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Financial Knowledge, Attitude and Behaviour of Young Working Adults in Malaysia

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Abstract: *A conceptual model was proposed based on the theory of planned behaviour to examine the relationship between financial knowledge, attitude, behaviour and financial literacy among young working adults in Malaysia. Perceiving financial literacy as a developmental process which includes knowledge and application dimensions, the proposed model was tested on a sample of 1915 young working adults from Klang Valley, Malaysia. Data was analysed using structural equation modelling (SEM). Results indicated financial education positively influenced financial knowledge which in turn, significantly predicted both financial attitude and behaviour. Attitude partially mediated the effect of knowledge on behaviour. Analysis revealed that in terms of financial attitude, "future and non-impulsiveness" was significant while in financial behaviour, "expenditure monitoring and saving behaviour" was critical. In terms of ethnic background, the Chinese possessed the highest financial knowledge and behaviour while Indians possessed the highest financial attitude. No gender difference was noted on any relationships. Initiatives and interventions on making financial education accessible as well as gradual change of attitude are recommended for immediate actions.*

Keywords: Financial attitude and financial literacy, behaviour, knowledge, theory of planned behaviour
JEL classification: I22, G41, I22

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1. Introduction

Millennials are trapped in a digital life style which contributes to their financial burdens (Asian Institute of Finance, 2015). Changing consumer patterns and easy access to personal debt facilities results in youths ending up in bankruptcy as they lose control over their finances. Among young Malaysians, a paucity of financial knowledge has been documented

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obvious despite government and private sector efforts (Jay, 2017). Malaysians are incapable of making responsible financial decisions for their own financial well-being (Tang Ruxyn, 2017). According to a 2015 report, 76% of Malaysians were not able to raise at least RM1000 in an emergency situation (Financial Stability and Payment Systems Report, 2015). Majority of youths depend on high cost borrowings, personal loans and credit card borrowings (Asian Institute of Finance, 2015). Despite increasing life expectancy in Malaysia, only 40% are financially ready for their retirement (Financial Stability and Payment Systems Report, 2015). Additionally, Malaysians are vulnerable to financial frauds and scams due to their poor financial management practices (Tang Ruxyn, 2017).

The issues surrounding lack of financial literacy among Malaysians has been empirically studied looking at medical practitioners (Anthony & Sabri, 2015), randomly selected adults (Folk, Beh & Baranovich, 2012; Mahdzan & Tabiani, 2013), public sector female employees (Sabri & Juen, 2014) and undergraduate students (Yew, Yong, Cheong & Tey, 2017). The focus was on the level of financial knowledge (Anthony & Sabri, 2015), effect of financial literacy on individual savings (Mahdzan & Tabiani, 2013), demographics and personal financial wellbeing measures (Folk et al., 2012), socio economic characteristics on individual financial knowledge (Loke, 2015) and impact of financial socialisation factors and gender differences (Yew et al., 2017). Anthony and Sabri (2015) pointed out medical practitioners lack financial knowledge and guidance while Mahdzan and Tabiani (2013) found that financial literacy significantly influences individual savings. However, these studies concluded that overall, financial literacy among Malaysians is lower compared with rest of the world and with differences among ethnic groups and gender. Yew et al. (2017) examined the association between attitude and behaviour focusing on financial education and gender. They recommended financial education should be strengthened in schools and universities. However, earlier studies had shown that higher financial education does not necessarily guarantee a responsible financial behaviour (Lusardi & Mitchell, 2011) and even within Malaysia, people with higher financial knowledge experience financial difficulties (Loke, 2015). This shows financial literacy has not yet been fully studied or understood.

It is important to understand how an individual develops an ability to make correct financial decisions (Hung, Parker & Yoong, September 2, 2009). Incorporating financial knowledge, attitude and behaviour together in a model will generate a comprehensive understanding on the topic (Serido, Shim & Tang, 2013). While acknowledging the challenge of creating a multidisciplinary measure, Potrich, Vieira and Mendes-Da-Silva (2016) emphasised the need for various measures to enhance financial literacy that targets minimum financial knowledge, attitude and behaviour.

It is clear financial literacy has not been studied as a developmental process, except for financial behaviour (Serido et al., 2013). Therefore, a comprehensive analysis is vital in order to understand the causal relationship between knowledge, attitude and behaviour in a financial literacy model which is the primary objective of the current study.

Studies on financial literacy mainly use econometrics analysis. However, the current study uses a novel approach to examine financial literacy in a broad context. Based on the theory of planned behaviour (TPB), the current study contributes to existing literature by investigating how financial literacy is developed through the interaction of behavioural components of individuals, such as financial education, knowledge, attitude and behaviour using a sample of young working adults in Malaysia. Stolper and Walter (2017) pointed out financial decisions of citizens are different based on their geographical locations. This will help relevant authorities to develop and implement context-specific strategies.

2. Literature Review

2.1 Understanding financial literacy

Studies have documented individuals and families with higher financial literacy have an advantage (Conger, Conger, Matthews & Elder, 1999; Schmeiser & Seligman, 2013) higher wealth accumulation as they buy shares at the stock markets and engage in active savings (Agarwal, Amromin, Ben-David, Chomsisengphet & Evanoff, 2010; Gathergood & Disney, 2011).

According to Huston (2010), definition of financial literacy has evolved from merely being knowledgeable on financial matters to the ability to make use of such literacy on day to day financial decisions. However, the terms financial literacy, knowledge and financial education have been used interchangeably in the literature. For instance, Fernandes, Lynch Jr and Netemeyer (2014) used financial literacy and financial knowledge interchangeably. Huston (2010); Potrich et al. (2016) argued both these terms are conceptually different and warned future researchers the dangers of using them interchangeably. Huston (2010, p. 306) defined financial literacy as "measuring how well an individual can understand and use personal finance-related information". Hung et al. (September 2, 2009) agreed with this definition adding that financial literacy consists of knowledge, attitude, behaviour and ability to make financial decisions. Financial literacy is centred on individuals and focuses on the inputs that shape individual behaviour (Lusardi, 2012).

Huston (2010) elaborated that financial literacy has two dimensions: 'understanding' and 'use'. Financial knowledge belongs to 'understanding' while application of such knowledge is the 'use'. The knowledge that shapes financial decision-making is what constitutes financial literacy, which consists of dimensions of understanding and use (Huston, 2010). In essence, a financially literate person has the confidence and ability to use such knowledge (Huston, 2010) and to make personal financial decisions (Lusardi & Mitchell, 2014).

There is an ongoing debate on the importance of financial capability and financial literacy. For instance, Johnson and Sherraden (2007) emphasised on the importance of financial capability over literacy, while Lusardi (2012), Lusardi and Mitchell (2014) argued on the applicability and usefulness of financial literacy over financial capability. The concept of financial capability has been criticised for dictating the best behavioural guideline that is applicable to all. Instead, financial literacy acknowledges that individuals are unique in their own ways and are responsible for their own decisions. Therefore, studies on financial literacy emphasise on the need for empowering individuals than dictating one's best financial behavioural that is applicable to everyone.

2.2 A behavioural perspective to understand financial literacy

There are many inconsistencies in conceptualising and defining financial literacy (Ex: Huston 2010). Many empirical studies are inspired by life-cycle model of consumption and saving (Modigliani & Brumberg, 1954) and consumption function (Friedman, 1957). Thereafter, theoretical modelling has developed from two-period model of saving and portfolio allocation (Willis, 2008) to multi-period life cycle model (Jappelli & Padula, 2013). As Jappelli and Padula (2013) theorised, a person along with his financial literacy level will acquire more wealth over a life cycle period. Lusardi (2012) stressed upon the need to study financial literacy with focus on the input that shapes the behaviour. On the other hand, the financial literacy model suggested by Willis (2008) is based on the argument that depending on the return on the effort, an individual then decides to acquire financial knowledge. Hence, the current study investigates the applicability of TPB (Theory of Planned Behaviour) to understand financial literacy process from a behavioural perspective. There are few studies which are based on behavioural approach to financial literacy, such as Bruine deBruine et al., 2007; Parker & Fischoff, 2005; Finucane et al., 2005; Levin et al. 2007; cited by (Hung et al., September 2, 2009; Serido et al., 2013). Those were conceptualised as a developmental process rooted on the cognitive development theory and social cognitive theory.

However, the TPB is the most suitable theory related to financial behaviour as it predicts and understands human behaviour (Xiao, 2008) and it explains an individual's intention to perform given an accepted behaviour (Ajzen, 1991). It has been widely used across different disciplines and research related to family planning, weight loss, voting, alcoholism (Ajzen, Fishbein & Fishbein, 1980), credit counselling and investment decisions, mortgage (Xiao, 2008). The theory has been well supported by these studies (Ajzen, 1991; Armitage & Conner, 2001). As per TPB, a person's behaviour which is determined by attitude, subjective norm and the perceived control, is backed by his behavioural intention (Ajzen, 1991). According to Xiao (2008), based on TPB, a person will show an attitude on a future behaviour based on an evaluation of such a behaviour which is determined by the perception on the outcome of such behaviour. As Xiao (2008) explains, TPB emphasises on the factors of an individual's actual behavioural choices. In short, a person will always assess the outcomes of his or her behaviour and that assessment shapes the person's attitude.

In order to examine financial literacy based on a behavioural approach, it is important to understand how TPB can explain an individual's behaviour. The TPB posits intention is the best predictor of a behaviour which in turn is determined by attitude and social normative perception towards the behaviour (Montano & Kasprzyk, 2015). As per the explanation given by Montano and Kasprzyk (2015), TPB posits a perceived control over a behaviour which is an evolution to the theory of reasoned action (TRA). Financial decision making and managing personal finances are personal choices based on what individuals' experience and are exposed to. As financial literacy is defined as a person's confidence and ability to use financial knowledge (Huston, 2010) and to make personal financial decisions (Lusardi & Mitchell, 2014) which he or she has a perceived control over, TPB can be used to understand how financial literacy process works. Further, Lusardi (2012), Lusardi and Mitchell (2014) argued in favour of financial literacy over financial capability, whereby the former is based on the fact individuals are unique and responsible for their own financial decisions. Therefore, financial literacy acknowledges the perceived control of an individual in his or her financial decisions and choices. An individual will not show an accepted financial behaviour unless the value of such behaviour is being perceived by the person, which is subject to his attitude and in which he has a control over.

Hence, it can be argued that even if a person possesses financial knowledge, the actual financial behaviour will be decided by the person's attitude which is the foundation for the proposed model in the current study.

3. Methodology

3.1 Data collection

The population of this study are young Malaysian working adults residing in Klang Valley, Malaysia. The sample was selected from young working adults visiting shopping malls in Klang Valley. Based on the National Youth Policy in Malaysia, individuals between ages of 18 and 40 are defined as youths. A non-probabilistic sampling technique, namely convenient and quota sampling, was used to collect data.

The five regions of Klang Valley: Northern, Eastern, Southern, Western Klang Valley and Central Kuala Lumpur were selected based on the size of the population. A total of 80 shopping malls was selected based on data from Malaysia Shopping Malls (PPK). Targeting 50 respondents from each shopping mall, a total of 4000 customers were expected to visit the malls. The employees worked in those shopping malls and customers who do not manage their own finances due to mental incapacity were excluded. As shown in Appendix 1, the sample comprises main ethnic groups in Malaysia. Questionnaires were distributed at the selected shopping malls from 1st January 2017 until 15th April 2017 with a total number of 1915 useable questionnaires with the response rate of 47.88%.

3.2 Instrument and measurement

A set of questionnaires was prepared in Bahasa Melayu, Chinese and English to collect data. A pre-study with the help of experts was conducted to ensure the validity of the questionnaires followed by a pilot study with 40 respondents.

Financial education measures were adapted from Australia and New Zealand Banking Group Limited (ANZ) (2015) and has two perspectives: individuals' "financial background" and "exposure/experience to financial education programs, sessions and opportunities." The financial background was assessed in terms of influence of friends and families and exposure to financial education was assessed in terms of attending seminars, workshops and consulting financial planners or counsellors. Responses were analysed on a five-point Likert type scale ranging from 'never' to 'very often'. The instrument items for financial knowledge were adapted from Zottel, Perotti and Bolaji-Adio (2013). Respondents were asked to answer eight multiple choice questions to measure their actual financial knowledge. These included questions on their knowledge on division, inflation and impact of inflation, interest rate, interest on loan, compound interest, financial risk and investment diversification. Respondents' financial knowledge scores were obtained after summing up all the correct answers. The financial

attitude were adapted from Atkinson and Messy (2012); Australia and New Zealand Banking Group Limited (ANZ) (2015); Bolaji-Adio, Iarossi, Perotti and Zottel (2013); Zottel et al. (2013). It included 10 items measured on a five-point Likert type scale ranging from 'Strongly Disagree' to 'Strongly Agree' which measured two perspectives, namely attitude towards the "future, non-impulsiveness" and attitude towards the "achievement orientation". Financial behaviour was measured based on a 15 - item scale adapted from Kempson, Perotti and Scott (2013); World Bank (2013); Yoong, Mihaly, Bauhoff, Rabinovich and Hung (2013), measured on a five point Likert type scale. It included behaviour related to budgeting, over spending, expense monitoring and saving, planning for old age and unexpected expenses. As for financial literacy, the five scale items were adapted from Kempson et al. (2013); World Bank (2013); Yoong et al. (2013) to assess financial literacy related to proper financial management practices and decisions.

3.3 Framework and techniques of analysis

3.3.1 Research framework

The proposed conceptual model consists of two dimensions of financial literacy: knowledge and application. Perceiving financial literacy as a process, the input, throughput and output are conceptualised. It presumes two alternative paths to financial literacy. Therefore, it goes beyond the knowledge dimension up to the application dimension as suggested by Huston (2010). It is proposed that an individual's financial knowledge is a result of financial education which leads to an acceptable financial behaviour. The first path presumes it to occur through the changed attitude due to improved financial knowledge and the second path is a direct path where it is hypothesised the increased knowledge will generate an immediate change in behaviour. The proposed research framework is shown in Figure 1.

The proposition in the proposed model is, when individuals' knowledge on financial matters increase, it will empower them through a positive change in attitude towards finance. This ultimately can produce accepted financial behaviours. Borden, Lee, Serido and Collins (2008); Jorgensen and Savla (2010) Shim (2010) noted financial knowledge and financial attitude are associated with each other and Jorgensen and Savla (2010); Serido et al. (2013) revealed that attitude acts as a mediator between financial knowledge and behaviour. Hayhoe, Leach, Allen and Edwards (2005) found a correlation between financial knowledge and attitude while no such correlation was found by Potrich et al. (2016).

3.3.2 Financial education, financial knowledge and financial literacy

Potrich et al. (2016) defined financial education as a development process in order to facilitate people to make correct decisions and thereby successfully manage personal finance, while financial literacy refers to how such knowledge and abilities are used. This definition clearly differentiates between financial education, knowledge and literacy. Financial education is always related to personal exposure and experience. Most individuals cite their personal experience as the most important source of their financial learning (Hilgert, Hogarth & Beverly, 2003). One of the most important roles of financial education is to act as a preventive measure to manage debt (Anderloni & Vandone, 2011).

Regarding financial knowledge acquisition, Willis (2008) argued an individual will always compare the cost and return when acquiring financial knowledge. In Malaysia, the level of education, type of profession and government pensions scheme have significantly impacted the financial knowledge of working adults (Loke, 2015). However, according to Hung et al. (September 2, 2009) the financial behaviour and the ability of an individual is influenced by his financial knowledge and confidence which may not be correlated to actual knowledge. Therefore, there is a difference between actual and perceived financial knowledge of an individual. Hence, Huston (2010) emphasised a knowledge gap due to the difference between perceived and actual financial knowledge which may hinder good personal financial management practices.

No solid evidence was found on the relationship between financial education and individual performance on financial literacy tests. For example, Folk et al. (2012) studied the relationship between financial learning and individuals retirement planning preparation and found a mediating effect between financial learning and personal financial planning among the older age groups. Jump$tart Survey (Mandell, 2008) shows a linkage between financial education and high school students' financial knowledge levels though not significant. Further Mandell and Klein (2009) and Peng, Bartholomae, Fox and Cravener (2007) found financial education has no significant impact on knowledge.

However, Meier and Sprenger (2013) pointed out that participation in financial educational programmes resulted in more forward-looking behaviours among the respondents. Carpena, Cole, Shapiro and Zia (2011) also found that financial education did impact and improve financial awareness among youths in India, although this may not necessarily improve their financial decisions. Folk et al. (2012) found financial education helps an individual to be updated on latest financial knowledge and which in turn impacts positively on financial satisfaction. Similarly,

Batty (2015); Bruhn, de Souza Leão, Legovini, Marchetti and Zia (2013); Danes, Huddleston-Casas and Boyce (1999); Go, Varcoe, Eng, Pho and Choi (2012) reported knowledge gains after implementation of financial educational programmes. Recently, Fernandes et al. (2014), using the term intervention to refer to the financial education and other forms of exposures, showed good effects of financial education on financial literacy. Therefore, the following hypotheses are proposed:

> Hypothesis 1: *Financial education positively influences financial knowledge*

3.3.3 Financial knowledge and financial behaviour

Recently, literature has focused on showing the relationship between financial knowledge and behaviour (Jappelli & Padula, 2013; Lusardi, Michaud & Mitchell, 2013; Willis, 2008). However, the relationship between financial knowledge and financial behaviour has not always been proven a causal relationship and as Hastings, Madrian and Skimmyhorn 2012 stated, cited by Batty (2015), such a relationship is not necessarily implied. For instance, Bir (2016) suggested financial knowledge was not significant in predicting financial management practices.

Hogarth and Beverly, (2003) cited by Serido et al. (2013) on the other hand showed a positive association between financial knowledge and behaviour. Similarly, Serido et al. (2013) pointed to a significant effect of financial knowledge on financial behaviour concluding that if knowledge on financial matters are internalised, it can result in an accepted financial behaviour. Similarly, recent studies revealed higher financial knowledge resulted in higher standard of financial behaviour (Hilgert et al., 2003; Loke, 2015; Potrich et al., 2016; Servon & Kaestner, 2008). Therefore, the following is developed:

> Hypothesis 2: *People with higher financial knowledge have strong financial behaviour*

3.3.4 Role of financial attitude in financial literacy

Lusardi (2012) explains with examples that apart from the financial education and the knowledge level of an individual, the final decisions and behaviours of individuals are shaped by their personal preferences and economic circumstances. The TPB posits that the behavioural intention is determined by attitude and the social normative perception towards that behaviour (Montano & Kasprzyk, 2015) and attitude has been identified as an important mediating variable in financial literacy.

In the context of finance, attitude refers to the psychological tendency to decide what is best and second best after considering the good and the bad when making a particular investment decision which in other words, endorses some behaviour (Eagly & Chaiken, 1993). An individual's financial behaviour is mostly visible if the knowledge on financial matters have been internalised (Serido et al., 2013). Such internalisation can be captured and better explained through a financial attitude component in a model. Financial attitudes and intrinsic behaviour also matter in financial literacy (Loke, 2015). Only a few studies considered the effect of financial attitude on financial practices and behaviours. For instance, Agarwalla, Barua, Jacob and Varma (2015); Atkinson and Messy (2012); Potrich et al. (2016); Shockey (2002) considered knowledge, attitude and behaviour as components of financial literacy. It is evident financial behaviour can be changed with better financial knowledge and attitude (Hayhoe et al., 2005) and in turn, positive financial attitude results in better financial management practices (Bir, 2016). Further, Bir (2016) concluded it is financial attitude that has greater influence on financial knowledge in financial management practices among fresh graduates. Serido et al. (2013) found subjective financial knowledge is significantly associated with financial attitude in the context of financial self-belief.

3.3.5 Financial behaviour

Financial behaviour is a major determinant of financial literacy (Fernandes et al., 2014; Lusardi & Mitchell, 2014; Potrich et al., 2016) and financial knowledge and attitude precedes financial behaviour (Hayhoe et al., 2005; Potrich et al., 2016). A longitudinal study provides clear evidence that financial knowledge affects self-belief about finance (which includes financial attitude) which in turn influences financial behaviour and finally affects financial and overall well-being of an individual (Serido et al., 2013). The relationship between financial attitude and financial behaviour can be understood in the studies related to credit card holders. This studies noted a positive association between attitude and behaviour of credit card holders (Chien & Devaney, 2001; Danes & Hira, 1990; Rutherford & DeVaney, 2009). Experimental studies supported the notion financial knowledge via financial education programmes influences financial attitude which has an impact on financial behaviour. For example, it was found that students who received financial education had improved financial attitude and a year later had an improvement in financial behaviour compared with the control group (Batty, 2015). Therefore, the following are developed:

> Hypothesis 3: *Financial attitude mediates the relationship between financial knowledge and financial behaviour*

Hypothesis 4: *Financial behaviour positively influences financial literacy*

3.4 Technique of analysis

Data was analysed using Partial Least Square (PLS) structural equation modelling (SEM) A statistical approach, PLS, is used in modelling comprehensive multivariable relationships among observed and latent variables which allows examining of causal relationships between variables (Vinzi, Chin, Henseler& Wang, 2010).

3.5 Evaluation of the measurement model

3.5.1 Reliability and validity

Financial education explained 64.16% of the variance with factor loadings between 0.642 and 0.865. Financial knowledge explained 55.41% of the variance. Financial behaviour explained 59.25% with factor loadings between 0.437 and 0.858. Financial attitude had factor loadings between 0.582 and 0.822 which explained 57.97% of variance. Financial literacy explained a variance of 59.39%.

Cronbach's Alpha values assess the internal consistency reliability. Financial knowledge, attitude, behaviour and literacy had alpha values 1, 0.792, 0.791 and 0.811 respectively while for financial education it was 0.644. However, according to Hinton, McMurray and Brownlow (2004), an alpha value higher than 0.5 is moderate and acceptable. Table 1 shows the composite reliability (CR) exceeded the acceptable level of 0.7 (Hair Jr, Anderson, Tatham& Black, 1998) for all constructs and thereby, reliability was established.

Outer loadings and average variance extracted (AVE) were assessed in order to conclude on convergent validity. Factor loading threshold was kept at 0.5 as minimum of 0.5 is acceptable when items in the construct have greater alpha values (Barclay, Higgins& Thompson, 1995; Chin, 1998). The cut off for AVE is 0.5 (Fornell & Larcker, 1981). However, this was not achieved for financial attitude and behaviour (see Table 1). Acknowledging that attitude and behaviour are complex and difficult to measure, the emphasis placed on CR is much higher than AVE and it is recommended to continue measuring the model with lower AVEs provided that CR is higher than 0.60 (Fornell & Larcker, 1981). As mentioned above, CR exceeded 0.7.

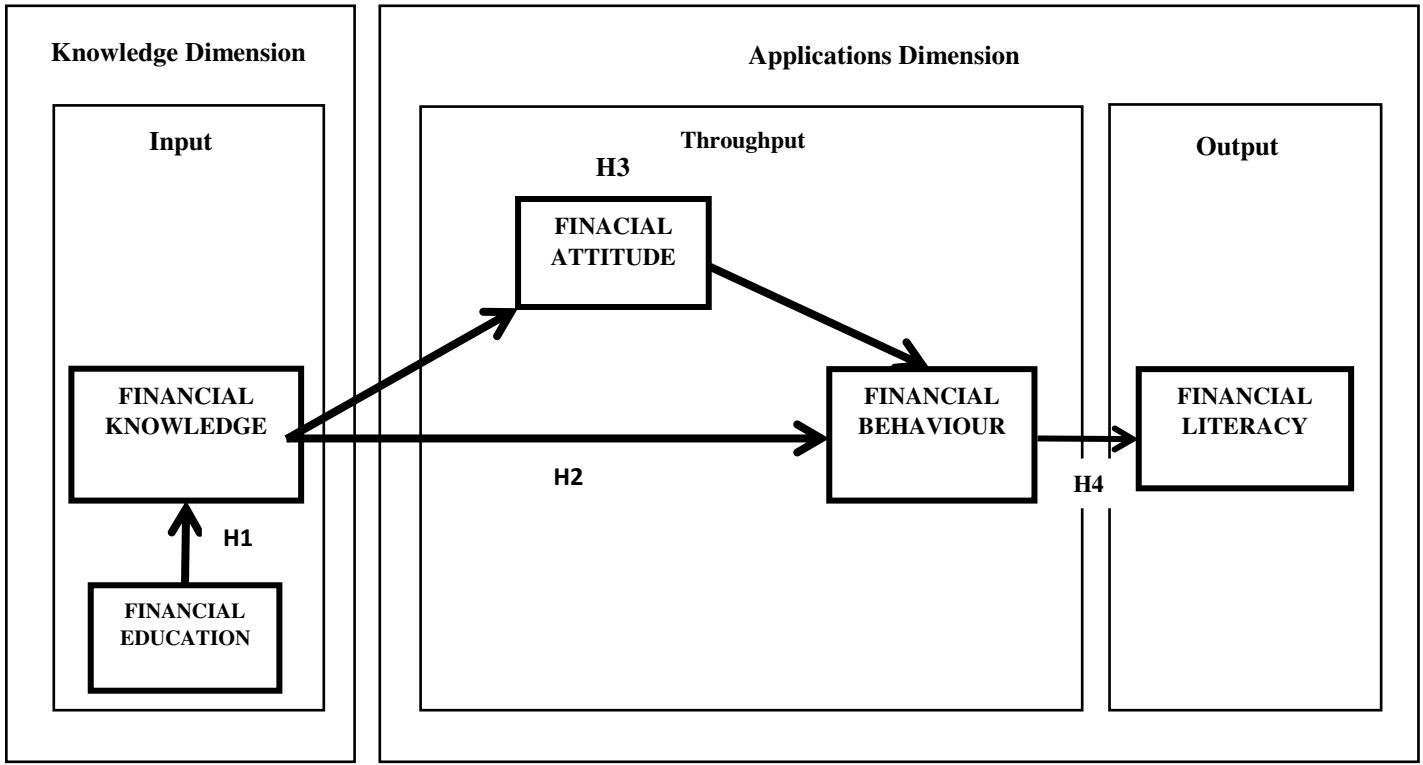

Figure 1: Research Framework

In Appendix 2, 3, 4 and 5, the discriminant validity was established based on Fornell-Larcker criterion coefficients and Hetrotrai-Monotrait Ration (HTMT), cross loadings and outer VIF values.

Table 1: Confirmatory Factor Analysis

Latent Constructs	Items	Loadings	Composite Reliability	AVE
Financial Attitude	FA1	0.581	0.848	0.446
	FA2	0.767		
	FA3	0.525		
	FA4	0.708		
	FA5	0.663		
	FA6	0.708		
	FA7	0.692		
Financial Behaviour	FB1	0.588	0.837	0.367
	FB2	0.563		
	FB3	0.618		
	FB4	0.732		
	FB5	0.557		
	FB6	0.546		
	FB7	0.574		
	FB8	0.547		
	FB9	0.693		
Financial Education	FE1	0.599	0.792	0.668
	FE2	0.989		
Financial Knowledge	FK	1.000	1.000	1.000
Financial Literacy	FL1	0.765	0.869	0.623
	FL2	0.81		
	FL3	0.752		
	FL4	0.829		

In order to assess common method variance (CMV), inner VIF values were observed. Any factor level inner VIF value greater than 3.3 was considered as a signal of CMV biasness (Kock, 2015). Referring to Appendix 4, as inner VIF values are less than 3.3, the measurement model is free from CMV biasness. Blindfolding procedure was used to assess the predictive relevance of the model. The cross validated redundancy statistics in Table 2 depict the model is capable of predicting the population as Q2 > 0 (Chin, 1998). The omission distance was set at 7.

Table 3.1: Construct Cross Validated Redundancy

Construct	SSO	SSE	Q^2 (=1-SSE/SSO)
Financial Attitude	13,405.000	12,943.446	0.034
Financial Behaviour	17,235.000	16,427.823	0.047
Financial Knowledge	1,915.000	1,882.641	0.017
Financial Literacy	7,660.000	7,644.714	0.002

4. *Analysis and Results*

4.1 Profile of the respondents

Majority of the respondents were Malays (57.2%) followed by 31.5% Chinese and the rest of Indians which are consistent with national population statistics (Appendix 1). In terms of gender, 58% were women while more than 55% of the respondents were aged between 21 and 30 years. Majority were managers and professionals accounting for 22.1% of the respondents followed by technicians (Appendix 6).

4.2 Evaluation of the structural model

After a bootstrapping of 5000 samples, the hypotheses were tested for their significance. Financial education is a significant predictor of financial knowledge ($t= 5.844$, $p<0.05$) whereby H1 was supported. Financial knowledge was found to be significantly and positively related to financial behaviour ($t= 5.906$, $p<0.05$) whereby H2 was supported too. However, it was found that financial behaviour was significantly and negatively related to financial literacy ($t= 3.268$, $p<0.05$) whereby H4 was not supported. Results are shown in Figure 2.

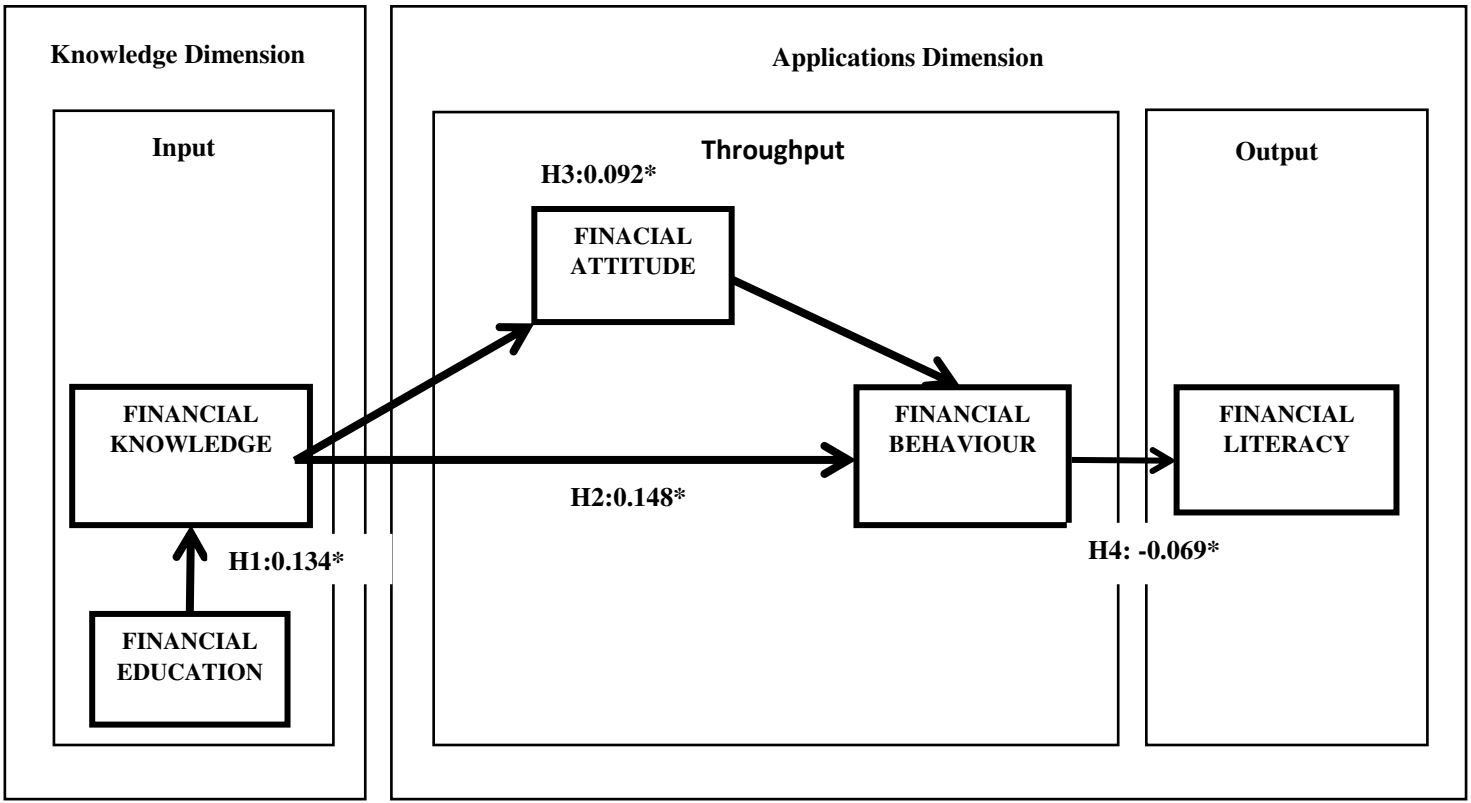

Figure 2: Conceptual Model

Note: *p<0.05.

4.3 Testing the mediating of financial attitude

Before testing the mediating effect of financial attitude on the relationship between financial knowledge and behaviour, their direct relationships were investigated. As Baron and Kenny (1986) explained, a mediation is predicted when there is a strong relationship between the independent variable and the dependent variable. As shown in Table 3, the direct relationship between financial knowledge and behaviour is significant (t= 5.906, p<0.05). Further, the attitude's relationships with financial knowledge (t=12.921, p<0.05) and behaviour (t=12.792, p<0.05) are significant too, qualifying to test for a mediation. As depicted in Table 4, as both direct effect and indirect effect are significant, it was concluded that financial attitude partially mediates the relationship between financial knowledge and behaviour. In order to confirm its partial mediation, variance accounted for (VAF= Indirect Effect/Total Effect) was calculated. The VAF was 38% (0.092/0.240) confirming it as a partial mediation as a VAF between 20% -80% is a partial mediation (Hair Jr, Hult, Ringle& Sarstedt, 2016).

Table 3: Hypotheses Testing Results

Paths	**Beta**	**SE**	***t***	***p* -values**
Financial Attitude -> Financial Behaviour	0.319	0.025	12.792	0. 000
Financial Behaviour -> Financial Literacy	-0.069	0.021	3.268	0. 001
Financial Education -> Financial Knowledge	0.134	0.023	5.844	0. 000
Financial Knowledge -> Financial Attitude	0.289	0.022	12.921	0. 000
Financial Knowledge -> Financial Behaviour	0.148	0.025	5.906	0. 000

Table 4: Mediation Analysis Results

	Beta	**SE**	***t***	**P<0.1**
Total direct effect				
Financial Knowledge -> Financial Behaviour	0.148	0.025	5.906	0. 000
Total indirect effect				
Financial Knowledge -> Financial Behaviour	0.092	0.01	8.986	0. 000

4.4 Testing group differences

In order to analyse the effect of discrete moderating variables which are divided into groups, such as gender, stakeholder groups, multi group analysis (MGA) was used (Vinzi et al., 2010). As it can be seen in Table 5, gender difference is not seen in any of the paths of the model concluding that gender has no effect. As shown in Appendix 7, the Chinese and Indians possessed the highest financial knowledge and behaviour and the highest financial attitude respectively.

Table 5: Effect of gender

Path	Beta difference (female - male)	*p*-value (female vs male)
Financial Attitude -> Financial Behaviour	0.080	0.053
Financial Behaviour -> Financial Literacy	0.028	0.620
Financial Education -> Financial Knowledge	0.133	0.998
Financial Knowledge -> Financial Attitude	0.036	0.793
Financial Knowledge -> Financial Behaviour	0.064	0.900

5. Discussion

This study explored the relationship between financial knowledge, attitude, behaviour and financial literacy from a behavioural perspective while perceiving financial literacy as a developmental process. First, financial education had a significant and positive influence on financial knowledge. As financial education acts as a preventive measure to control indebtedness (Anderloni & Vandone, 2011), the emphasis on providing adequate financial education to youth is obligatory. Yew et al. (2017) had emphasised on the importance of incorporating financial education in school and university curriculum. The current study analysed financial education in terms of "financial background" and "exposure/experience to financial education programs, sessions and opportunities". Out of the two aspects, "exposure and experience to financial education programmes" had the highest factor loading. This highlights the need to make financial education more accessible and available. Although educational background is less significant compared to with exposure aspect, it cannot be neglected in financial education. Good upbringing and proper family support for youngsters will confer benefits to result in higher financial knowledge.

Therefore, findings of the study are consistent with those of previous ones that parents are responsible to ensure youth are exposed to good parental role models.

Second, findings revealed that financial knowledge significantly and positively related to financial behaviour which is consistent with that Loke (2015), namely financial knowledge promotes a higher financial behaviour. However, the current study discovered that it is the indirect relationship between financial knowledge and behaviour that is significant. In other words, attitude plays a major role in converting knowledge to behaviour which leads to a fruitful outcome.

Additionally, financial attitude has a strong relationship with behaviour. Based on TPB, an individual always assess outcomes of a behaviour which is determined by his attitude on which he or she has a perceived control over. Therefore, youths must be well communicated about healthier outcomes of possessing better financial knowledge and proper personal finance management. This is so they can evaluate the effort and outcomes by themselves. Many youths live beyond their means and they do not have proper financial planning and therefore, a well organised efforts are needed to change their attitude. Since even those with higher financial knowledge face financial difficulties (Loke, 2015), it is important to possess appropriate attitude and this is conveyed through the proposed conceptual model. A significant negative relationship was found between financial behaviour and financial literacy among majority of the respondents.

Financial attitude's factor analysis revealed detailed insights. Attitude measures included two perspectives: attitude towards "future, non-impulsiveness" and attitude toward the "achievement orientation". Items related to "future, impulsiveness" had the highest loadings. This suggest that young working adults must be educated on the importance of setting long term financial goals and the means to achieve them. Malaysian youths face challenges related to high cost borrowings, personal loans and credit card borrowings (Asian Institute of Finance, 2015) and face financial distress as they live beyond their means due to their lack self - control (Loke, 2015).

No gender differences were observed on any paths of the model indicating that financial literacy awareness programmes can be designed to benefit the youths at large in Malaysia. Unemployment among females and overall youth unemployment is higher than adult unemployment in Malaysia (International Labour Organization, 2016). Since life expectancy rate is also increasing (Financial Stability and Payment Systems Report, 2015), young working adults are overburdened to provide for their dependents while being prepared for their own retirements. Previously, government employees who are entitled for a pension scheme had lesser motivation and possessed less financial knowledge (Loke, 2015) though

they too are vulnerable to financial shocks. Government pension schemes may serve as a security net only to government employees. Therefore, an adequate amount of financial knowledge with appropriate attitude at young age will uplift lives, regardless of gender, occupation and government pension schemes. It was found the Chinese possess the highest financial knowledge and behaviour while Indians possess the highest financial attitude. Nevertheless, higher financial knowledge and financial literacy help to reduce economic disparities between ethnic groups (Loke, 2015).

6. Conclusion and Implications

Unlike prevailing econometrics analysis in finance, the study was aimed at examining financial literacy from a behavioural perspective based on theory of planned behaviour (TPB). This study has shown lack of financial literacy and poor financial management practices affect many young Malaysians and therefore, financial education is vital to guide their financial behaviour. Further, it was found financial attitude mediates the effect of financial knowledge on behaviour and hence, youths need have correct attitude to benefit from financial knowledge. Financial behaviour was observed to be lower among the young working adults though gender had no effect in any of the relationships. Hence, the study findings and implications are applicable to all Malaysians.

Findings emphasise that financial education must be introduced in schools and colleges as part of their curriculum. In addition, parents have a responsibility by being good role models which would shape their children's financial behaviour at early stages of their lives. Further, authorities must ensure the availability and ease of access to financial experts and counsellors for young working adults for them to receive proper advice. Findings on the importance and the influence of attitude on overall financial literacy must be well communicated to independent financial counsellors and advisors to have an impact on their services.

Further, young working adults must be made aware on the importance of possessing right financial behaviour by budgeting, control over their spending, practise living within means, continuous monitoring of expenses, practice of saving and planning for old age and unexpected expenses. Families and educational institutes must encourage the young to save, train them not to be impulsive with unnecessary, unplanned buying and to be achievement orientated. For this purpose, they must be guided to consider alternative financial products, policies and companies before making any final decision on financial matters. Further, they must be educated on the importance of expenditure monitoring and saving behaviour.

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Appendices

Appendix 1: Sample based on Ethnicity

Ethnicity	Frequency	Percent
Malay	1096	57.2
Chinese	603	31.5
Indian	176	9.2
Other	40	2.1
Total	1915	

Appendix 2: Discriminant Validity Statistics

	Financial Attitude	Financial Behaviour	Financial Education	Financial Knowledge	Financial Literacy
Fornell-Larcker Criterion					
Financial Attitude	**0.668**				
Financial Behaviour	0.360	**0.605**			
Financial Education	0.113	0.309	**0.818**		
Financial Knowledge	0.289	0.243	0.126	**1.000**	
Financial Literacy	0.105	-0.071	-0.091	-0.020	**0.789**
Heterotrait-Monotrait Ratio (HTMT)					
Financial Behaviour	0.393				
Financial Education	0.122	0.431			
Financial Knowledge	0.319	0.243	0.115		
Financial Literacy	0.154	0.160	0.169	0.031	

Appendix 3: Loadings and Cross Loadings

	Financial Attitude	Financial Behaviour	Financial Education	Financial Knowledge	Financial Literacy
FA1	**0.581**	0.244	0.052	0.122	0.052
FA2	**0.767**	0.376	0.088	0.252	0.031
FA3	**0.525**	0.116	0.060	0.181	0.077
FA4	**0.708**	0.205	0.050	0.218	0.080
FA5	**0.663**	0.205	0.090	0.192	0.070
FA6	**0.708**	0.191	0.079	0.174	0.132
FA7	**0.692**	0.254	0.103	0.188	0.082

Appendix 3:(Continue)

	Financial Attitude	Financial Behaviour	Financial Education	Financial Knowledge	Financial Literacy
FB1	0.263	**0.588**	0.172	0.064	0.037
FB2	0.245	**0.563**	0.153	0.014	0.048
FB3	0.245	**0.618**	0.205	0.209	-0.038
FB4	0.343	**0.732**	0.171	0.199	0.028
FB5	0.141	**0.557**	0.163	0.169	-0.080
FB6	0.128	**0.546**	0.197	0.165	-0.131
FB7	0.105	**0.574**	0.246	0.076	-0.111
FB8	0.087	**0.547**	0.276	0.063	-0.153
FB9	0.247	**0.693**	0.197	0.231	-0.095
FE1	0.000	0.180	**0.599**	0.025	-0.138
FE2	0.124	0.306	**0.989**	0.134	-0.074
FK	0.289	0.243	0.126	**1.000**	-0.020
FL1	0.100	-0.044	-0.054	-0.039	**0.765**
FL2	0.085	-0.066	-0.065	-0.014	**0.810**
FL3	0.121	-0.019	-0.054	0.023	**0.752**
FL4	0.061	-0.067	-0.098	-0.013	**0.829**

Note: *Bold figures indicate that loadings are higher than 0.5 and loaded to their own constructs*

Appendix 4: Collinearity Statistics – Inner VIF Values

	Inner VIF Values			
	Financial Attitude	**Financial Behaviour**	**Financial Knowledge**	**Financial Literacy**
Financial Attitude		1.091		
Financial Behaviour				1.000
Financial Education			1.000	
Financial Knowledge	1.000	1.091		

Appendix 5: Collinearity Statistics – Outer VIF Values

Outer VIF Values	
FA1	1.291
FA2	1.560
FA3	1.215
FA4	1.581
FA5	1.453
FA6	1.705
FA7	1.537
FB1	1.948
FB2	1.916
FB3	1.255
FB4	1.515
FB5	1.349
FB6	1.344
FB7	1.973
FB8	1.900
FB9	1.416
FE1	1.291
FE2	1.291
FK	1.000
FL1	1.635
FL2	1.542
FL3	1.919
FL4	1.651

Appendix 6: Sample based on the Main Occupation

Main Occupation	Frequency	Percentage
Technician	110	5.7
Clerical/Administrative workers	341	17.8
Sales Personnel	258	13.5
Machinery and manufacturing workers	56	2.9
Labourer	107	5.6
Educator/Teacher/Lecturer	179	9.3
Finance-related professions	226	11.8
Self-employed/own or family business	215	11.2
Total	**1915**	

Appendix 7: Differences related to financial literacy among ethnic

	Malay				Chinese				Indian			
	Beta	**SE**	**t**	**p**	**Beta**	**SE**	**t**	**p**	**Beta**	**SE**	**t**	**p**
Attitude -> Behaviour	0.298	0.034	8.874	0.000	0.356	0.034	10.572	0.000	0.485	0.064	7.525	0.000
Behaviour -> Literacy	-0.068	0.050	1.352	0.177	-0.166	0.044	3.808	0.000	-0.149	0.111	1.345	0.179
Education-> Knowledge	0.146	0.031	4.788	0.000	0.126	0.041	3.058	0.002	0.173	0.070	2.453	0.014
Knowledge -> Attitude	0.255	0.030	8.645	0.000	0.337	0.043	7.854	0.000	0.366	0.062	5.924	0.000
Knowledge-> Behaviour	0.118	0.033	3.545	0.000	0.209	0.037	5.638	0.000	0.116	0.064	1.831	0.067