. Maybe my finance planning from 5 years ago might be different from now. And it could change in the following years. But what I actually struggle the most maybe wanting to find more sources of income. Yeah. And like when I answered your paper, during that, I didn't think much about the struggling. But right now, I'm feeling the situation. So, it's kinda different from when I answered your survey that time. Now, I'm in the pivoting situation because I'm doing like a career switch, so there is a situation where I won't have an active income or like a stable flow of income. Whereas it's more like other passive ones. They are not doing very well right now.

Interviewer/Researcher: Okay. And what would you say are the reasons for the struggle you've just mentioned?

Participant #8: I think the reasons for the struggle is perhaps progression…like moving to a different phase of life. So, I know it's not like a very scientific answer, but I think the need to progress is part of the reason why I'm struggling right now. And also perhaps because I didn't prepare much. I didn't prepare way ahead. I didn't do a proper planning. I didn't expect a career switch right now. So, if I were to know earlier, maybe I will start to look for a job while I was still working actively. So, yeah.

Interviewer/Researcher: So, on top of the income struggle that you mentioned, is there anything else that you struggle with when it comes to money management and your finances?

Participant #8: Erm… for me, maybe not much. Because I learned to budget and I learned to plan ahead. And I think nowadays there's this, like the Maybank app. So that kind of helps you to erm… whenever you spend, like, see how much you spend on. So, I usually set myself a limit…like I'm going to spend this much, I always make sure that I have savings and other investments. I do cryptocurrency part, not into stocks, but I have other financial investments like public mutual.

Interviewer/Researcher: So, moving on, how has your struggle with your finances affected your psychological well-being?

Participant #8: I think it somewhat affects… I think I need to think. Oh yeah, standard of living…definitely affects my standard of living. Then I have to restrain more on my spending habits. Maybe before this, my leisure budget is a bit more. But now I have to cut down. And living on more simpler lifestyle. Cause I, there are certain things that erm… how do I say…

like a sacrifice? You have to sacrifice a certain part of your budget. You can't afford to buy a house. I can't afford to buy now. So, yeah.

Interviewer/Researcher: Okay. And how would you say making these sacrifices affects you psychologically?

Participant #8: I think I wouldn't say that.. some people would say self-confidence, but not for me. But it does affect my…. (pause)…some self-confidence. Or, like, how do I put it in words? Like the standard I impose on myself. So, it's not … I don't really think other people can see our financial struggle from our appearance; that's what I think. But I think it does affect our self-confidence on the inside. So that's on the mental side. Because maybe in life, there are a couple of checklists that we want to achieve, maybe be a millionaire by 30 years old. Or at least two properties by 30, and I see that it's not possible at this time. So yeah, but I wouldn't say it affects me much because I, now that I know why I'm struggling, it doesn't affect me so much because I could do planning…maybe not like 30, but like 35 or 40.

Interviewer/Researcher: Other than self-confidence, is there any other way that your financial struggle has affected you?

Participant #8: It's more like mental health care. Not as in going to see a therapist. But like taking time for yourself or having days where you don't have to think about money because you have enough. So that is also part of, also affects my mental health. Or like not having enough income or not having enough money makes me how to say… make me can't go out to enjoy things that I want. For me, personally I enjoy massage therapy, spa. So, before this, I could go frequently like every two weeks. Or once a month. It's for myself. Because I work on the computer all the time. Now that I don't have much financial resources, so I can't enjoy as often as I can.

Interviewer/Researcher: Alright, I get what you mean. So moving on, if you look back at your life, what would you say,stopped you from having sufficient financial knowledge and skills?

Participant #8: Resources around me. To elaborate. One because I'm not from… because for my financial situation, I was not brought up in a wealthy family, so I don't have natural…like natural handheld resources around me. So ,a lot of things that I have to figure out my own way. That has its pros and cons. I can say the lack of resources prevented me from achieving more like financial … so-called financial freedom. Let me see… So, I would say that friends and school. Yeah, school. So, I actually have, erm… have some financial literacy in my home. From young, I was taught how to save money, how to like record your pocket money, so we have like a book. We debit and credit each time our expenditure, and when you go to school, let's say primary or secondary, there wasn't much information about financial literacy. No one actually teach you about, like, how to go.. no one actually teach you to make more money through this or that. I actually discovered my passion for studying business after I did my internship in e-commerce shop. That was like back in 2013, I think. It was like eight years ago. So, during that time, I was doing a diploma in English. I wasn't doing anything business-related. And my family they are not in any family business or any…involved in like business environment kind of setting. There wasn't any of these. So during that time, only after when I went for the internship, I realized why you don't need a lot of education to so-called achieve the financial status that you want. All you need to do is you need to learn how to do it. So that sparks me to learn more about how to make money outside of just going to usual universities and so on and so forth. And so, then I switched my major. I did a degree in business because I want to learn how and I also did my masters in international business. But still, they didn't actually teach you ways to like how to make money. Because there are certain things that are too much to cover in a normal classroom setting. And I think there wasn't much, I wasn't exposed much to entrepreneurship setting until 2013. So that blew my mind.

Interviewer/Researcher: Alright, So earlier, you mentioned two things. You mentioned school and you also mentioned friends. Can you share more about how friends were acting like a barrier?

Participant #8: I would say that okay… umm, like right now I'm really bothered about buying branded things. Now that I acquired more knowledge about business, and I learned more about the people around me, the entrepreneurs, they are not bothered much about branded things. And I also learned that why branded companies make themselves seem branded to appeal to the middle-income group. So, when I learned about that, I was like huh, okay. So ,friends matter. I would say before 2015, I was very aware about friends. Like I want to be… because during that time I also want to be… status is based on what brands you own. It'll cause you thousands of ringgit or up to thousands of dollars. And it's affected by the friends around you. So even though I don't have friends who wear top to bottom all branded but they do keep mention about brands. Actually, it doesn't help in the financial literacy at all. Because all they do is spend, spend, spend. So no one talks about savings, no one talks about how to invest, no one talks about how to do business. Because, like whenever you mention, like my old circle of friends, whenever you talk about business related, I think there is still this old stigma especially for people that are not familiar with the business mindset, they think that if you keep talking about business you are kind of money minded. But it's actually not. The more you talk about it, the more you are aware about it. But people just choose not to talk about it. So, actually it changed me a lot ever since I go to business school. I think that kind of topic is still a taboo for most Malaysians. And I think you know about like the recent trend for like Malaysian pay gap. Where people talk about their salary. Actually, I have that habit when I come back from China. Because talking about salary is like asking about the weather in China. Everyone knows everyone's salary because it's so obvious. But when I come back here, I talk about how much you can through this and how much you can get through that and the numbers, people get

offended. So, that's part of the financial literacy too. I would say that my old circle of friends would not, like I don't know if they are even financially literate, I don't even know, there is no test. Some people would say if you're good in maths, you are probably good in finance. But that's not the case for me. I wasn't good in maths, but I was like okay in accounting. Because of my interest.

Interviewer/Researcher: Okay. Thank you so much for sharing that. This brings us to our next question, what do you think can help you today to have better financial knowledge and skills so that you can properly manage your finances?

Participant #8: Supportive friends and community.

Interviewer/Researcher: Okay, can you explain more?

Participant #8: Okay. First of all, I felt that there are things that I could've known more if I have friends… like if I am friends with people who invest, I would probably know more about stocks. So it's the same thing that…the reason why I'm not involved in stocks is because I don't have friends who actually open their minds and teach me. Even if I ask, the closest answer would get is go and read this Warren Buffet book, read this book, and then when you are done with it then you come back again and ask me. So during that time, I was in China and the person was a Korean, he's been playing stocks, he achieved financial freedom at a very young age, he pays for his degree and everything through stocks. So they were talking about Disney, Coca-Cola, these kind of stocks, but I don't really understand. So for me, I would even think that how do I even go and open an account and start like funding them? So like simple things like this like if me and my friends we are all playing like…we say that erm… like crazy about stocks, everyday we will get involved to it. But in the contrary ,not in stocks, I'm in crypto because I was involved in a crypto community and that really opened my mind. And also because for my situation, my dad is a very open-minded person so he actually gave

me…introduced me to cryptocurrency. So from there, I start to work on it. But went I get into it, I don't really have friends around me that was involved in it. All I have was a discord community. So I figured out that if more people were to learn about it , we could encourage each other. Because till today, if I were to tell my friend, hey, you should learn more about cryptocurrency, the prices is low now, they would, some friends they would just shut you off. They don't even want to even listen. So, I think community really plays a role. And then of course, if government support it, it'll be much better.

Interviewer/Researcher: Can you share more about what you just mentioned?

Participant #8: I would say that if they are more… like I know Honduras is very crypto-friendly and I know… I would say I'm not really…okay, I know Malaysia just announced on the media that they will encourage cryptocurrency but I'm not sure yet. But I now like umm… certain… I'll give you an example like I wanted my China friend to get involved into cryptocurrency, and I tried to introduce it to her because she's open to it. And she likes the place of… one thing about China citizens, they are very open to play stocks and its very easy for them to buy on the Alibaba app itself. But when I told her about, oh, if you want to buy like Bitcoin, now is a very good time to buy. The moment she hear the word Bitcoin, she got scared, intimidated. And I know this because Chinese government is clamming down on people that are trading cryptocurrencies. That's the reason why. They say it's not regulated. The way Chinese government works is they want everything to be regulated according to their national security. So they encourage blockchain but they do not encourage their citizens to trade cryptocurrencies, just not yet. So that's why I said, government plays a big role. And financial literacy as well. And because they are pushing their local stocks, if people don't buy cryptocurrency, they can always buy stocks.

Interviewer/Researcher: Alright. So, apart from what you've shared, is there anything else you would like to add?

Participant #8: Erm, no…not really.

Interviewer/Researcher: Okay. So, this brings us to the end of this interview. Thank you so much for sharing.

Appendix J

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