

Examining the Predictive Power of Financial Literacy and Theory of Planned Behavior on Intention to Change Financial Behavior

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ABSTRACT: This study attempts to examine the intention of financial behavioral change intention using extended Theory of Planned Behavior (TPB) to underpin the research's framework. Specifically, the objective of this study is to examine the effect of attitude, subjective norms and perceived behavioral control on intention to change the financial behavior. In addition to that, financial literacy is incorporated into the model as the antecedents influencing not only one's attitude, subjective norms, and perceived behavioral control towards change in financial behavior, but also directly towards intention to change the financial behavior. Data were collected from undergraduate students in Malaysia (millennial generation), and analysed using Partial Least Squares Structural Equation Modelling. The findings suggested that all claimed hypotheses were partially supported. Implication and contribution of the study were discussed to justify the significance of this research.

KEYWORDS -Theory of Planned Behavior (TPB), financial literacy, financial behavior, PLS-SEM

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I. INTRODUCTION

Behavior change on how people seek, use and process information have long been captivating topics among researchers. Even though human behavior are complex in nature, individuals are able to change their behavior on different occasions or reasons [1; 2]. Financial behavior change purpose is to assist individual pertaining to financial management and attitude that will guide individual to achieve their life and financial goals. Financial management is set of behavior and decisions with different degree of importance and ease of implementation depending to individual's needs, priorities, and skills.

Financial literacy on the other hand is knowledge pertaining to financial matters and the skills on how to make good use of financial knowledge as it is recognised as important for the individuals and the nation [3]. Financial literacy at individual level will lead to better financial decisions when it comes to risk management and improving individual's overall financial wellbeing [4]. At the same time, it helps the public to make better financial decisions, and protect consumers and investors at government level. It also helps prudent use of financial services to ensure financial market stability, confidence in financial markets and economic growth at national level. The lack of financial literacy may result in financial difficulties [5; 6], consumer and investor exposure to fraud, and instability of market that could jeopardize economic growth. Yet, empirical studies show level of financial literacy is low in advanced countries with detrimental consequences [7].

University students nowadays are facing a challenging time in their lives in making important financial decisions as they move from financial dependence to financial freedom. University students should have knowledge and skills to manage their expenses and income (from parents, loan and scholarship). For many students, the first year of university is considered as a major transitional phase where parental supervision and oversight is reduced and the students begin to achieve some degree of financial independence. When they enter university, many students are faced with financial responsibilities, such as paying bills, doing budgeting, and crediting for the first time in their lives. Studies by [8] reiterated that how well the students deal with those challenges or tests will largely depend on their levels of financial knowledge and behavior that they learnt before entering university. Another study by [9; 10; 11 and 12] in their studies revealed that most of times, the university students were not well-prepared for these responsibilities and they did not know how to manage their financial issues properly.

This study reviews extended theory of planned behavior (TPB) as a model of individual behavior change. This model could be useful for stakeholders, scholars and practitioners in financial counseling or policymakers to better understand the youths or for researchers to improve future research on the behavioral process of change financial behavior thus, motivate more research on the behavior of financial management. This study attempts to examine the intention of undergrads to change their financial behavior [13] using this extended theory of planned behavior (TPB) to brace the research's framework.

II. LITERATURE REVIEW

The theory of reasoned action [14;15], the theory of planned behavior [16;17;18], and the model of interpersonal behavior [19;20] are models of attitude-behaviour relations to underpin the intentions as a key role in the prediction of behavior. In this study, TPB was applied to financial behavioral prediction to understanding and predicting the determinants of financial-behavior. The inclusion of perceived control over the behavior in a modified version of Theory of Reasoned Action (TRA) is referred to as the Theory of Planned Behavior (TPB) [21]. The TPB introduced the concept of perceived control on the opportunities, resources, and skills necessary to perform a behavior to the TRA. The notion of perceived behavioral control is comparable to the notion of self-efficacy person's perception of individual to perform the behavior. TPB was employed to underpin the framework due to its ability to capture the predictive power of financial behavior change [18; 13].

TPB illustrated attitudes as an important determinant of Individual's intention towards changing financial behavior. Attitude manifests individual's specific behavior, whether to like or dislike certain outcomes [17;18]. An individual may react positively on certain thing if they perceived it to be good for them or react vice-versa [22]. Thus, the study perceives undergraduates are equipped with basic financial literacy to have a positive attitude towards changing their financial behavior [13]. TPB attempted to explain attitude-behavior relations by looking into the importance of examining attitudes and behavior relationship or by elucidating how attitudes combine with other factors which influence behavior.

Normative and behavioral beliefs in TPB are able to convey financial messages to encourage people to make right financial decisions. Social norm is social pressure influencing intention to change financial behavior of individual. The surrounding pressure towards individual to behave according to the normative belief of other people [17;18]. In certain occasion, an individual may refer to their social referent such as spouse, family or peers to get their opinion on a certain thing that may change their financial behavior [17]. Their social influence will depend on who are the individual preferred social referent and their willingness to act according to these preferences [22]. [15] had recommended that attitudes and social norms would affect behavior by endorsing the establishment of a decision or intention to act. The TPB therefore suggested that social norm should be measured along with attitude in order to capture both social and personal influences on behavior.

Perceived behavioral control is another important predictor of behavioral intentions in TPB. The ease or difficulty to perform a given behavior largely depends on the individual's perception in perceived behavioral control. The presence or absence of important resources or opportunities do not deter someone to perform certain behaviors as perceived behavioral control is dependent on control beliefs [17;18]. Therefore, this study suggested perceived behavioral control did influence the intention to change financial behavior [13]. In this study, TPB was applied to predict the volitional behaviors or behavior in which the individual has an absolute control although most behaviors demand resources, skills, opportunities, or co-operation to be performed effectively [22]. The concept of perceived behavioral control (PBC) was introduced to the TRA to form the theory of planned behavior (TPB) alongside with attitude and social norm [16; 17]. The theory recognizes that intentions are the key determinant of behavior, however the PBC also can directly predict behavior and/or moderate the relationship between intention and behavior when PBC accurately reflects the amount of actual control over the performance [18; 24].

III. RESEARCH METHODOLOGY

The samples for this study were undergraduate students of public universities in Malaysia. To ensure that the sample characteristics corresponded to the nature of the study, a non-probability quota sampling technique was adopted to ensure the collected data were indeed from valid sources. Sample size estimation is determined using G*power 3.0 analysis [25]. By using G-Power Analysis software, with the effect size of $f^2 = 0.15$, α error $pro = 0.05$, power $Gf = 0.8$ with a number of 4 tested predictor; therefore, 85 respondents would be the minimum sampling for this study. 500 questionnaires were distributed; and 454 completed and usable copies were collected. The variables were assessed using multiple items [26], and the data were then analyzed using SmartPLS 3.0 to examine the hypotheses [27].

3.1 Framework And Hypothesis Development

The literature hypothesized earlier claimed that attitudes, social norms, perceived behavioral control, and financial literacy are able to influence the intention towards changing financial behavior among undergraduate students of public universities in Malaysia. Fig. 1 depicted the research framework that contained statements of four variables investigated.

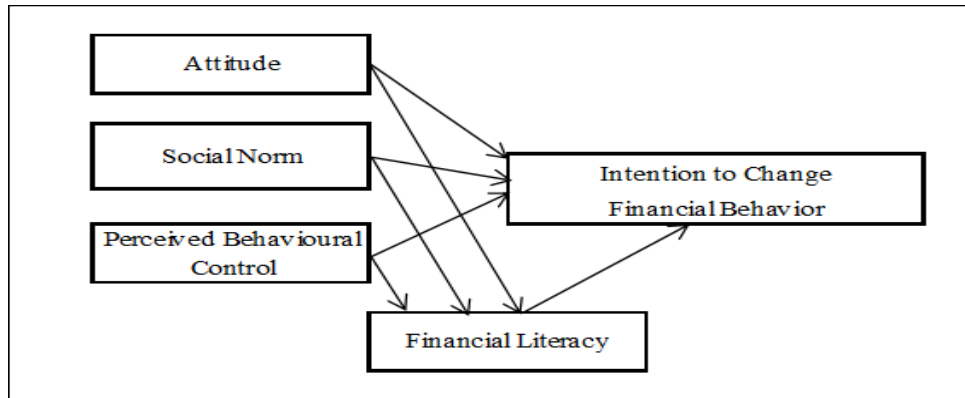


Fig. 1. Research Framework

Thus, ten hypotheses were formulated to direct the research problems and aims of the survey.

- H1: Attitude positively influences financial literacy.
- H2: Social norms positively influence financial literacy.
- H3: Perceived behavioral control positively influences financial literacy.
- H4: Attitude positively influence intention to change financial behavior.
- H5: Social norms positively influence intention to change financial behavior.
- H6: Perceived behavioral control positively influence intention to change financial behavior.
- H7: Financial literacy positively influences intention to change financial behavior.
- H8: Attitude positively influence intention to change financial behavior mediated by financial literacy.
- H9: Social norms positively influence intention to change financial behavior mediated by financial literacy.
- H10: Perceived behavioral control positively influence intention to change financial behavior mediated by financial literacy.

IV. RESULTS AND DISCUSSION

1.1 Sampling and Respondents Profiles

With a total of 454 respondents made up of millennial generation in Malaysia, the majority of the respondents (337) were female (74.2%) and the remaining (117) were male respondents (25.8%). 97.8% of the respondents were between 19-24 years old with 182 respondents majoring in Business, and 272 respondents majoring in Non-Business. The respondents' profiles were summarized in a report as shown in Table I.

Table 1. Respondents' Profile

Variable		Frequency	Percent
Gender	Male	117	25.8
	Female	337	74.2
Age	19-21	190	41.9
	22-24	254	55.9
	25-27	10	2.2
Majoring	Business	182	40.1
	Non-Business	272	59.9
Personal Finance	Yes	184	40.5
	No	270	59.4
Working Experience	Yes	329	72.5
	No	125	27.5
Place of Origin	Peninsular Malaysia	160	35.2
	Sabah	234	51.6
	Sarawak	60	13.2
Ethnicity	Malay	78	17.2
	Chinese	128	28.2
	Indian	6	1.3
	Sabah Natives	205	45.2
	Sarawak Natives	32	7.0
	Other	5	1.1

4.2 Measurement Model Assessment

Table 2 demonstrated the findings of construct reliability (CR) and convergent validity testing. The results validated that the constructs (or variables under investigation) had high internal consistency [28], and sufficient average variance extracted (AVE) to approve the convergent validity [29].

Table 2. Reflective Measurement Model Assessment

Construct	Item	Loadings	CR	AVE	Convergent Validity (Ave > 0.5)
ATT	Att1	0.781	0.843	0.642	Yes
	Att2	0.788			
	Att3	0.834			
PBC	PBC1	0.809	0.885	0.658	Yes
	PBC2	0.835			
	PBC3	0.807			
	PBC4	0.792			
SN	SN1	0.798	0.826	0.545	Yes
	SN2	0.768			
	SN4	0.722			
	SN5	0.657			

*SN3 item was deleted due to poor loading Composite Reliability < .708 (Hair et al., 2010, & Hair et al., 2014)

In Table 3, the formative constructs of financial literacy and financial behavior measured yield path coefficients of 0.924 and 0.843 respectively. As the scores were more than 0.70, the formatively measured constructs were thus seen to have sufficient degrees of convergent validity [30]. Besides, multi-collinearity between indicators were measured. Both indicators for formative constructs satisfy the VIF values and they were consistently below the threshold value of 5.0 [29], and also 3.3 [31] respectively. Hence, it could be concluded that collinearity did not reach critical levels in both of the formative constructs, and were not considered the issues in the estimation of the PLS path model. In addition, the significance and relevance of the outer weights of the formative constructs indicated that both formative indicators were significant, except for cash management and credit management in financial literacy. As previous research provided evidence of the relevance of these indicators for capturing the operational definition of the financial literacy [32; 33; 34; 35; 36], these indicators were thus retained in the financial literacy formative construct although its outer weights were not significant.

Table 3. Formative Measurement Model Assessment

Construct	Items	Convergent Validity	Weight	VIF	t-value weights	sig
Financial Literacy	Cash Management	0.924	0.009	1.150	0.034	0.973
	Credit Management		0.126	1.196	0.902	0.367
	Investment Knowledge		0.259	1.067	2.125**	0.034
	Insurance Knowledge		0.901	1.043	4.573**	0.000
Intention to change Financial Behavior	IFB1	0.843	0.580	1.487	10.962**	0.000
	IFB2		0.224	1.158	2.927**	0.002
	IFB3		-0.373	1.177	5.863**	0.000
	IFB4		0.709	1.214	23.991**	0.000
	IFB5		0.612	1.295	12.490**	0.000
	IFB6		0.719	1.483	22.389**	0.000
	IFB7		0.630	1.559	11.416**	0.000
	IFB8		0.184	1.125	2.463**	0.007
	IFB9		-0.223	1.129	2.686**	0.004

Note: > 1.96**

HTMT criterion was used to assess discriminant validity [27] as shown in Table 4. The result specified that the discriminant validity was well-established at HTMT0.85 [31]. Thus, there was no issue of multi-collinearity between items loaded on different constructs in the outer model. Hence, it was appropriate to proceed to the structural model assessment so as to test the hypotheses of the study. The measurement model was shown in Fig. 2.

TABLE 4. HTMT CRITERION

	ATT	PBC	SN
ATT	-		
PBC	0.166	-	
SN	0.544	0.442	-

Criteria: Discriminant validity is established at HTMT0.85 / HTMT0.90

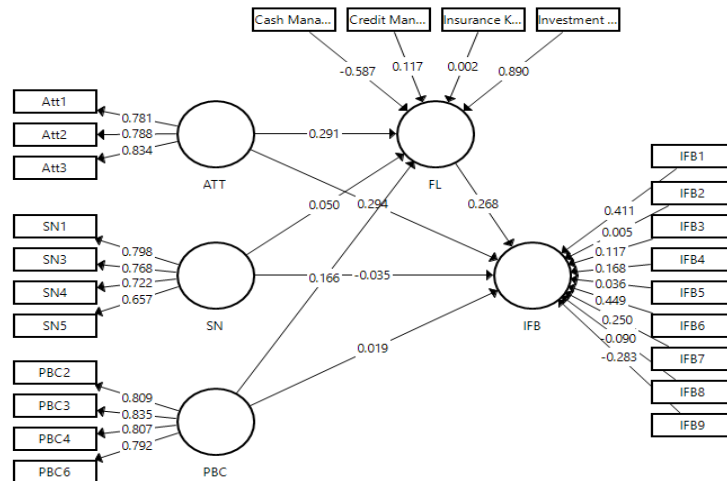


FIG. 2.MEASUREMENT MODEL

4.3 Structural Model Assessment

A 5000-bootstrap re-sampling of data was conducted to assess the hypotheses of the study [29]. Table 5 displayed the evaluation of path co-efficient, which was represented by Beta values for each path relationship. The results showed that only six out of ten hypotheses were supported. For direct effects, attitudes and perceived behavioral control were found to have influence on financial literacy. In addition, attitudes and financial literacy were also seen to have influence on the intention to change financial behavior among undergraduates in Malaysia. As such, hypotheses H1, H3, H4, and H7 were supported based on direct effects of structural model assessment. On the other hand, social norms did not have any influence on financial literacy in this study. The same goes to social norms and perceived behavioral control. These constructs did not have any influence on the intention to change financial behavior. Thus, hypotheses H2, H5, and H6 were not supported. For indirect effects, attitudes and perceived behavioral control did influence intention to change financial behavior but not social norms. Hence, hypotheses H8 and H10 were supported except for H9 on social norms. The structural model was shown in Fig. 3.

Table 5 also displayed the quality of the model. On the hypotheses which were tested to have significant relationships, all were found to have carried small effect size. The predictive relevance values for all four dependent variables were larger than 0, indicating that the independent variables were capable of predicting intention to change financial behavior, as signposted by Q² using blindfolding procedure [29].

TABLE 5. PATH COEFFICIENTS AND MODEL QUALITY ASSESSMENT

	Beta	S.E.	t-value	p-value	5.00%	95.00%	Decision	f ²	R ²	VIF	Q ²
Direct Effect											
H1: ATT -> FL	0.291	0.070	4.185	0.000	0.188	0.371	Supported	0.084	0.145	1.181	0.024
H2: SN -> FL	0.050	0.055	0.911	0.181	-0.023	0.158	Not Supported	0.002		1.313	
H3: PBC -> FL	0.166	0.061	2.721	0.003	0.072	0.253	Supported	0.029		1.132	
H4: ATT -> IFB	0.294	0.109	2.694	0.004	0.076	0.378	Supported	0.085	0.204	1.281	0.040
H5: SN -> IFB	-0.035	0.089	0.387	0.349	-0.160	0.136	Not Supported	0.001		1.316	
H6: PBC -> IFB	0.019	0.127	0.149	0.441	-0.168	0.251	Not Supported	0.000		1.165	
H7: FL -> IFB	0.268	0.095	2.822	0.002	0.122	0.406	Supported	0.077		1.170	
Indirect Effect											
H8: ATT -> IFB	0.078	0.033	2.384	0.009	0.030	0.124	Supported				
H9: SN -> IFB	0.013	0.016	0.818	0.207	-0.007	0.047	Not Supported				
H10: PBC -> IFB	0.045	0.021	2.131	0.017	0.012	0.078	Supported				

Path Coefficient 0.01, 0.05 (Hair et al. 2017)

Lateral Collinearity: VIF 3.3 or higher (Diamantopoulos & Sigouw 2006)

R2 ≥ 0.26 consider Substantial (Cohen, 1989)

F2 ≥ 0.26 consider Substantial (Cohen, 1989)

Q2 > 0.00 consider large (Hair, 2017)

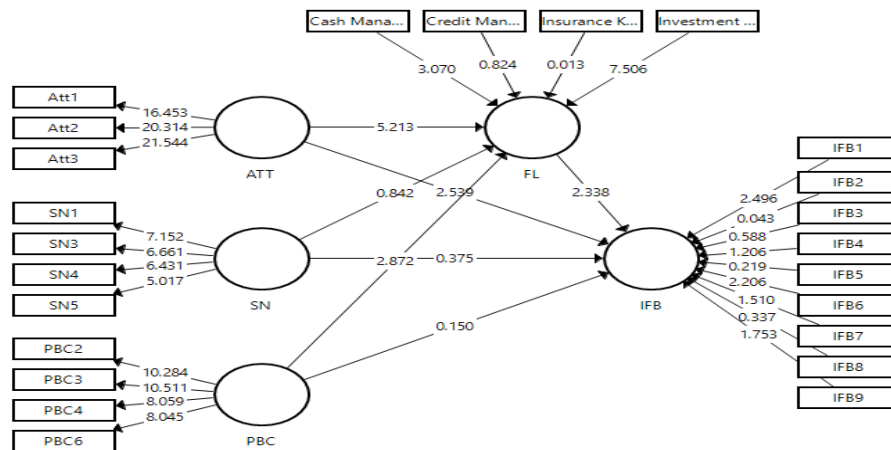


Fig. 3. Structural Model

V. CONCLUSION

The findings of this study raised several questions that might suggest further future research. Although we did not find support that suggested social norms did influence financial literacy or behavioral change intention nor the influence of perceived behavioral control on behavioral change intention or the mediation effect of financial literacy between the relationship between social norms and behavioral change intention, but this study hadable to explain the potential of applying TPB to explain individual behavioral change intention. Thus, the application of the TPB as a theory of individual behavior change to financial behavior for the financial educators both in formal and informal education systems was relevant to be used in the planning of financial education programs so as to help the millennial generation. The findings supported the significant roles of educators in helping to elevate undergraduates’ financial literacy [37; 6]. The findings also offered empirical evidences that financial literacy was an important extension of TPB as it did help to expand the ability of the theory to predict behavioral change intention. In fact, the discoveries had offered valuable insights particularly to the current literature where six out of ten hypotheses were supported.

When conducting this study, there were few limitations that could be considered in future. As this study was merely based on cross-sectional data rather than longitudinal data, it was difficult to confirm causal relationships among the variables. Thus, this study was regarded to be explanatory in nature. Thus, a qualitative or mixed method approach is highly recommended for future research. Future study should also consider other potential determinants of behavioral change intention such as social media to enhance financial literacy and improve financial behavior millennial generation in Malaysia. Such incessant exertions may contribute towards enhancing existing limited literature on this topic here in Malaysia as the progression of youth is somehow crucial to the nation as they are the future of our generation. The fact of having 68.6% Internet penetration with more than 21 million Internet users with almost 30.8 million population [38], and at the same time being the world highest user of WhatsApp [39], Malaysian’s authority should utilize social media as a platform to educate the public especially the youth on the importance of financial knowledge to the wellness of the society. The stakeholders must act now to find way on how social media can be utilized to manoeuvre the financial behavior and financial knowledge in Malaysia for the benefit and well-being of the nation. Many scholars had suggested that youths learn in new ways using the social media, and that educators should embrace these new platforms [40; 41]. In fact, [42] had observed that high-quality relationships with adults, educators, and peers would influence these social learning mechanisms e.g. peers might communicate what goals and behaviors are valued, through their status messages and wall.

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