In Pursuit of Financial Well-being: The Effects of Financial Literacy, Financial Behaviour and Financial Stress on Employees in Labuan

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ABSTRACT

The exposure to a plethora of choices and relatively complex financial products has intensified the need for financial knowledge adequacy in order to acquire the skills needed to make sound financial decisions. The study aimed to examine the effects of financial literacy and financial behaviour on respondents' financial well-being and to assess the role of financial stress in mediating these relationships. Using a web-based online survey approach, a total of 213 employees in the government and private sectors in the Federal Territory of Labuan responded to the self-administered questionnaire via convenience sampling technique. All data were analyzed using Partial Least Square (PLS) version 3.0. This study found significant relationships between financial literacy, financial stress, and financial well-being. However, there was no significant correlation between financial behaviour and financial wellbeing. Subsequently, financial stress proved to have no mediating effect on predicting employee's financial well-being in FT Labuan.

Keywords: *Financial literacy; financial behaviour; financial stress; financial well being.*

INTRODUCTION

The elevated household debt level in Malaysia is a cause for concern with the potential to creep up despite the slower growth in household loans in 2016 (The Star, 2017). Bank Negara Malaysia (BNM) revealed that the risks emanating from household lending remained largely contained despite moderated growth in household debt due to the scaling back of borrowings to be in line with the loan affordability. Total household debt as a proportion of gross domestic product (GDP) was lower at 88.4% in 2016 as compared to 89.1% in 2015 (Bank Negara Malaysia, 2016). Although the decline in the household debt ratio in 2016 is quite minimal, the central bank's effort to alleviate Malaysia's macroeconomic imbalances in the household sector is commendable (Malaysia Rating Corporation Berhad, 2017). In general, household debt has been linked to financial distress (Georgarakos, Lojschova & Ward-Warmedinger, 2010).

In Malaysia, as household debt service ratio is on an incremental trend, the debt issues affecting the young adults and civil servants are equally alarming. Statistics have shown an unprecedented debt accumulation amongst Malaysia's millennial or the Gen Y. According to a study conducted by the Asian Institute of Finance, these young individuals are experiencing significant financial stress early in their lives, with many living beyond their means and trapped in emotional spending (Wan Azmi, Madden & Mokhtar, 2015). In addition, the number of bankrupt individuals has kept on increasing over the years with the latest statistics published by the Department of Insolvency Malaysia showing a record of 3,547 civil servants declared bankrupt from 2013 to March 2017 (Bernama, 2017).

Malaysia's Employees Provident Fund (EPF) reported that as of 2015, two-thirds of its members aged 54 have RM50,000 or less in their accounts. The amount will most likely be used up within the first five (5) years of retirement and this "ugly-truth" statement has caught the attention of those who are about to retire and who at the same time, do not have enough in their EPF accounts to live on. Worse still, the EPF data also showed that more than half of Malaysians have no financial assets and one-in-three of them do not have a savings account (Saieed, 2017).

The results of a study conducted by Hwee, Lin and Sellapan (2010) are consistent with the latest EPF statistics. The afore-mentioned researchers claimed that only approximately 34% of individuals in Malaysia contribute towards plans after retirement, especially in EPF. The surveys conducted by Mazanah and Mazalan (2002) revealed that the majority of retirees spent almost all of their EPF savings within a few years of retirement. This is an indication that personal financial planning is a perpetual issue despite the government's aggressive effort to provide financial counselling programs to educate Malaysians, especially the youth, on the need for managing debt and finances.

Financial well-being is labelled as the outcome of financial practices (Joo, 1998). Of late, considerable attention among researchers is focused on the study of different aspects of well-being due to its impact on the quality of life. Evidence shows that poor financial well-being can affect physical, mental and social well-being, which in turn can result in poor job performance, short-term decision-making, a reduced ability to concentrate, absenteeism and lower productivity. As conceptualized by Sass, Belbase, Cooperrinder and Ramos-Mercado (2015), financial satisfaction is based on what one sees and values at a particular point in time but what is more important is the financial well-being that involves one's protection against the unforeseeable risks and the act of building-up savings to meet future needs.

Personal financial planning has long been an issue in Malaysia as a significant proportion of Malaysians today finds it hard to make ends meet. In the labor force, the increasing rate of bankruptcy cases, particularly those affecting the public sector employees is worrisome. Despite the government's restriction policy imposed on civil servants to not obtain loans of more than 60% of their earnings, the issue remains unsolved as these civil servants continue to borrow money without prior approval from their department heads and end up having trouble financially (Bernama, 2017). Previous studies have confirmed that financial stress may affect overall personal satisfaction as well as work satisfaction (Boles, Johnston & Hair, 1997; Kantak, Futrell & Sager, 1992).

Based on the above facts, this study intends to complement previous studies done on the predictors of financial well-being of Malaysians, particularly the employees, by examining the effects of financial literacy and financial behaviour towards employees' financial well-being. The study would also investigate the extent to which financial stress could mediate the relationships between financial literacy and financial behaviour towards employees' financial well-being in FT Labuan. The outcomes from this study will further assist in designing and implementing the more practical financial programs that could benefit the individual employees and at the same time, the employers as hiring financially-troubled employees will make them a liability to the employer.

LITERATURE REVIEW

Financial Well-Being

As described by Joo (2008), financial wellness is a complex multidimensional construct and it is conceptually based on objective and subjective indicators of financial well-being (Delafrooz & Paim, 2011; Gerrans, Speelman & Campitelli, 2014). Whilst Rutherford and Fox (2010) argued that objective financial well-being indicators refer to quantifiable and unbiased aspects of an individual's economic position, such as income, actual debt, and savings or assets, Delafrooz and Paim (2011) highlighted that the subjective measures of financial well-being, such as perceived ability to meet expenses, satisfaction with one's financial condition, worry about one's debt, and perceived manageability of debt and savings, provide invaluable insight into one's financial wellness that is not achieved through objective measures alone.

Other researchers seeking to explain the subjective measures of financial well-being concluded that these measures may shed light on an individual's level of financial distress or satisfaction (Gerrans et al., 2014). Yin-Fah, Masud, Hamid, and Paim (2010) in their study, undertook a different angle on behavioural perspective whereby the definition of financial well-being refers to the outcome of financial practices, including financial literacy, attitudes to money, and the process according to which financial resources are managed. On a similar context, Rutherford and Fox (2010) pointed out that an active financial-health state is a condition demonstrated by a low level of debt, active saving, and planning for retirement and spending. Subjective measures of well-being have become the subject of intense discussions among academicians. The measures are often seen as substitutes for, or complements to, traditional income-based economic welfare measures and to indicators inspired by the capability approach (Kesebir & Diener, 2008).

Past studies indicated that satisfaction with various aspects of life is of utmost importance in the overall psychological well-being (Campbell, 1981; Campbell, Converse & Rogers, 1976; Olson, McCubbin, Barnes, Larsen, Muxen & Wilson, 1983). As presented by Prawitz, Garman, Sorhaindo, O'Neill, Kim and Drentea (2006), one of those domains is one's financial situation. Past researchers have examined both objective and subjective measures in an attempt to describe the financial condition of individuals and families.

Garman and Forgue (2006) argued that personal financial behaviour could be an important component in defining financial well-being. Despite the fact that positive financial behaviour enhances the level of financial well-being, failure to manage finances is detrimental and contributes to financial problems. A mounting body of research supports the hypotheses that if people practise more of the positive financial behaviour, this would lead to a greater satisfaction of their financial situations (Godwin, 1994; Joo & Grable, 2004; Kim & Garman, 2003).

The findings of Sabri, Masud, Karen and Paim (2008) showed strong evidence that financial literacy and financial behaviour reflect financial well-being among students. While examining the effective factors on people's financial literacy, Cude's (2010) results showed that higher levels of education coupled with an appetite for risk, age increase, more work experience, family income, parental occupation and attending training tend to increase financial literacy levels. Sabri and Juen (2014) confirmed in their finding that the lack of personal financial knowledge, limits personal financial practices and hence, may cause financial problems which would lead to lower financial well-being.

Although the above measures have been useful in contributing to the body of knowledge about an individual's economic situations, there has been little agreement as to the best way to measure the construct, or even which construct is being measured (Prawitz et al., 2006). According to Grable and Lytton (2001) and Sung and Hanna (1996), there seemed to be a common psychological profile among individuals with more financial knowledge that allows them to make different financial decisions, which subsequently lead to higher levels of financial wellness.

Financial stress encompasses many attributes of financial circumstances covering income, debts, assets and money management. It focuses on one's financial circumstances effect, towards an individual's standard of living by considering deprivation specific to the community in which they live (Steen & Mckenzie, 2013). This evidence however, may vary from one country to another.

Financial stress influences a person's health, functions and quality of married life and employee productivity (Garman, Kim, Kratzer, Brunson & Joo, 1999; Kim & Garman, 2004). From a different set of perspectives, financial stress may not necessarily be a negative issue. In fact, it may be seen as a source of motivation to increase productivity and income which can eventually help to solve financial problems.

Based on past literature, there are several determinant factors of individual's well-being, including demographic factors (for example, age, gender, marital status, income-level and others), financial literacy, financial behaviour, financial capability and financial problems. For the purpose of this study, the current research would partially adopt Sabri and Falahati's (2003) conceptual model in terms of predicting the financial well-being of employees in FT Labuan. Two relevant predictors of financial well-being namely, financial literacy and financial behaviour would be used in this study.

Financial Literacy

There has been a surging interest in financial literacy that has resulted in a number of publications on the topic in recent years. The interest is in tandem with the increasingly complex and revolutionized financial markets. Some studies argue that individuals are financially illiterate (Lusardi & Mitchell, 2005; Lusardi, Mitchell & Curto, 2010) which consequently affects their financial, investment and retirement planning decisions, while other studies report the positivity of financial literacy that relates to financial outcomes such as investment practices and savings (Hilgert, Hogarth & Beverly, 2003).

Assessing the levels of financial literacy in the population is a key component of a successful national strategy for financial education, enabling policy makers to identify gaps and design appropriate responses (www.oecd.org). Developed countries like Australia, United States of America, United Kingdom, Belgium Switzerland and Canada have conducted their country's financial literacy assessment to benchmark themselves with other countries. Other developing countries are also in pursuit of this initiative as the need for a financially literate nation is crucial for the development of a country.

In the case of Malaysia, the results of the Organization for Economic Cooperation and Development's (OECD) International Network on Financial Education (INFE) Pilot Study conducted in 2010/2011 revealed that the majority of respondents have some basic knowledge of key financial concepts (Atkinson & Messy, 2012). However, as cited by Boon, Yee and Ting (2011), personal financial planning in Malaysia is still in its infancy as most Malaysians do not take control of their own financial affairs (Citi, 2008; Gan, 2008).

Enforcing financial education alone as one of the key policies to enhance financial literacy may not be the best solution as evidenced by Sam, Geetha and Mohidin (2012) in their study. The study confirmed that participating in a financial education program will not produce a change in individual behaviour as what they have learned is different from what they apply in daily lives. Hence, financial education programs should be tailor-made for a small group of participants with similar characteristics. Financial education should not be a one-size fits all program. It was further observed by Sam et al., (2012) that the effectiveness of delivering financial knowledge to these students may be ineffective as the class was conducted in a large group. Nevertheless, other researchers still believe that financial education could be one of the best antidotes in enhancing financial literacy (Lusardi, 2008; Chen & Volpe, 2002; Ibrahim, Harun & Isa, 2009).

Past studies have indicated that individuals who are financially illiterate do not plan and are less likely to invest in high-risk investments such as stocks (Van Rooij, Lusardi & Alessie, 2011). Steen and Mackenzie (2013) suggested that poor financial literacy may lead to poor life choices as financial literacy is regarded as the most important component in achieving a successful adult life (Shim, Barber, Card, Xiao & Serido, 2010) due to its role in developing not only individuals' financial management attitude, but also attitude about general life (Abdul Jamal, Ramlan, Mohidin, Karim & Osman, 2015).

Beal and Delpachtra (2003) conducted a survey among students in Australian regional universities. Most respondents scored fairly well for financial literacy and knowledge. In addition, business students scored better in comparison with other majors. In terms of gender differences, male college students in Malaysia have a higher level of financial knowledge as compared to their female counterparts (Falahati, Paim, Ismail, Haron & Masud, 2011; Lim, Osman, A.B.U., Abdul Jamal, Mohidin & Mail, 2013). Similar results were also confirmed by Chen and Volpe (2002) where they observed that female students have less enthusiasm, lower confidence and less willingness to learn about personal finance topics as opposed to male students. In general, the female students are more likely to study English and humanity rather than finance.

Lusardi and Mitchell (2011b) pointed out that financial illiteracy is more prevalent among young people and the elderly. This has accelerated the move initiated by the OECD to include a fourth module testing financial literacy in its Programme for International Student Assessment (PISA) standardized test, starting in 2012 (http://www.oecd.org/pisa). The PISA test examines not just what students know in Science, reading and Mathematics, but what they can do with what they know. The results from PISA show educators and policy makers the quality and equity of learning outcomes achieved elsewhere, and allow them to learn from the policies and practices applied in other countries. It was found that many young people are confronted with financial decisions and they are consumers of financial services in this evolving context and hence, financial literacy is now globally recognised as an essential life-skill.

Earlier studies discovered that the relationship between financial literacy and financial stress is due to financial problems faced by individuals who are financially illiterate (Joo & Garman, 1998a; 1998b). It was estimated that in the United States, between 15% to 20% of workers are suffering from financial stress which impacts their productivity (Kim, Sorhaido & Garman, 2006). The research revealed that financial stress is closely-associated with employees' health and in some cases, may cause absenteeism.

The importance of financial literacy has become the forefront agenda of policy-makers and this has been further strengthened by Huston's study (2010) which showed a link between an increase in financial literacy to the ability to make better decisions. A study by Delafrooz and Paim (2011) also proved that there is a direct correlation between the levels of financial literacy and financial distress among workers in Malaysia.

According to Norman (2010), in most cases, financial stress is largely caused by poor spending decisions precipitated by a lack of adequate financial literacy. Notwithstanding basic literacy is a pre-condition to financial literacy. The finding is further evident under the study of Betal (2004) who proposed that "literacy and numeracy skills are a prerequisite in developing financial literacy".

Financial Behaviour

Bad management of personal finances can have serious social and societal consequences. Empirical evidences found by Xiao, Tang and Shim (2009) who revealed that positive financial behaviours contribute to financial satisfaction, which in turn contributes to life satisfaction. Subsequently, good financial practices have a positive effect which is to improve one's health, as evident in a study by O'Neil, Sorhaindo, Xiao and Garman (2005) where participants in a credit counselling session who reported having improved health are more likely to engage in positive financial behaviours and experience improved finances.

Hilgert, Hogarth and Beverly (2003) found a correlation between financial literacy and behaviour whereby those who are more financially-literate are more likely to engage in recommended financial practices such as paying bills on time and having an emergency fund However, consumers' propensity to save, budget and control spending are found to be partly dependent on their perceived control over outcomes, financial knowledge and financial resources (Perry & Morris, 2005). As a matter of fact, financial behaviour shaped by parents with excellent financial development of their children has been known as the main influencer of financial self-sufficiency and financial well-being in their children during adolescence and the transition to adulthood (Shim et al., 2010). Other researchers attributed the same factor as the main contributor to the satisfaction with one's financial status (Parrotta & Johnson, 1998).

The findings of research studies generally reveal that those who practise more of the financial behaviour recommended by experts reported a lower level of financial problems and stress (Joo & Grable, 2004; Lea, Webley & Walker, 1995). This is supported by Delafrooz and Paim (2011) who in an attempt to study the determinants of financial wellness among Malaysian workers, concluded that individuals who exhibit better behaviours tend to have lower financial stress resulting in higher financial satisfaction.

Financial Stress

In Malaysia, financial stress has become an issue not only in the poor income group but in almost all classes of income earners. Financial stress can be felt when people are worried that they do not have enough money, miss their loan payments or do not have enough savings for an emergency. Research conducted by Nee (2016) indicated that the main reason why people defaulted on their loan payments or have debt problems was because of poor financial planning.

The study of Sabri and Falahati (2003) on the mediating effect of financial stress to the predictors of financial well-being of Malaysian employees found that there was a significant influence of financial stress on financial literacy, financial behaviour, financial capability and financial problems on financial well-being among employees in Malaysia.

Bray (2001) came out with varying degrees of financial stress, ranking them according to their severity which include "missing out" (the inability to afford participation in activities that are recognised by society such as going on annual holiday), "cash flow problems" (that includes having insufficient money to pay for daily expenses or regular household bills) and "hardship" (the most severe situation of having to forgo basic needs and require emergency financial relief). If someone is unable to meet his/her financial responsibilities, the person is deemed to have financial strain and that one of the most significant causes of stress among workers is personal finance (Kim & Garman, 2003).

Although there is mounting evidence on the effect of financial stress on financial well-being, there is limited research on financial stress and financial well-being among employees. Kim and Garman (2004) suggested that, financial stress could be a more valid measure as opposed to income in predicting the human satisfaction indicators of employees at the workplace. These indicators are important to assess employees' productivity level, work commitment, job satisfaction, tardiness, absenteeism, retention, turnover morale and loyalty. However, there is limited research in this area.

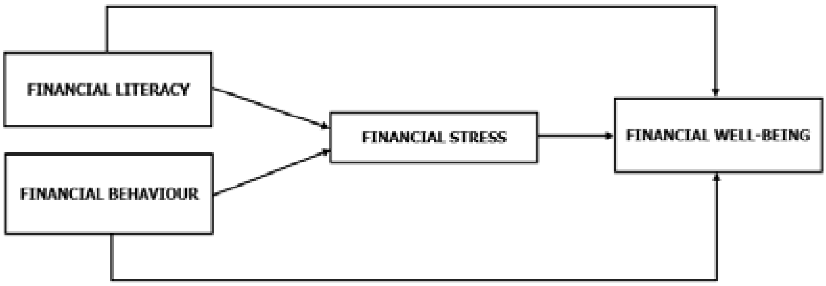
The findings of Bailey, Woodiel, Turner and Young (1998) showed financial stress level was negatively related to financial satisfaction. Their study among health care professionals revealed that financial stress significantly contributed to explaining the financial well-being. Prior studies indicated that financial stress affected overall personal satisfaction as well as work satisfaction (Boles, Howard & Donofrio, 2001; Kantak, Futrell & Sager, 1992). Although the effect of financial stress on financial well-being was documented by researchers, there is limited research on financial stress and financial well-being among employees.

METHODOLOGY

Data Collection

The target population of this study was full-time public servant employees from the government sector, the GLC or statutory bodies and the private sector in the Federal Territory of Labuan, comprising those from support staff to the higher level position. The questionnaires were distributed via *LimeSurvey,* an open source online survey tool (http://www.limesurvey.org). The survey was strictly controlled through the use of "once-only" tokens for each survey participant to avoid double-counting and that the respective individual's email address was keyed in for online survey invitation.

A total of 447 questionnaires were distributed using the web-based *LimeSurvey*. Of the 447, 14 respondents opted out from the online survey and another 28 respondents partially completed the questionnaires. A total of 219 questionnaires were completed and returned for analysis, out of which, 6 responses were not usable due to the failure of the respondents to provide answers for some of the key questions. Such questionnaires were discarded which left a total of only 213 usable and completed questionnaires.



Source: Adopted from Sabri and Falahati (2003).

Figure 1: Research Framework

Profile of Respondents

A total of 213 respondents were involved in the final sample. The analysis of the respondents' information shows that 139 of the respondents or 65.3% were made up of female respondents and the remaining 74 or 34.7% were male respondents. The majority of the employees were from the government-linked companies (GLCs) or statutory bodies with 100 respondents or 46.9%. The composition of respondents was 17.8% or 38 middle level managers, 6.6% or 14 professionals and 2.8% or 6 holding top management positions.

In terms of length of service, the majority, 37.6% or 80 respondents had served for between 1 and 4 years, followed by 36.6% or 78 respondents who had been in service for more than 10 years. Ethnic-group wise, the larger composition of respondents were Malays with 43.2% or 92 respondents. This is followed by the Natives of Sabah with 82 respondents. The data on the level of highest formal education attained revealed that 55.9% or 119 respondents were bachelor degree holders, 18.3% or 39 respondents were diploma holders, 10.8% or 23 respondents held postgraduate degrees and 10.3% or 22 respondents held *Sijil Pelajaran Malaysia.*

Majority of the respondents (38.4%/82 respondents) were within the age range of 35 to 44. The youngest and oldest respondents for this study aged 20 and 67, respectively. In assessing the respondent's individual net-worth, approximately 39.0% earned between RM3,501 and RM6,000, 24.4% earned between RM1,501 and RM3,500 and about 22.1% earned between RM6,001 and RM10,000. This indicates that all the respondents were fairly compensated and paid well above the requirement of the minimum wage as described under Section 2 of National Wages Consultative Council Act 2011. According to Malaysia's National Human Resource Centre, the wages have similar meaning to "wages" under section 2 of the Employment Act 1955 or Sabah Labour Ordinance (Cap.67) and Sarawak Labour Ordinance (Cap.76) whereas the "minimum wages" refer to "basic wages only, excluding any allowances or other payments" (http://www.nhrc.com.my). The minimum wage requirement for FT Labuan is RM920 per month. Notwithstanding the above, over 52.1% of the respondents perceived that they only had enough to cover basic needs while 6.6% believed that they did not have enough and spent beyond their means.

Descriptive Statistics Analysis

Mean and standard deviation for the variables in the study are shown in Table 1 and Table 2. The variables in the study were financial literacy, financial behaviour, financial stress and financial behaviour. Apart from financial literacy, the other variables were measured by using a five-point Likert scale ranging from "not satisfied (1)" to "very satisfied (5)" for financial well-being; "strongly disagree (1)" to "strongly agree (5)" for financial behaviour; and "never (1) to "always (5)" for financial stress.

Descriptive Evidence on Financial Literacy

Two sets of questions adopted from Van Rooij, Lusardi and Alessie (2011) were designed to measure financial literacy and to be able to distinguish respondents' different levels of knowledge in financials. The first set of questions aimed at measuring the basic financial skills which are a pre-requisite for day-to-day financial transactions. It covers, among others, the understanding of basic concepts such as compound interest, inflation, time value of money and money illusion.

Table 1: Basic Financial Literacy Questions

Basic Financial Literacy Questions		Correct (%)	Incorrect (%)	Do Not Know (%)
1	Compound interest	84.02%	8.22%	7.76%
2	Principal plus compound interest	72.15%	19.18%	8.68%
3	Inflation	64.38%	15.53%	20.09%
4	Time value of money	60.73%	28.31%	10.96%
5	Money illusion	65.30%	28.31%	6.39%

Table 2: Advanced Financial Literacy Questions

Advanced Financial Literacy Questions		Correct (%)	Incorrect (%)	Do Not Know (%)
1	Equity shares	57.99%	26.03%	15.98%
2	Long period returns	26.94%	58.45%	14.61%
3	Highest fluctuations	87.21%	4.57%	8.22%
4	Risk diversification	54.34%	23.29%	22.37%
5	Relationship: interest rate & bond prices	30.14%	38.36%	31.51%

Of the 213 respondents, 84% or 184 respondents provided the correct answer to the first question, which was one of the three well-established basic financial literacy questions devised by Lusardi and Mitchell (2006) for the United States Health and Retirement Study in 2004 (Lusardi, 2008). Of those who got the first question on compound interest wrong, 19% may have undertaken a simple interest calculation, thereby ignoring the interest accruing on both principal and interest. The rate of correct answer for question two decreased to 72% or 158 respondents.

The proportion of "Do Not Know" answers increased to about 20% or 44 respondents for question three when asked about simple understanding on inflation, again in the context of a simple financial decision. The proportion of correct answers also decreased to 64% or 141 respondents. The percentages of incorrect answers provided for questions four and five on the basic understanding of the concept of time value of money and money illusion were the same at 28%.

Table 3: Profile of Respondents with Wrong Answers

Respondents with Wrong Answers for All Basic Financial Literacy Questions	Number of Respondents	%
Company Status		
Private	62	40.52
Government/GLCs	91	59.48
Gender		
Male	50	32.68
Female	103	67.32
Age Group		
Between 20 years old - 30 years old	31	20.26
Between 31 years old - 40 years old	52	33.99
More than 40 years old	70	45.75

These may not be comforting findings, especially considering that these respondents have already dealt with many financial decisions during their lifetime. From the five basic financial literacy questions, it is surprising that only 29% (n=213) of the respondents correctly answered all five questions. By analysing the proportion of the 71% (n=213) who answered either incorrectly or "do not know" answers, it was discovered that as per Table 4.4, almost 60% comprised respondents from the government/GLCs; the female respondents outweighed the male counterparts by 67% and the majority or 46% of these respondents were from the age group of over 40 years. The profile of respondents with wrong answers is shown in Table 3.

Some of these findings are consistent with several past studies. Bernheim (1995; 1998) was one of the first to emphasize that most individuals lack basic financial knowledge and numeracy. This was followed by the works of Lusardi and Mitchell (2007b) and Smith and Stewart (2008) who discovered the same evidence on financial literacy in the United States and in other countries and reported similar findings. In terms of gender comparison, the finding is also consistent with past literature discussed earlier that male college students in Malaysia have a higher level of financial knowledge as compared to their female counterparts (Falahati, Paim, Ismail, Haron & Masud, 2011; Lim, Osman, A.B.U., Abdul Jamal, Mohidin & Mail, 2013).

In terms of the age group, the majority of the respondents came from the age group of 40 years or older. This revelation is similar to the findings of Lusardi and Mitchell (2011b) that financial illiteracy was more prevalent among young people and the elderly.

Descriptive Evidence on Financial Behaviour

Results in Table 4 showed that respondents cohesively agreed that financial planning is needed for emergency savings, for retirement, financial plans need improvement, the need for record-keeping for debts payment, saving for long-term, making improvement in spending plans, paying of all bills before the deadline, making comparisons prior to asking for loans or using credit cards, discussing with spouses on financial issues, clearing all outstanding credit every month, spending as planned, saving for retirement, need for adequate insurance and saving for emergency. Nonetheless, almost all have disagreed that saving is for short-term purposes.

Table 4: Financial Behaviour Items

No.	Items	Mean	Std. Deviation
1	Financial planning is needed for retirement	4.676	0.7481
2	Planning is needed for emergency savings	4.718	0.6698
3	Improvement of financial plans is needed	4.643	0.6328
4	Paying all bills before the deadline	4.512	0.6841
5	Clearing all outstanding credit every month	4.432	0.7594
6	Making comparisons prior to asking for loans or using credit cards	4.502	0.6979
7	Discussing with spouse on financial issues	4.488	0.7243
8	Spending as planned	4.413	0.7512
9	Making improvement in spending plans	4.516	0.6701
10	Having a record keeping for debt payment	4.54	0.6548
11	Saving is for short-term	2.329	1.2267
12	Saving is for emergency	4.113	1.0535
13	Saving is for long-term	4.54	0.6899
14	Saving is for retirement	4.38	0.753
15	Adequate insurance needed	4.16	0.8026

Note: Scale from 1 (strongly disagree) to 5 (strongly agree)

Descriptive Evidence on Financial Stress

The findings from the analysis to measure financial stress faced by the respondents were calculated based on the percentage scores. The results showed that the statement of "delay in payment always makes me worry" recorded the highest percentage (42.7%) among the employees, followed by "cannot sleep because of worrying over bill payments" (14.1%), "worry over medical cost" (9.9%) and "current financial situation conditions make me more restless and moody" (9.4%). The remaining five items had low percentages scores relating to the statement on "stress makes me fall sick easily" (4.7%), "not able to support myself financially in eating better food" (4.2%), "not able to support myself financially in time of sickness" (3.8%), "I am suffering depression and it increases/decreases my weight" (3.8%) and "I have high blood pressure because of stress" (1.4%).

From the results, it can be concluded that delay in paying bills and having sleepless nights thinking over it, worrying about medical costs and about current financial situation were among the most frequent situations faced by the respondents. The worrying over late payments was mainly due to worrying to pay additional interest charges and penalties.

Those with a high level of financial stress were found to display low productivity at work as the time spent at the workplace was more focused on being upset about their personal finances. If left to fester, the employees' anxieties on personal finances may hinder their work performance. According to Allison (2016), financial stress brought about negative consequences to employees as well as their employers and families.

Descriptive Evidence on Financial Well-Being

Table 5 shows the mean score for each statement used in this section. The findings showed that, by ranking, the respondents were quite neutral when it came to paying their monthly bills, or ability to control personal finances, ability to manage personal finances, accessibility to a sum of RM1,000 for emergency purposes, current financial condition, overall financial situation and current financial adequacy. This shows that the respondents were either not responding truthfully on the state of his/her financial well-being or preferred not to disclose the real financial situation.

Nevertheless, it shows that the respondents were not really satisfied when they were asked about their concerns on their level of preparedness towards retirement savings, the frequency of salary running out before the next pay day, concern on today's financial situation, concern on overall personal finances and comfort level on current financial situation.

Table 5: Financial Well-Being Questions

No.	Items	N	Mean	Std. Deviation
1	Overall financial situation	213	3.023	0.9783
2	Concern on today's financial situation	213	2.854	0.902
3	Current financial condition	213	3.028	0.9159
4	Current financial adequacy	213	3.019	0.9613
5	Comfort level on current financial situation	213	2.789	0.9404
6	Level of confidence towards retirement savings	213	2.878	0.9586
7	Salary runs out before next pay day	213	2.859	1.0135
8	Have no problems paying monthly bills when falls due	213	3.531	1.0751
9	Ability to control personal finances	213	3.385	0.9478
10	Ability to manage personal finances	213	3.376	0.9366
11	Easy to get [accessibility to] a sum of RM1,000 for emergency purposes	213	3.244	1.2873

Note: Scale from 1 (not satisfied) to 5 (very satisfied)

The results also show that the respondents were less satisfied when they were asked about their concern on overall personal finances, the ease of getting sum of money if an emergency happens, having enough money to pay off debt or loan, having enough money to cover retirement life and they were also less satisfied about today's financial situation.

Common Method Variance

Podsakoff, MacKenzie, Lee and Podsakoff (2003) have identified common method biases for acquiring data in behavioural research. The CMV refers to the amount of spurious correlations shared among variables because of the common method used in collecting data (Buckley, Cote & Comstock 1994; Malhotra, Kim & Patil, 2006). For the current study's data analysis, Harman's single-factor test was used to check for any common method variance (CMV) because several variables were collected from the same source. Due to its simplicity and because it can be applied in a study that utilizes a single method to collect the data, it is by far the most widely known and applied approach for detecting method bias.

Another analytic approach to detecting CMV is by applying Harman's Single Factor Test. This test requires that all variables be entered together by assuming that, if all variables load on one factor accounting for all of the variance or one factor accounts for a majority of the variance, there is a high level of common method variance present. Therefore, the exploratory factor analysis is used that generates nine factors resulting in eigenvalue greater than 1.0. The said factor analysis results explain 67.199% of the variance with first factor of 22.566%. This provides evidence that common method variance was not a concern (Allen & Yen, 2001).

Measurement Model

As illustrated in Table 6, all three indicators namely item loadings, AVE and CR stood at 1.000, respectively for each single construct, that meets the requirement of the validity and reliability of the measurement model. The results showed that the loadings for all the measurement items of the constructs ranged between 0.574 and 0.860, which exceeded the cut off value of 0.50. Furthermore, the average variance extracted (AVE) for each of the constructs were in the range of 0.505 to 0.563, which also exceeded the recommended value of 0.50 (Hair et al., 2010; Fornell & Larcker, 1981). The composite reliability for all the items ranged between 0.861 and 0.934, which exceeded the recommended value of 0.70 (Hair et al., 2010). In evaluating the discriminant validity of the model, tests were performed as to whether the square root of AVE for each construct is greater than the correlation with each other's construct (Fornell & Larcker, 1981).

Table 6: Convergent Validity

Construct	Items	Loading	AVE	CR
Financial Literacy	FLTAD	1.000	1.000	1.000
Financial Behaviour	FINBEHAV1	0.836	0.505	0.900
	FINBEHAV10	0.653		
	FINBEHAV2	0.805		
	FINBEHAV3	0.806		
	FINBEHAV4	0.670		
	FINABEHAV6	0.789		
	FINABEHAV7	0.605		
	FINABEHAV8	0.574		
	FINABEHAV9	0.600		
Financial Stress	FINSTRESS2	0.664	0.556	0.861
	FINSTRESS3	0.854		
	FINSTRESS4	0.784		
	FINSTRESS5	0.767		
	FINSTRESS7	0.636		
Financial Wellbeing	FINWB1	0.714	0.563	0.934
	FINWB10	0.744		
	FINWB11	0.736		
	FINWB12	0.779		
	FINWB2	0.690		
	FINWB3	0.860		
	FINWB4	0.817		
	FINWB5	0.814		
	FINWB6	0.631		
	FINWB8	0.714		
	FINWB9	0.727		

As shown in Table 7, the squared AVE values of all latent variables meet the Fornell and Larcker's criterion. Overall, the measurement model in this study was satisfactory with the evidence of adequate reliability, convergent liability and discriminant liability.

The results presented in Table 8 reveal that the HTMT values for all latent variables range from 0.07 to 0.612, which are smaller than HTMT.85 (Kline, 2011). Therefore, based on the afore-mentioned results, the correlation between any two sets of constructs in this study is acceptable and found to be satisfactory and adequate based on Kline's criterion. In summary, overall, the measurement model in this study is fit and valid to be used to assess the structural model's parameters including to create paths representing the hypothesis among the latent variables.

Table 7: Discriminant Validity (Fornell and Larcker Criterion)

No.	Construct	FB	FLT	FS	FWB
1	Financial Behaviour	**0.711**			
2	Financial Literacy	0.179	**1.000**		
3	Financial Stress	-0.163	-0.125	**0.745**	
4	Financial Well-Being	0.166	0.235	-0.540	**0.750**

Note: Diagonals represent the square roof of the AVE while the off-diagonal represent the correlations.

Table 8: Discriminant Validity (HTMT Criterion)

No.	Construct	FB	FLT	FS	FWB
1	Financial Behaviour				
2	Financial Literacy	0.131			
3	Financial Stress	0.150	0.140		
4	Financial Well-Being	0.140	0.240	0.610	

Structural Model Estimation

The structural model validity is examined using the coefficient of determinations (R^2) and path coefficients. The value of R^2 represents the variance amount of the dependent constructs that are enlightened by the independent constructs. Fundamentally, the higher the R^2 values the higher the predictive ability of the structural model. As suggested by Hair, Sarstedt, Hopkins and Kuppelwieser (2014), the substantial R^2 value is 0.75, whereas R^2 values of 0.50 and 0.25 are moderate and weak, respectively. In estimating the structural model and testing the hypothesized relationships, a sub-sample of 500 was run in the bootstrap procedure in order to generate the path coefficients and t-value results. The results for the structural model relationships and the significance of hypotheses testing are shown in Table 9.

Coefficient of Determination (R^2)

According to Chin (2010), the value of R^2 has to be at least 0.67 to be considered substantial, 0.333 to be considered moderate and 0.190 to be considered weak. In this study, the R^2 value for the dependent variable (financial well-being) was 0.323 while mediating variable (financial stress) was 0.036 as shown in Figure 2. The R^2 values for the dependent variable (financial well-being) and mediating variable (financial stress) was above 0.190 but below 0.333, therefore indicating a weak model.

Hypothesis Testing

A 500 re-sample of bootstrapping procedure was run in order to generate the t-values to assess if the direct relationships were significant. T-values were used to determine the significance of the hypotheses in the study. Table 9 shows the results of t-values after the bootstrapping procedure.

Based on the outcome shown in Table 9, there was no significant correlation between financial literacy and financial stress. The t-values and p-values were not significant at 1.208 and 0.228, respectively. Thus, H1 is supported. In addition, by assessing the R^2 value, only 3.6 percent of the variance in financial stress can be explained by financial literacy. This means that there could be other factors that affect the respondents' financial literacy level.

Meanwhile, on the relationships between financial literacy and financial well-being, there was a significant correlation whereby the t-values and p-values were significant at 2.691 and 0.007, respectively. Thus, H2 is also supported. The assessment of R^2 value indicates that a total of 32.3 percent of the variance in financial well-being can be explained by financial literacy.

Further, the results show that there was no significant correlation between financial behaviour and financial stress with t-values and p-value at 1.236 and 0.217, respectively. Based on these findings, H3 is supported. Meanwhile, there was no significant correlation between financial behaviour and financial well-being with t-values=0.834 and p-values=0.405. Therefore, H4 is not supported.

Lastly, the mediating variable of financial stress was evidenced to have a significant correlation with the dependent variable i.e. financial well-being. The t-values and p-values were significant at 8.736 and 0.00, respectively. Thus, H5 is also supported.

Furthermore, Table 9 also shows the effect size (f^2). According to Cohen (1988), f^2 of 0.02 is considered small, 0.15 is considered medium, and 0.35 is considered large. The highest f^2 was for the relationship between financial stress and financial well-being which has a large effect size of 0.37. The relationship between financial behaviour and financial well-being has the lowest effect size which was 0.004.

Table 9: Structural Model of Hypothesis Testing

Hypothesis	Relationships	Std. Beta	Std. Error	t-values	P Values	Results	R^2	f^2	VIF
H1	Financial Literacy -> Financial Stress	0.099	0.082	1.208	0.228	Supported	0.036	0.010	1.033
H2	Financial Literacy -> Financial Well-Being	0.161	0.060	2.691	0.007	Supported	0.323	0.037	1.043
H3	Financial Behaviour -> Financial Stress	-0.145	0.117	1.236	0.217	Supported		0.021	1.033
H4	Financial Behaviour -> Financial Well-Being	0.054	0.064	0.834	0.405	Not Supported		0.004	1.055
H5	Financial Stress -> Financial Well-Being	-0.511	0.059	8.736	0.000	Supported		0.372	1.037

Note: t-values > 1.65*(p<0.05); t-values > 2.33** (p<0.01)

Mediation Analysis

Bootstrapping the indirect effect method by Preacher and Hayes (2004 and 2008) is applied to test the mediation analysis. In Table 10, the results show that the bootstrapping analysis revealed the LL = -0.208, UL = 0.133 does straddle a 0 in between which indicates that there is no mediation. Thus, H6 is not supported. Likewise, for H7, the results show that the bootstrapping analysis revealed the LL =-0.027, UL =0.132 does straddle a 0 in between which indicates that there is no mediation. In this regard, H7 is also not supported.

Table 10: Mediation Analysis

Hypothesis	Relationship	Indirect Effect	Std. Error	t-values	P Values	LL	UL	Results
H6	Financial Literacy -> Financial Stress-> Financial Well-Being	0.74	0.062	1.198	0.231	-0.208	0.133	Not Supported
H7	Financial Behaviour -> Financial Stress -> Financial Well-Being	0.051	0.043	1.185	0.236	-0.027	0.132	Not Supported

Note: t-values > 1.96*(p<0.05); t-values > 2.58** (p<0.01)

Assessment of Predictive Relevance (Q^2)

Chin (2010) argued that apart from examining the magnitude of the R-square as a criterion for predictive relevance, the predictive sample reuse technique as developed by Stone (1974) and Geisser (1975) can also be applied. The technique, which represents a synthesis of cross-validation and function fitting is based on the perspective that the prediction of observables or potential observables is of much greater relevance than the estimation of what are often artificial construct-parameters (Geisser, 1975).

The sample reuse procedure has been contended as fitting the soft modelling approach of PLS and takes after a blindfolding technique that precludes a part of the information for a specific block of indicators amid parameter estimations and after that attempts to evaluate the omitted part by utilizing the estimated parameters. According to Fornell and Cha (1994), there is a predictive relevance if construct's cross validated redundancy value is more than 0 while there is an insufficient predictive relevance if the said value is less than 0.

Table 11 shows that the Q^2 values for financial well-being and financial stress are more than 0, indicating that the model developed in this study was proven to have sufficient predictive relevance as suggested by Hair et al. (2014).

Table 11: Construct Cross Validated Redundancy

	SSO	SSE	Q^2 (=1-SSE/SSO)
Financial Stress	1,065.00	1,048.85	0.015
Financial Well-Being	2,343.00	1,961.37	0.163

Hypotheses Summary

There were seven hypotheses in this study. Out of these seven, only four hypotheses were supported and those were H1, H2, H3 and H5. The other three hypotheses were not supported and, in the case of testing for mediation, there was no evidence of mediation effect. Table 12 summarizes the results of the hypotheses developed in this study.

Table 12: Summary of Hypothesis Testing

Hypothesis number	Statement of Hypothesis	Results
H1	There is a positive relationship between financial literacy and financial stress.	Supported
H2	There is a positive relationship between financial literacy and financial well-being.	Supported
H3	There is a positive relationship between financial behaviour and financial stress.	Supported
H4	There is a positive relationship between financial behaviour and financial well-being.	Not Supported
H5	There is a positive relationship between financial stress and financial well-being.	Supported
H6	Financial stress mediates the relationship between financial literacy and financial well-being.	Not Supported
H7	Financial stress mediates the relationship between financial behaviour and financial well-being.	Not Supported

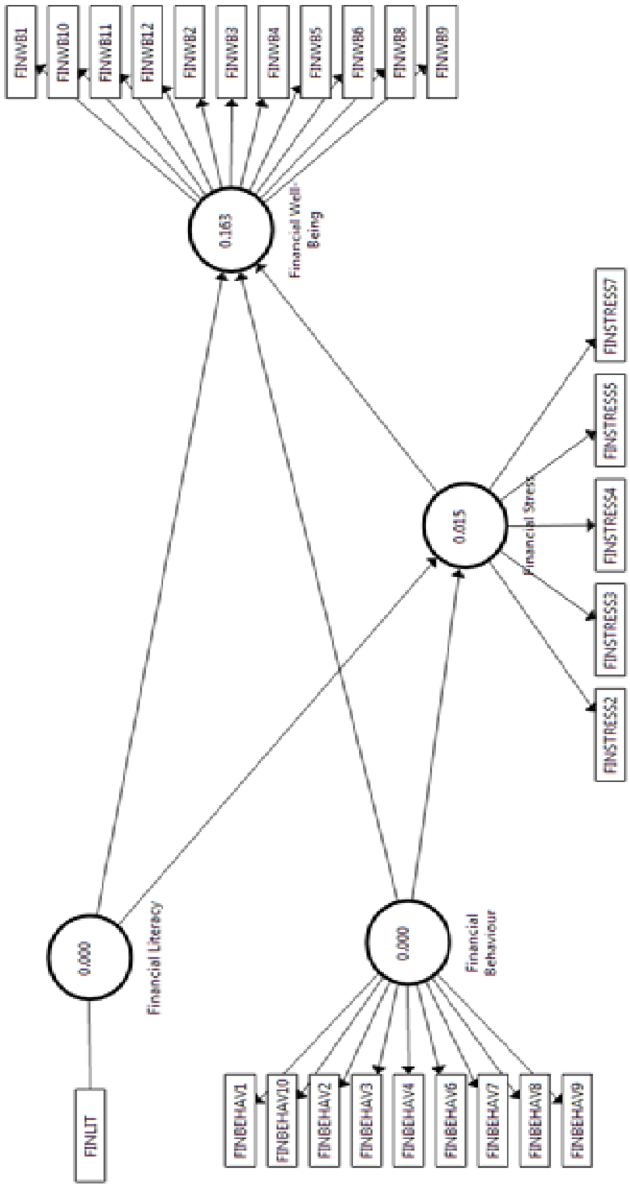


Figure 2: Results of the Path Analysis (Assessment of Q^2)

DISCUSSION AND CONCLUSION

This paper addresses the issues concerning the relationship between financial literacy and financial well-being, the influence of financial literacy on financial well-being, the relationship between financial behaviour with financial stress and financial well-being and lastly the mediating role of financial stress on financial behaviour and financial well-being.

The results indicate that there are negative correlations between the level of financial literacy (basic and advanced financial literacy) and financial stress among workers in FT Labuan. This finding is consistent with the study of Sabri and MacDonald's (2010), a study which found a negative correlation on the role of financial literacy towards savings behaviour and financial problems of college students in Malaysia. This result shows that workers who scored high marks on financial literacy are perceived as having high knowledge on both basic and advanced financial knowledge. The negative relationship confirmed that workers with adequate financial knowledge tend to have less financial stress. These workers are able to manage their finances well as they have better understanding of their finances.

The relationship between financial literacy and financial well-being indicates a two-fold result as there is no significant relationship between basic financial literacy and financial well-being but there is a positive relationship between advanced financial literacy and financial well-being. This could be the result of the determinant of individual well-being not merely confined to the acquisition of one's financial knowledge alone. Majority of the respondents are employees who serve with the government-linked companies (GLCs) or statutory bodies and government that made up to a total share of 63.8%. These employees are deemed to be financially secured as compared to the private sector workers. The employees can resort to seeking financial advice and guidance from reliable information sources, for example on insurance advice, as depicted by Calcagno and Monticone (2015). Workers of public and private sectors FT of Labuan collected in this sample work in financial industries (banks, insurance companies, trust companies and others) and are exposed to vast financial policies and procedures, products, and transactions. With this exposure, the respondents are perceived to have equipped themselves with adequate financial knowledge and have good financial behaviour and will end up with better financial well-being.

This study also shows a striking finding that monetary concept as simple as compound interest is not known to the respondents. One of the ways to impart financial knowledge is via financial education. Financial education can be implemented either via tertiary education or education at work. It is believed that financial education may prove to be beneficial in improving financial literacy which will eventually affect a person's financial well-being. A major component of financial resilience is savings. Insufficient savings and adequate financial knowledge in expending savings could lead to financial stress as many people are living month-to-month, within one's means for survival and have nothing extra.

This study also shows that those with good financial behaviour exhibit less financial stress. This is supported by Delafrooz and Paim (2011) on Malaysian workers where individuals with better financial behaviour tend to have lower financial stress. Subsequently, past studies conducted by Kim et al. (2003) found that poor financial management was negatively related with good financial well-being. However, this study found a contradictory result in terms of financial behaviour and financial well-being. The result shows that even though the respondents practised good financial behaviour, they still ended up with poor financial well-being. This could be due to the fact that financial behaviour is not the only factor that could influence a person's financial well-being. Other factors such as psychological determinants (future time perspectives and retirement goal clarity) and demographic variables (number of children, household income, level of education) might have a bigger influence on the respondents' financial well-being.

Financial stress is said to have an adverse effect on an individual's physical and mental health (Saunders, 1998). The results in this study indicate that in the presence of financial stress as a mediator for financial behaviour and financial literacy, all relationships are still insignificant. This finding confirms that financial stress could have a direct relationship to financial well-being as suggested by Saunders (1998).

It could be suggested that the improvement of an individual's and families' financial well-being will have a positive impact on quality of life and happiness, general well-being and mental health and the quality of interpersonal relationships. Financial service providers or financial advisors will be able to learn more on how people behave financially and can identify intervention work in order to facilitate financially-sound behaviours. The knowledge gained could be used to improve their services and help promote good financial well-being. In addition, the policy makers should support and promote compulsory checking on the financial standing of potential recruits prior to on-boarding new staff to ensure that they are not financially-stressed employees. As evidenced in past studies, financially stressed employees can have a huge impact on work performance.

In conclusion, an aggressive promotion on financial literacy and the importance of financial education (either at tertiary level or at the workplace) should be the main agenda in education policy. As confirmed by past research, individuals well-equipped with financial knowledge will exhibit better financial behaviour and improved financial well-being. The active promotion of financial literacy and financial education among staff will be necessary to achieve good financial well-being.

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