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Determinants of Indebtedness: Influence of Behavioral and Demographic Factors

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Abstract: This study aims to examine the influence of behavioral and demographic factors on indebtedness by constructing a model using specific determinants. The exploratory method is used through the partial least square (SmartPLS) technique, by surveying 320 respondents in Kuala Lumpur, Malaysia. A self-administered questionnaire was administered to respondents, addressing both demographic and behavioral factors. The results confirmed four of the eight hypotheses stated. Among the determinants, risk perception had a highly significant relationship with both materialism and emotion, while indebtedness had a relationship with emotion and materialism. The findings also indicated that significant differences exist between indebtedness and behavioral factors on the basis of gender, marital status, age, income, and dependence on credit cards and loans. The results may assist various economic players to design better models for credit offerings and address the credit problem in the long term.

Keywords: indebtedness; behavioral factors; demographic factors; Malaysia

JEL Classification: G32; G110; M300

1. Introduction

Credit availability is helpful in ensuring household economic well-being. In Malaysia, particularly after the late-1990s Southeast Asian financial crisis, credit was apparently easily available (Yusoff et al. 2000). Consequently, rising household and individual debts resulted in unprecedented bankruptcy filings, which weakened the intended benefits of this credit availability. Various reports on Malaysian household debt profiles indicate that individuals' spending exceed their income and also that the number of bankruptcy cases in Malaysia is increasing dramatically. The reports also indicated a trend that suggests that the number of bankruptcy cases is more from the economically active age group of 35–44 years, males, and Malays (Loke 2016). Obviously, this presents a disturbing trend for the Malaysian government, which has consequently taken several steps to control the credit problem. However, considering the behavioral factors that quicken the propensity rate toward indebtedness as a given, rather than verifying it, may amount to overstretching assumptions and a policy response flaw (Ottaviani and Vandone 2011). This becomes pertinent when considering that prior studies in behavioral finance found mixed results in establishing a relationship between demographic variables

and indebtedness, and that behavioral and psychological factors may significantly influence the propensity toward indebtedness.

In addition, this study intends to offer a comprehensive understanding of the causes of individual indebtedness, which may address the credit problem in the long term and help current concerns regarding the rising individual debt in Malaysia. Despite the necessity to understand the behavioral factors so as to avoid unnecessary expenses, few empirical research studies (Flores and Vieira 2014; Ottaviani and Vandone 2011) have highlighted how behavioral factors influence household indebtedness. An attempt to bridge this gap in the existing related literature indicates the relevance of this study.

Moreover, the economic determinants of indebtedness should be able to fully explain the increasing trend of individual indebtedness; however, in the actual scenario, this does not occur. This causes an unexpected increase in family debt, default in debt repayments, and bankruptcy (e.g., Malaysian Department of Insolvency has recorded 253,635 bankruptcy cases from 2007 to 2013). Thus, understanding behavioral factors may improve the current situation by identifying the comprehensive reasons for individual indebtedness, which may, in turn, lead to the development of actions to prevent indebtedness and assist defaulters. Indeed, credit should ideally help people improve their financial condition, such as by assisting them in acquiring assets, covering essential expenses, becoming economically solvent in the long term, and so on. However, in reality, on many occasions credit supply seems to make people more indebted. Many Malaysian people have reported facing financial difficulties and feeling embarrassed by their debt repayments (Endut and Hua 2009; Ghani 2010; Mann et al. 2013). Consequently, the increase in the indebtedness of borrowers has raised public concern about the effects of credit.

Given this scenario, it is important to identify and understand the determinants (behavioral factors) of individual indebtedness. This study considers four determinants highlighted in the literature as the factors influencing indebtedness: financial literacy, risk perception, materialism, and emotion. The major reasons of rising indebtedness are low income, high income, and reluctance to save (Azma et al. 2019). The low-income group justified spending more than they earn because they are unable to cover their basic expenses with their income. They might have to borrow to fulfill their basic expenses. Conversely, it is quite irrational for the high-income group to spend more than they earn, as they can cover their essential expenses with their income. Logically, the high-income group should have some savings instead of having debt. The main reason for the high-income group to be indebted is because of their strong desire to spend. Reluctance to save explains the behavioral factors that mostly influence young people. The foregoing argument motivates this study, that is, it is probable that credit problems are not only produced by economic factors, but also influenced by behavioral factors (Keese 2012; Reed and Cochrane 2012; Selvanathan et al. 2016). Indeed, credit should help people to improve their financial condition, such as to acquire assets, cover essential expenses, and become economically solvent in the long run. Thus, the main objective of the study is to investigate the impact of behavioral and demographic factors that influence the propensity toward indebtedness, and to examine whether there is a difference in the propensity toward indebtedness and behavioral factors among inhabitants in Malaysia across demographic divisions.

The remainder of the paper is structured as follows. Section 2 discusses the theoretical basis of the study. Section 3 describes the methodology and Section 4 presents the results and discussion. Finally, Section 5 presents the conclusion, implications, and limitations.

2. Theoretical Basis

Behavioral determinants (e.g., financial literacy, risk perception, materialism, and emotion) may influence the propensity towards indebtedness (Azma et al. 2019; Muñoz-Murillo et al. 2020). The first crucial determinant of this study is financial literacy, which seeks to improve the capacity of persons to understand financial problems. Financial literacy has a greater positive impact on financial outcomes in the long term (Azma et al. 2019). It is an important determinant of whether an individual has sufficient

savings for future consumption. According to [Muñoz-Murillo et al. \(2020\)](#) and [Lusardi et al. \(2013\)](#), financial literacy is imperative for people who are at an early stage in their career. Parents' financial socialization influences their children's decision-making behavior ([Kalwij et al. 2019](#)). For example, [Okech et al. \(2013\)](#) said that children observe how their parents save money, and learn from their actions. Less financial knowledge could affect the financial outcomes in many areas such as retirement planning, borrowing decisions, and stock market participation ([Lusardi and Mitchell 2007](#); [Jalil and Rahman 2010](#)). [Ward and Lynch \(2019\)](#) indicated that financial literacy can help individuals make their financial decisions and income wisely. [Flores and Vieira \(2014\)](#) found that financial literacy has a significant impact on indebtedness. According to [Flores and Vieira \(2014\)](#), [Darriet et al. \(2020\)](#), and [Katona \(1975\)](#) there are three reasons to explain why people spend more than they earn: (i) low-income people cannot cover essential expenses; (ii) high-income people with a strong desire to spend; and (iii) lack of desire to save income. [Katona \(1975\)](#) discussed the origin of the credit problem, and [Azma et al. \(2019\)](#) highlighted psychological and behavioral factors. Following this view, [Eberhardt et al. \(2019\)](#) and [Vitt \(2004\)](#) identified that consumers' financial decisions may reflect their psychological and social values.

The second determinant is risk perception, which indicates how a person views risk during decision-making. [Barros and Botelho \(2012\)](#) suggested that consumers who have a strong expectation for acquisition could underestimate the risk. People with high risk perception tend to have low levels of debt ([Nguyen et al. 2019](#); [Caetano et al. 2011](#)). [Flores and Vieira \(2014\)](#) found that risk perception is positively linked with emotion and negatively linked with materialism. Risk perception overcomes uncertainty. [Loretts et al. \(2019\)](#) stated that perception of risk is influenced by the characteristics of farms, whereas market risk is associated with price. [Gärling et al. \(2009\)](#) highlighted that risk perception is an essential component of financial decision-making and other risk-related behaviors.

The third determinant highlighted in the literature is materialism. Materialism is related to the act of consumption ([Mishra and Mishra 2016](#); [Richins and Dawson 1992](#)). [Chaplin et al. \(2019\)](#) highlighted the several strategic factors that assist reducing materialism in younger consumers. People with high levels of materialism are characterized as spenders ([Azma et al. 2019](#)), while those with low levels are savers because immaterialized people will invest in stocks, bonds, and mutual funds ([Chatterjee et al. 2019](#); [Stock and Watson 2003](#)). [Santos and Fernandes \(2011\)](#) observed that people associate excessive materialism with a search for status. [Flores and Vieira \(2014\)](#) stated that when the motivation is anchored in values that are more collectively oriented, materialism is viewed positively. The fourth crucial determinant, emotion, is linked to the individual ability to express emotions when handling financial decisions. [Roazzi et al. \(2011\)](#) contend that emotion constitutes a complex and multifaceted concept and depends on the form of expression. [Quelch and Jocz \(2007\)](#) found that indebtedness affects emotions. According to [Huy and Zott \(2019\)](#), [Flores and Vieira \(2014\)](#) mentioned that emotion influences people's behavior (i.e., consumption, risk-taking, decision-making). In the sociocultural context, each subject gives in to emotions. Considering this context, [Roazzi et al. \(2011\)](#) classify emotions into three categories: background (long-lasting and influential on how primary emotion is expressed, e.g., apathy), primary (people easily express these, e.g., anger and fear), and social (influenced by society and culture, e.g., pride, embarrassment, and jealousy). [Flores and Vieira \(2014\)](#) indicated emotions that consider how indebtedness influences subjective issues (i.e., pride, shame, and nervousness).

The earlier studies ([Farrar et al. 2019](#); [Baker et al. 2019](#); [Metawa et al. 2019](#); [Phan et al. 2019](#)) found a relationship between demographic factors and financial behavior (e.g., financial literacy, risk perception, materialism, and emotion). [Fletschner and Mesbah \(2011\)](#) and [Farrar et al. \(2019\)](#) found a significant relationship between gender and financial literacy. Their findings showed that females are less financially informed than males are, but this improves significantly with education, wealth, and encouragement by spouses to acquire and use their finances. [Hsu \(2016\)](#) identified that females are more financially informed when their spouses start to lose cognitive skills. Moreover, risk perception differs based on individual occupations, income, religion, marital status, and level

of education (Keese 2010). Ponchio (2006) and Lin et al. (2019) focused on the relationship between demographic factors and debt, and identified that men are not more favorable to debt than women are. Younger people tend to perceive their debt burden as significantly lower, whereas those over 45 years are more likely to have a higher debt (Daud et al. 2019; Keese 2010). Older people are less likely to take on debt (Ponchio 2006), and that a lower education level influences the propensity to take on debt (Greig et al. 2019), that is, the lower the education level, the greater the propensity. Flores and Vieira (2014) noted that females are less favorable to debt than males are. Young people, below 30 years of age, tend to take the debt burden lightly as compared to the heads of families aged over 45 years (Keese 2010). This finding shows that the heads of families take the debt burden seriously so that the other family members are not affected by the heads' actions. People aged below 30 years are also found to have higher levels of debt (Flores and Vieira 2014; Sevim et al. 2012). Ahmed et al. (2010) noted that credit card usage could increase the level of personal debt. This is consistent with the findings of Flores and Vieira (2014) indicating that people who use and rely on credit cards are more likely to be in debt.

3. Methodology

The study uses the exploratory method, through the partial least square (SmartPLS) technique, and aims to test for specific research hypotheses. A theoretical model is developed to investigate the influence of determinants in debt situations. Additionally, to evaluate demographic and cultural variables, in total, eight hypotheses are considered for testing, as shown in Table 1. These eight hypotheses refer to the described model, which illustrates the relationships among the constructs considered. The eight relationships that refer to demographic and cultural variables are analyzed by hypothesis testing.

This study uses four independent variables (e.g., financial risk tolerance, risk perception, materialism, and emotion) and one dependent variable (indebtedness). For financial literacy, 12 items were adapted from Disney and Gathergood (2011), and for materialism, nine items were used from Ponchio (2006). For risk perception and indebtedness, 13 items were adapted from Caetano et al. (2011) and Flores and Vieira (2014). Emotion was measured by using 10 items adapted from Quelch and Jocz (2007).

Table 1. Hypotheses and research relations with references.

Hypotheses/Relations		References
H1:	Financial literacy positively affects propensity toward indebtedness.	Disney and Gathergood (2011)
H2:	Risk perception positively affects indebtedness.	Caetano et al. (2011)
H3:	Risk perception negatively affects materialism.	Flores and Vieira (2014)
H4:	Risk perception positively affects emotion.	Flores and Vieira (2014)
H5:	Materialism positively affects indebtedness.	Ponchio (2006)
H6:	Emotion positively affects indebtedness.	Quelch and Jocz (2007)
H7:	There is a significant difference between demographic variables with respect to the four determinants.	Keese (2010); Flores and Vieira (2014)
H8:	There is a difference between demographic variables with respect to individual indebtedness.	Flores and Vieira (2014)

Source: Elaborated by the authors.

The theoretical model provides the idea that the first hypothesis established a relationship between financial literacy and indebtedness. Based on Disney and Gathergood (2011), our efforts decided whether financial literacy positively influences indebtedness. With respect to the construct of risk perception, three hypotheses can be set forth, related to indebtedness, materialism, and emotion. Caetano et al. (2011) indicated that the higher the perceived risk, the lower the level of debt. However, risk perception may also influence indebtedness and emotion. Flores and Vieira (2014) examined that risk perception affects materialism negatively and emotion positively.

Next, the fifth hypothesis of the theoretical model attempts to identify the effect of materialism on indebtedness. Ponchio (2006) found that more materialistic people face or are prone to higher levels of indebtedness. For instance, more materialistic people will probably take up credit for utilization

purposes. Moreover, the higher the level of materialism, the greater the probability that the individual will be in debt.

The final hypothesis of the theoretical model aims to measure the relationship between emotion and indebtedness. [Quelch and Jocz \(2007\)](#) indicated that consumption affects individuals emotionally. Given this perspective, [Flores and Vieira \(2014\)](#) found that a significant relationship exists between emotion and indebtedness. From the aforementioned hypotheses, a theoretical model is proposed in Figure 1.

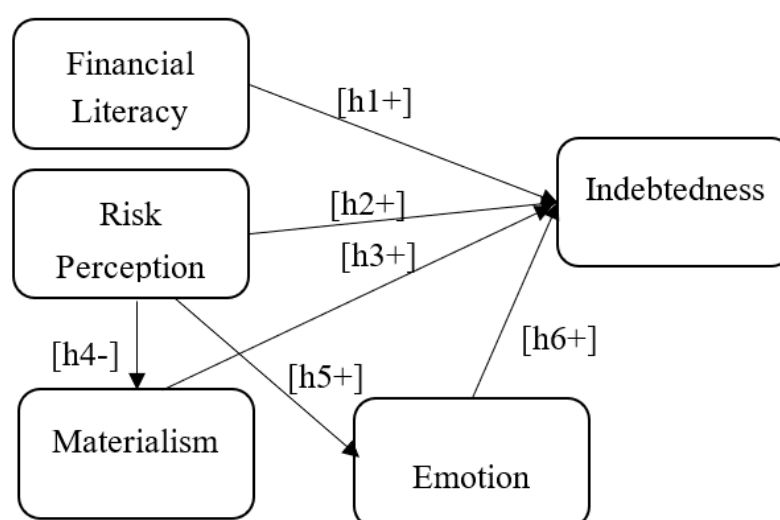


Figure 1. Theoretical model.

The survey for this study was conducted in the city of Kuala Lumpur in Malaysia. The sampling frame consists of working people from both public and private sectors who work within the Kuala Lumpur enclaves. Kuala Lumpur has the highest population density in Malaysia. This population is suitable for analyzing the urban life of these enclaves and their behavior toward financial management. The prospective respondents were chosen using the probability sampling method.

A structured questionnaire, divided into two sections, was used. The first section addressed the respondents' profiles, whereas the second section explored the determinants (behavioral factors) based on the following references: financial literacy, using the scale of [Disney and Gathergood \(2011\)](#); materialism, using the scale of [Ponchio \(2006\)](#); risk perception and indebtedness, based on the scale of [Caetano et al. \(2011\)](#) and [Flores and Vieira \(2014\)](#); and finally, emotion, using the scale of [Quelch and Jocz \(2007\)](#). A five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used for the five factors (financial literacy, risk perception, materialism, emotion, and indebtedness). A total of 400 questionnaires were distributed, of which 350 were returned. The final 320 valid responses presented an actual response rate of 80%.

Using SmartPLS software, the measurement model was assessed, and the hypotheses were tested. PLS is an appropriate tool because it confirms the theories to determine how well a model can estimate a covariance matrix for the sample data. [Hair et al. \(2013\)](#) stated that PLS operates much like a multiple regression analysis and is particularly valuable for exploratory studies.

4. Results and Discussion

4.1. Respondents' Demographic Characteristics

Data were collected from December 2016 to April 2017, generating a sample of 320 valid responses. According to the respondents' profiles, the statistical analysis shows that the majority of the respondents are males (58.7%) compared to females (41.5%). The findings also indicate that more than half of the participants are married (53.5%), while 44.2% are single, and 2.3% selected the "others" option. Most

respondents are aged between 25 and 35 years (55.5%), followed by those below 24 years (23.2%) and 36 to 45 years (14.3%). In terms of educational background, around half of the respondents have a university degree as the highest degree (49.7%), followed by those with a college degree (28.1%), and diploma (22.2%). The results also reveal that 58.4% are private-sector employees, followed by those in the public sector (33.3%), and finally, the self-employed (8.3%).

4.2. Measurement Model Assessment

From the methodological point of view, we have considered all the dimensions together for testing the measurement model before the structural model. Having established the different measures, a confirmatory factor analysis (CFA) was conducted. This study used both a measurement model and a structural model. Hence, Table 2 indicates the results of convergent validity of the study. The validity of the constructs and CFA were carried out. The relationships among the constructs were measured using a PLS statistical tool. The findings revealed that factor loading ranged from 0.813 to 0.954, the value of average variance extracted (AVE) from 0.702 to 0.872, composite reliability (CR) value between 0.888 and 0.971, and Cronbach's Alpha value from 0.823 to 0.934, which indicates convergent validity of this study. In the measurement model estimation, some changes were carried out due to adjustment issues. Table 3 presents the findings of discriminant validity for all the five variables in this study. The discriminant validity of this paper is achieved (see Table 3) because the square root of every latent construct shows the higher correlation. For instance, Hair et al. (2013) indicated that the square root of AVE for each latent variable should be higher than the correlation of any latent variables (Hair et al. 2013). Figure 2 shows the measurement model with regression weights.

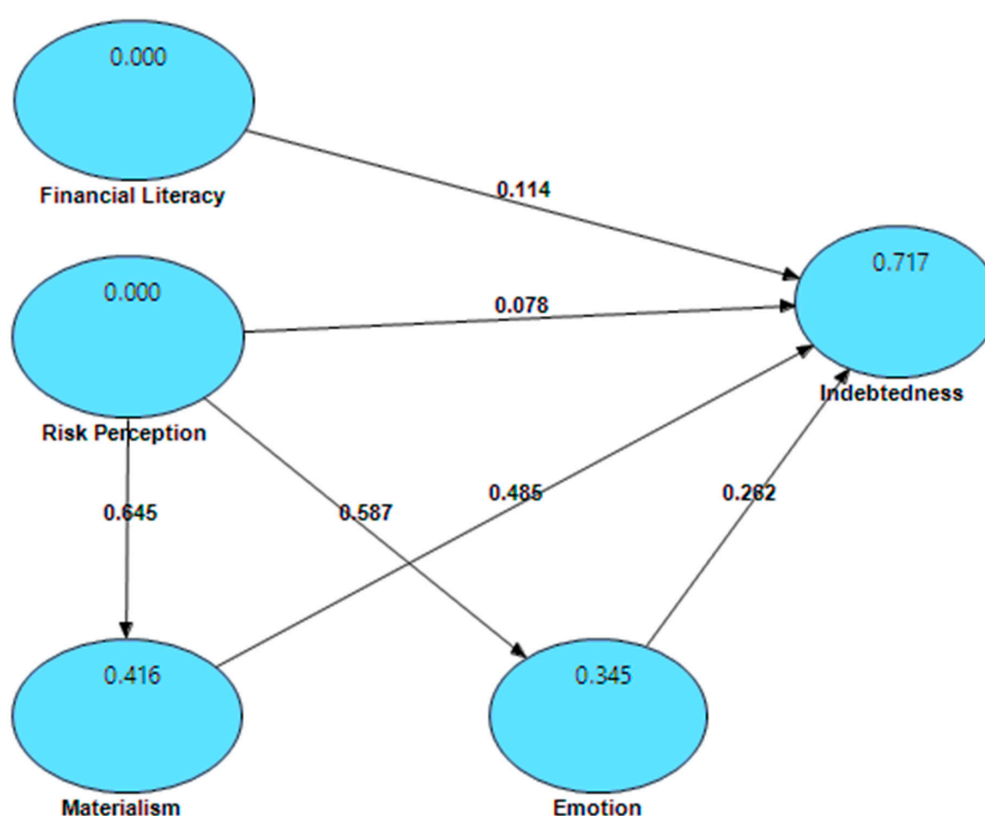


Figure 2. Measurement model.

Table 2. Convergent validity.

Code	Characteristics	Factor Loadings	AVE	CR	Alpha (α)
Financial Literacy			0.806	0.954	0.934
[FL1]	Saves money every month.	0.867			
[FL2]	Saves to buy more expensive products (e.g., car, house).	0.822			
[FL3]	Has a financial reserve greater than or equal to three times the monthly income that can be used in unexpected cases (e.g., unemployment, sickness).	0.846			
[FL5]	Analyzes personal finances in depth before making any major purchase.	0.841			
[FL7]	I am satisfied with my own system to control finances.	0.855			
[FL9]	Uses credit cards because no money is available to cover some expenses. (if applicable)	0.881			
[FL11]	Pays credit card bill completely to avoid finance charges (interest and fines). (if applicable)	0.895			
[FL12]	Checks credit card bills to examine errors and unauthorized charges. (if applicable)	0.835			
Risk Perception			0.872	0.971	0.824
[RP2]	Accepts being a guarantor for someone.	0.897			
[PR3]	Spends money carelessly, without thinking of the consequences.	0.920			
[RP4]	Invests in businesses that have great chances of not working well.	0.938			
[RP5]	Lends a great proportion of personal income to a friend or relative.	0.925			
Materialism			0.852	0.958	0.835
[MT1]	I admire people who possess expensive houses, cars, and clothes.	0.895			
[MT2]	I like to spend money on expensive things.	0.927			
[MT3]	My life would be much better if I had things I actually do not have.	0.954	0.728	0.888	0.823
[MT4]	Buying gives me pleasure.	0.916			
[MT5]	I would be happier if I could buy more things.	0.912			
[MT6]	I like to possess things to impress other people.	0.816			
[MT8]	It bothers me when I cannot buy everything I want.	0.887			
[MT9]	Spending much money is among the most important things in my life.				
Emotion			0.836	0.953	0.934
[ET1]	I would feel ashamed if I were indebted.	0.897			
[ET2]	I would feel nervous if I were indebted.	0.821			
[ET4]	I would feel depressed if I were indebted.	0.853			
[ET5]	My dietary habits would be affected if I were indebted.	0.793			
[ET6]	My family relations would suffer if I were indebted.	0.898			
[ET7]	My relations with friends would be harmed if I were indebted.	0.860			
[ET9]	My work performance would be affected if I were indebted.	0.826			
[ET10]	I would smoke more than usual if I were indebted.	0.873			
Indebtedness			0.703	0.904	0.862
[ID1]	It is not correct to spend more money than I make.	0.849			
[ID2]	It is better to gather money first and then spend it.	0.822			
[ID3]	I know exactly how much I owe in stores, in credit cards, or to the bank.	0.892			
[ID5]	I would rather buy in installments than to wait to gather money to buy in cash.	0.862			
[ID6]	It is important to know how to control the expenses in my house.	0.813			
[ID7]	I would rather pay in installments even if the total is more expensive.	0.828			
[ID8]	People would be disappointed with me if they knew I had a debt.	0.884			

Table 3. Discriminant validity Fornell–Larcker criterion.

	Emotion	Financial Literacy	Indebtedness	Materialism	Risk Perception
Emotion	0.8977				
Financial Literacy	0.5382	0.9143			
Indebtedness	0.4914	0.7414	0.8384		
Materialism	0.4994	0.6262	0.7844	0.9230	
Risk Perception	0.3477	0.5917	0.5755	0.6068	0.9338

4.3. Structural Model

The findings of the structural model analysis are illustrated in Table 4. In the structural model, the results are examined through beta coefficient (β), and t-statistics for latent constructs. The findings show that four hypotheses are accepted at significant levels of 0.01 and 0.05, respectively, while two hypotheses are not accepted. According to Hair et al. (2013), the value of t-statistics equal to or higher than 1.64 are considered significant. The beta coefficient value assesses the strength of the relationship between independent and dependent variables. The beta coefficient value ranges from zero to one, indicating positive or negative significant relationships. The findings illustrate that a higher significant relationship is found between risk perception–materialism ($\beta = 0.645$) followed by risk perception–emotion ($\beta = 0.587$), materialism–indebtedness ($\beta = 0.485$), and emotion–indebtedness ($\beta = 0.262$). Therefore, H3, H4, H5, and H6 are accepted and H1 and H2 are not accepted. Figure 3

shows the structural model with the hypothesis test. The findings also reveal that the coefficient of determination (R^2) value represents the percentage of variance. Hence, the dependent variables can be explained by independent variables, and range from zero to one. Cohen (1988) assumed that the closer the value to one, the more the independent variable explains the dependent variables. Thus, risk perception explains 41.6% of materialism and 34.5% of emotion. In addition, a total variance of indebtedness, 71.7%, is explained by financial literacy, risk perception, materialism, and emotion.

Table 4. Hypothesis testing.

Hypothesis	Hypothesized Relationship	Beta Coefficient (β)	Standard Error	<i>t</i> -Statistics
H1	Financial Literacy → Indebtedness	0.114	0.115	0.988
H2	Risk Perception → Indebtedness	0.078	0.098	0.786
H3	Risk Perception → Materialism	0.645	0.071	9.070 **
H4	Materialism → Indebtedness	0.485	0.125	3.864 **
H5	Risk Perception → Emotion	0.587	0.083	7.061 **
H6	Emotion → Indebtedness	0.262	0.095	2.764 **

Note: ** $p < 0.01$, * $p < 0.05$.

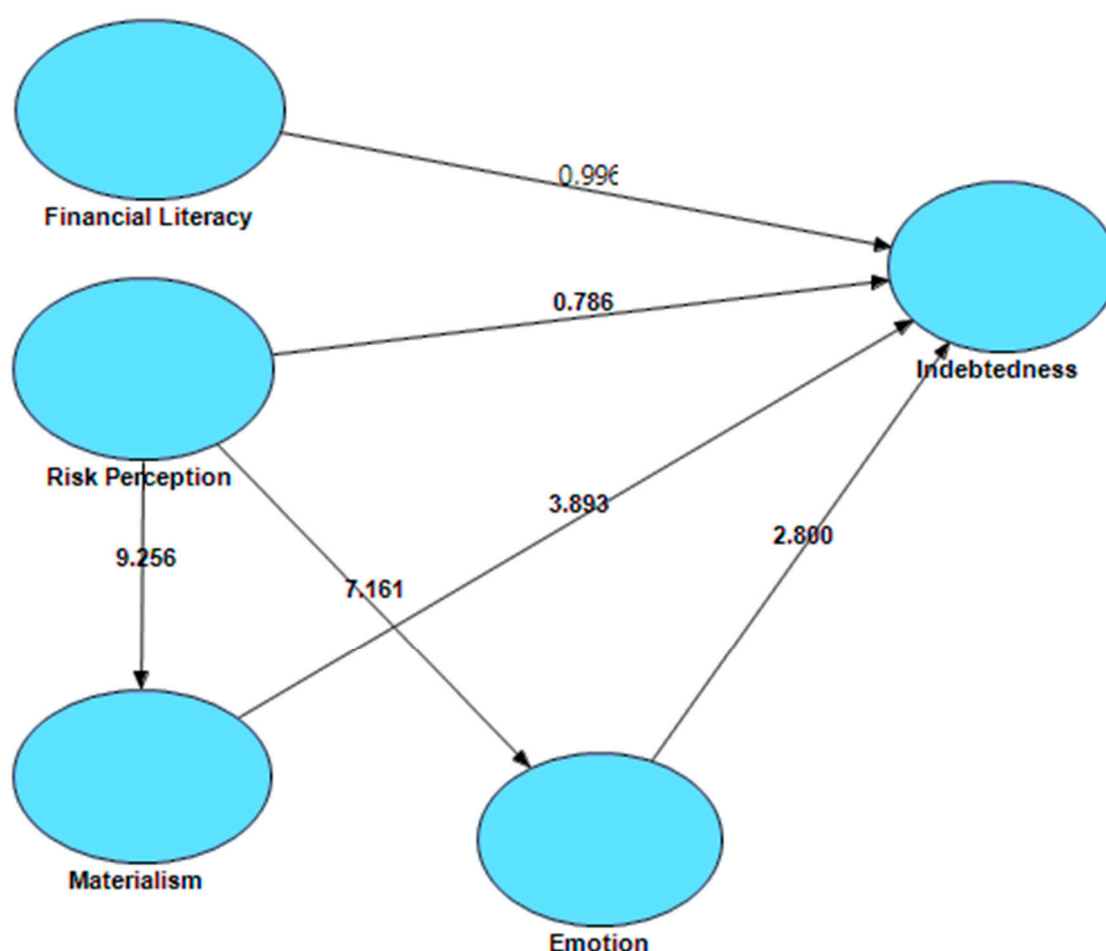


Figure 3. Structural model. Note: *t*-value ≥ 1.64 significant at $p < 0.05$, *t*-value ≥ 2.32 significant at $p < 0.01$.

4.4. Assessment of Demographic Profile and Constructs

In this study, *t*-tests (for gender, marital status, credit card, and loan) and one-way ANOVA (for age and income) were used to analyze the difference between males and females, single and married people, owning credit card and loan or not; as well as age and income groups in terms of indebtedness, emotion, materialism, risk perception, and financial literacy. Table 5 reposts the *t*-test results that show the difference between males and females in terms of indebtedness, emotion, materialism, risk perception, and financial literacy. The results show that *t*-values for indebtedness and risk perception are statistically significant at $p < 0.05$, while materialism is highly statistically significant at $p < 0.01$. This finding indicates that there are differences between the means for males and females for all variables. Males scored higher means than females did in indebtedness, materialism, risk perception, and financial literacy, while females scored significantly higher than males in emotion. This indicates that there is no significant difference between males and females in terms of emotion and financial literacy.

Table 5. Relations between demographic profile and constructs.

Relations between FL, RP, ET, MT, ID, and Gender					
Characteristic	ID	ET	MT	RP	FL
Gender:					
Male	3.02	3.28	3.07	2.25	3.72
Female	2.74	3.40	2.61	2.03	3.70
<i>t</i>	1.96 *	−0.86	3.43 **	1.98 *	0.15
Relations between FL, RP, ET, MT, ID, and Marital Status					
Single	2.83	3.48	2.83	2.12	3.73
Married	2.81	3.30	2.68	2.07	3.69
<i>t</i>	1.78	1.47	1.26	0.40	0.39
Relations between FL, RP, ET, MT, ID, and Credit Card					
Yes	2.85	3.24	2.75	2.03	3.94
No	2.80	3.45	2.73	2.13	3.55
<i>t</i>	0.37	−1.75 *	0.17	−0.80	3.78 ***
Relations between FL, RP, ET, MT, ID, and Loan					
Yes	2.86	3.28	2.77	2.09	3.74
No	2.70	3.58	2.66	2.08	3.63
<i>t</i>	1.19	−2.36 **	0.73	0.45	0.99
Relations between FL, RP, ET, MT, ID, and Age					
21–30	2.84	3.38	2.81	2.17	3.59
31–40	2.80	3.31	2.72	2.08	3.86
41–50	2.79	3.46	2.38	1.67	3.75
51 and above	2.63	3.44	2.24	1.52	3.89
<i>F</i>	0.16	0.17	1.81	2.25 *	2.20 *

Note: Independent variables: Financial literacy (FL), Risk perception (RP), Materialism (MT), Emotion (ET). Dependent variable: Indebtedness (ID). *** Significant at $p < 0.01$, ** Significant at $p < 0.05$, * Significant at $p < 0.10$.

The findings also indicate that there are differences between the means for single and married people for all constructs. Single people scored higher means than married people did in all five constructs. The *t*-values of all constructs were not significantly different. This implies that there is no significant difference between single and married people in terms of indebtedness, emotion, materialism, risk perception, and financial literacy. In addition, the statistical result indicates that there is no significant difference between “Yes” and “No” in terms of indebtedness, materialism, and risk perception, while financial literacy shows a highly significant difference between “Yes” and “No.” Moreover, the results also reveal that there are differences between the means of having a loan or not having a loan for all variables, as the *t*-value for emotion was significant at $p < 0.05$. Table 5 also reports that there is a significant difference between respondents from four age groups and two constructs

(risk perception, financial literacy), whereas the rest (indebtedness, emotion, materialism) were found insignificant. However, the age group from 21 to 30 years scored higher means in indebtedness, materialism, and risk perception while the age groups of 41 to 50 years and above 51 years scored higher means in emotional and financial literacy, respectively.

Based on the findings of hypothesis testing, materialism and emotion have a significant relationship with a propensity toward indebtedness. These findings are associated with the study of [Flores and Vieira \(2014\)](#). In the context of propensity toward indebtedness in Malaysia, the results found that risk perception and financial literacy are not statistically significant with indebtedness. This result is contradictory with the earlier study of [Flores and Vieira \(2014\)](#) because they found that financial literacy and risk perception have a significant relationship with indebtedness in the context of Brazil. With respect to the sign of the coefficient of financial literacy, the hypothesis related to this issue is not confirmed. Interestingly, this study found that financial literacy was neither practically nor statistically significant to indebtedness. In case of Malaysia, this study suggests that financially literate people are more prone to indebtedness possibly because they have the confidence in managing their debt. They probably know better the function of loans or credit cards, the implications of interest rates, duration of repayment, etc. Conversely, financially illiterate people are less confident in taking on debts possibly because they have insufficient knowledge about the functions and implications of debt.

[Flores and Vieira \(2014\)](#) assume that people with high risk perception tend to have low levels of debt. This finding is consistent with the finding of the present study. Moreover, the statistical analysis reveals that risk perception has a higher significant and positive relationship with materialism and emotion. This study is a new finding in the context of Malaysia and is not associated with [Flores and Vieira \(2014\)](#), who examined the context of Brazil and found that risk perception affects materialism negatively and emotion positively. They also noted that high consumption levels do not always provide benefits; on the contrary, such consumption levels may adversely affect individual welfare. The positive relationship between materialism and indebtedness is noteworthy; indeed, there is a positive relationship, indicating that people with high levels of materialism tend to have a high propensity toward indebtedness. People who value possession of goods highly tend toward a higher propensity of being in debt because they are prone to spending without proper planning.

Regarding the relations of demographic variables to indebtedness, the results of the current study show that males are more likely to be in debt than females are, in accordance with the results of [Flores and Vieira \(2014\)](#). However, this study found no significant difference between single and married people with respect to indebtedness. However, [Gathergood \(2012\)](#) found that single people tend to have a higher propensity toward indebtedness compared to married people. Therefore, further investigation is needed to confirm the result. People who use credit cards have higher debt levels, although the difference is not significant, supporting [Ahmed et al. \(2010\)](#). With respect to age, young people (under 30 years) are more likely to be in debt, according to the results of [Disney and Gathergood \(2011\)](#) and [Sevim et al. \(2012\)](#). However, their differences are not statistically significant. Further, respondents who take loans are more indebted compared to those who do not take loans. This result is similar with that of [Flores and Vieira \(2014\)](#).

5. Conclusions, Implications, and Limitations

Propensity toward indebtedness is one of the main serious issues in Malaysia. Although many people have not realized this situation, it presents a great concern to the government, decision makers, and researchers. Therefore, initiatives should be undertaken seriously for overcoming this challenge. The present study tries empirically to address the gap in the literature of the behavioral factors that predict the propensity toward indebtedness. The findings suggest that behavioral factors are among the reasons that cause indebtedness. Self-control is important to avoid being indebted, especially considering that materialism is the only statistically significant factor explaining the propensity toward indebtedness in this study's hypothesized model. This contribution could be a useful source of information for the higher authority to guide people to improve their financial planning through

programs and mass media. The empirical evidence exists to demonstrate that there are many possible causes of the increasing level of debt worldwide. The results from this study can contribute to the existing line of research in behavioral finance and personal financial management. The study précises diverse behavioral and demographic factors that may influence the propensity toward indebtedness in Malaysia. In terms of practical contributions, this study helps broaden the understanding of behavioral factors, which may lead to the development of actions to prevent indebtedness and assist defaulters. The researcher also hopes that financial institutions could benefit from the results of this study by building stronger models of credit offerings.

In addition, this study suggests that financial institutions may have to improve their model in addressing credit problems in the long term. As materialism is a significant factor explaining the propensity toward indebtedness, the higher authority should consider this behavioral factor and take the necessary steps to guide people to have better financial planning and disseminate it widely through programs and mass media. Financial institutions should measure people's level of materialism before approving loan applications, as it is directly linked to indebtedness. For example, the loan application of a highly materialistic person should be considered carefully. In their efforts to reduce the indebtedness among Malaysians, financial institutions should urgently impose reasonable down payment for house and car loans, and should check thoroughly people's sources of funds to pay the installments.

Besides, in order to reduce the occurrence of moral hazards after taking a business loan, financial institutions should closely monitor how the recipients are spending their funds. A post-disbursement monitoring system would include close supervision of the status or progress of the business undertaken and some technical assistance in achieving a viable business project. This includes offering advice during the initial stage, ensuring consistent progress evaluation, marketing, and ensuring business continuity. Even though borrowing enables individuals to improve their lifestyle and consumption, some individuals are at risk of indebtedness that is unsustainable with their earnings and may reach over-indebtedness. Over-indebted people are prone to suffer from poor psychological well-being, health problems, and weak social networks. Thus, governments should focus on this aspect and conduct programs that could enhance people's understanding about both the benefits and harmful effects of debts.

This study has some limitations. For example, the scope of this study is confined to only the Klang Valley area. Working individuals may differ from those in the other states in terms of experiences and characteristics. These elements may affect individual propensities toward indebtedness. Thus, generalizing this aspect to the Malaysian population is imperative. Future research may carry out comparative studies between people in private and public sectors, or those who work in different states in Malaysia. This strategy could help explore the underlying reasons, and the truth about people being indebted, based on the experiences gained by financial advisors as well as the bankrupted people.

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