

MONEY ATTITUDE AND CRIME INTENTION SCALE DEVELOPMENT: FACTORIAL AND CONFIRMATORY ANALYSIS

Nur Annizah Ishak^{1*}, Roza Hazli Zakaria², Siti Hajar Abu Bakar³, Nurulhuda Mohd Satar²

¹Department of Development Studies, Faculty of Economics and Administration, University Malaya

²Department of Economics, Faculty of Economics and Administration, University Malaya

³Department of Social Administration and Justice, Faculty of Arts and Social Sciences, University Malaya

Email: annizah@um.edu.my

ABSTRACT

Individual's perception of money has been recognized as an important concern that affects their behavior and wellbeing, thus understanding how individual's appraisal of money is important. The objective of this study is to develop an instrument to measure Malaysian's money attitude and crime intentions. Using Structural Equation Modelling and SPSS, empirical evidence for a sample of 175 students from a prominent university was tested. The exploratory factor analysis (EFA) was conducted using principal axis factoring to determine the factor structure. The analysis revealed a six-factors structure of money attitude comprises of "richmotivation, achievement, respect, budget, donate and makemoney" that account for 70.82% of variances. All items showed strong factor loadings and high internal consistency within constructs. While the crime intention construct has a three-factor structure, namely; "falsifying, bribery and stealing" that account of 75.09% variances. Through confirmatory factor analysis (CFA), this study shows an acceptable model fits and recommends the feasibility of applying these constructs in tandem with the underlying theory. The scale has brought applications for research and practice as it serves as a tool for capturing perspectives on "money attitudes" and "crime intention" among Malaysians.

Keywords: money attitude, crime intention, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA)

INTRODUCTION

Greed, lifestyle, and personal financial pressure, debt, living over means are the most leading motivations for fraud, deception, corruption, and bribery. As the role of money becomes more important in modern society; a commodity to accomplish economic and status needs, then the desire for money becomes increasingly pressing. Money is required for food, housing, clothes, education, medical, vacation, and others to meet all the needs and wants.

Money guides individual's behavior and consequently affects individual's wellbeing and social satisfaction. The meaning of money or the value of money is subjected to an individual's valuation. Thus, individual's perceived money affects their behavior and wellbeing more than the money itself (Tang, 1992).

Financial difficulties due to living beyond their means and accrued with higher debt could lead to financial stress. Fraud, Bribery and Corruption Survey by KPMG Malaysia (2016, 2014, 2011) reveals two leading motivations for fraud which are greed/lifestyle and personal financial pressure. Figure 1 shows the desire to enhance lifestyle or greed (66 percent), and financial pressure (62 percent) are the most prevalent reasons. Figure 1 implicitly indicates that money plays an important role in this criminal behavior. The perception of money holds by individuals influences their behavior either positively or negatively.

Therefore, the objective of this study is to explore the factor structures of money attitude and crime intention among Malaysians. This study deems important and significant, especially in understanding the Malaysian behavior on crime and money attitude.

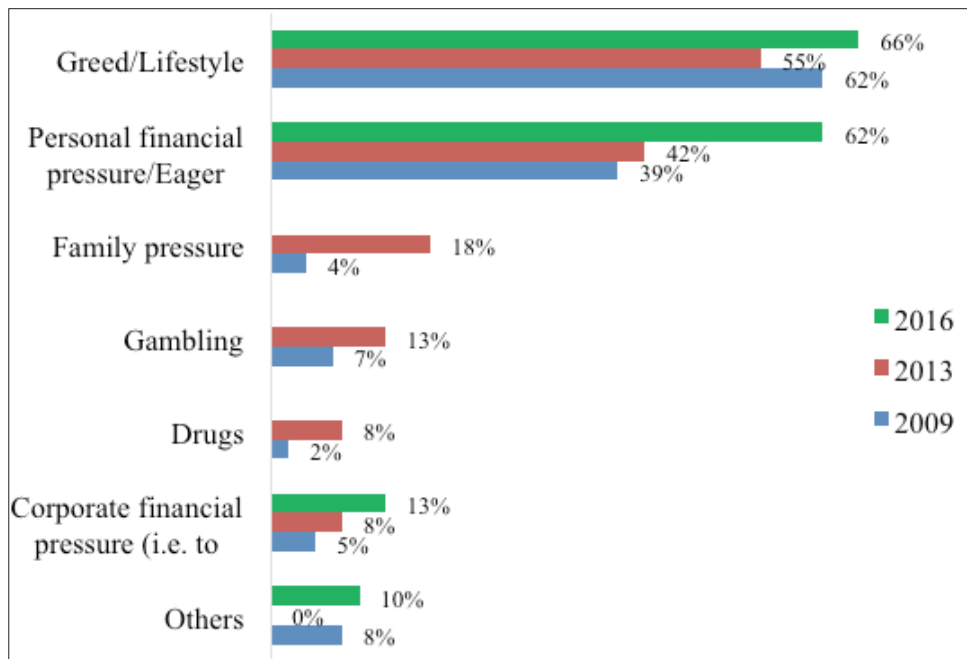


Figure 1 Motivation for Fraud

(Source: KPMG Malaysia Fraud, Bribery and Corruption Survey, 2016)

The paper begins with the introduction. section two explores the literature reviews on money attitude and crime, while the next section provides the methodology employed in this study. The fourth section delineates the results and findings. The final section concludes the study.

LITERATURE REVIEW

Money is “the most abstract and ‘impersonal’ element that exists in human life” (Coleman, 1992). Money can be a motivator for individual behavior and could lead to positive or negative behavior. The money attitude construct refers to beliefs about money and this study attempts to examine how this belief affects individual’s behavior and wellbeing. For the past several decades, researchers have examined numerous money related attitudes and measures in the literature (Chen, Tang, & Tang, 2014; Luna-Arocas & Tang, 2004; Tang, 1992). Other studies also argue an individual’s attitude towards money is learned from the culture of the society, childhood experience and adulthood knowledge (Tang & Chiu, 2003; Tang, 1995).

Literatures show motivation for money such as represent status, power, control and privileges has

a significant impact on people’s behavior. Crime economic theory delineates how individuals may commit crimes due to the financial gain or because of expected economic gains (KPMG, 2016; 2014). Money may induce crime as crime is always a result of solid motivations and opportunities. People that fall in love with money will seek more of it, as though they can never get enough. They money chase for the sake of more money and people that fall in love with money will seek more of it (Lemrová, Reiterová, Fatěnová, Lemr, & Tang, 2014; Luna-Arocas & Tang, 2015; Tang & Chen, 2008; Tang & Sutarso, 2013; Tang & Chiu, 2003) explore the relationship between temptation (both reflective and formative. All these findings support the hypothesis that the money attitude is important, and it may induce criminal behavior.

Pahlevan, Sharif and Yeoh (2018) stated Malaysians are a concern on their social standing in society, thus suggested that money is a motivation for Malaysians behavior. Insufficient income requires people to have financial assistance, such as loans from a bank or other institutions, peers, family or credit cards. Consequently, the rise of household debts in Malaysia indicated that Malaysians are struggling to meet their needs with current income. Malaysia Department of Insolvency (2017) declared about 70 percent of Malaysians

especially from 25 to 45 years old as bankrupt due to failure in managing their financial debts, particularly from credit cards, housing, personal loan or social guarantor. The bankruptcies cases were even higher in urban and developed areas such as Selangor and Kuala Lumpur with 27,051 and 13,561 cases respectively (Insolvency, 2017; Theong, Osman & Yap, 2018). All these called for the study to understand the perception of money attitude and crime intention, particularly among Malaysians.

METHODOLOGY

Sample and Data Collection

The study sample consisted of 175 economic students from a prominent university in Malaysia. The surveys were administered during class time and anonymity was guaranteed. All students are in senior years with some working experience either full time or part-time. Approximately 300 questionnaires were distributed using convenient sampling and 190 collected with a return rate of 63.3%.

Data Screening

Data screening has been done prior to data analysis. First, the unengaged responses were identified if the respondent marked all or most questions with the same option on the 5-point Likert scale (by checking each case if its standard deviation is smaller than 0.5). Second, we checked for normality of the data and removed item with high levels of both skewness and kurtosis ($>|3|$). Then we checked for missing values. Finally, we excluded 15 surveys with missing responses, unengaged responses and outliers. Thus, we had 175 useable data at the final stage.

Then, we performed the factorability and reliability analysis. The mean, standard deviations, reliability, validity and correlations between variables are presented in Table 1 (see Appendix). Cronbach alpha for both constructs ranges from 0.8 to 0.9, indicates a good valid measure for each construct. For instance, Cronbach alpha for money attitude construct is 0.831 and none of the items has dropped because all inter-item correlations are smaller than 0.8. Meanwhile, Cronbach alpha's for crime intention is 0.895 and no item has been dropped because all inter-item correlations are smaller than 0.8, indicating no extreme multicollinearity was observed.

Measures and Instruments Development

Two constructs have been tested in this study, namely money attitude and crime intention. Respondents recorded their agreement with each statement regarding money with the 5-point Likert scale ranging from strongly agree (1) to strongly disagree (5). Besides, respondents were asked to share their basic demographic data includes; age, gender, ethnicity, education, income and others.

Money Attitude

The money attitude construct was developed by Tang et. al (1992) to study the money attitude domain. It consists of nine (9) variables which include Rich, Motivator, Important, Make Money, Budget, Donate, Respect, Achievement, and Power. Each variable consists of three items, accumulating to 27 items overall. Respondents recorded their agreement with statements on each item such as; "*I am motivated to work hard for money*"- Motivation; "*Money is evil*"- Evil; "*I organize my money very well*"- Budget and; "*Money is a symbol of my success*"- Achievement. The 5-point Likert scale was used, ranging from strongly agree (1) to strongly disagree (5). Higher scores indicated a higher propensity of economic crime intention.

Crime Intention

The study adapted *Unethical Behaviour Intention* from Tang & Sutarso (2013) explore the relationship between temptation (both reflective and formative and Bailey (2006) to measure the economic crime constructs of *Falsifying, Bribery, and Stealing*. The 5-point Likert scale ranging from strongly agree (1) to strongly disagree (5) was utilized with provided case assumptions, for instance, "*If you were given the opportunity in your work environment, what is the probability that you may engage in the following activities.*" It is a measurement of self-prediction or social control. The construct consisted of three factors with five items in each scale. Higher scores indicated a higher propensity of economic crime intention.

Statistical Procedure

The study used Statistical Package for Social Science (SPSS) version 23 and Analysis of Moment Structures (AMOS) software for data analysis. To evaluate the different dimensions of money attitude and crime intention, exploratory factor analysis (EFA) was conducted. EFA is a statistical approach for determining

the correlation among the variables in a dataset. This type of analysis provides a factor structure (a grouping of variables based on strong correlations). The initial indices good fit indicated that the observed variables are associated with each latent variable. The result of the EFA is further refined using SPSS Amos to run a confirmatory factor analysis (CFA). CFA was used to investigate the fit of extracted dimensions and the construct validity in the model (Awang, 2013; Hair, 2016).

RESULTS AND FINDINGS

Demographic Details of Respondents

Background information of respondents in terms of gender, age, religion, ethnicity, marital status, education and household income were gathered. There were 20.6% male and 79.4% female and age between 21.7% age below 20 and 78.3% between 21 to 30 years old. The majority of respondents are Chinese with 45.7% followed by Malay 36.6% and Indian 8.0%. In terms of religion 41.7% practice Islam, 39.4% Buddhist, 1.6% Hindus while 6.3% are Christian. The majority of the respondents have tertiary education, Degree with 78.9% and Diploma or A-level with 14.3%. Data from 175 participants with the basic sociodemographic characteristics are shown in Table 2.

Exploratory Factor Analysis (EFA)

Instrument Scale "Money Attitude"

Exploratory factor analysis (EFA) using principal axis factoring and promax rotation were utilized to identify the least number of factors that can account for the common variance (correlation) of a set of variables. Bartlett's test Sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were applied, to assess the factorability of the data and ensure sampling adequacy.

The first round of EFA revealed a nine-factor solution with a lack of interpretable patterns. We repeated the analysis by excluding items with low factor loadings or single-item factors with an eigenvalue greater than one, until a clear pattern of interpretable factors without any low-loading and substantially cross-loading items emerged. The CFA was conducted later on. We finally arrived at a six-factor solution (compared to nine in the earlier constructs) with 27 items: KMO = 0.870, Bartlett's test of sphericity was significant

Table 2 Demographic Characteristics of the Respondents

Characteristics	Respondent (n=175)	Percentage (%)
Gender		
Male	36	20.6
Female	139	79.4
Age		
Below 20 years old	38	21.7
21-30	137	78.3
Marital Status		
Single	173	98.9
Married	1	0.6
Divorced/Widowed	1	0.6
Ethnicity		
Malay	64	36.6
Chinese	80	45.7
Indian	14	8.0
Others	17	9.7
Religion		
Islam	73	41.7
Buddhist	69	39.4
Hindu	16	9.1
Christian	11	6.3
Others	6	3.4
Education		
High School	5	2.9
Diploma/Matriculation/A-Level	25	14.3
Degree	138	78.9
Master/PhD	1	0.6
Others	6	3.4
Household Income		
Less than RM 1,000	101	57.7
RM1001 – RM3000	55	31.4
RM3,001 – RM5,000	10	5.7
RM5,001 – RM10,000	5	2.9
RM10,001 – RM 20,000	4	2.2

($\chi^2 (351) = 4155.18, p < .05$). Three items were collapsed into a variable; which is "rich, motivation and important (RMI)". On the other hand, variable "power" is also combined into achievement "(ACPW) and respect (RSPW)", respectively. The rest are "budget (BUD)", "donate (DON)" and "make money (MK\$)" variables.

The communalities were all above 0.3, further confirming that each item shared some common variance with other items.

The six-factor initial Eigenvalues showed the model could explain 70.82% of variances. The first Eigenvalue is 9.87 and could explain 36.54% of the variance, the second factor is 3.328, the third factor is 2.45, the Eigenvalue for the fourth factor is 1.4 and the fifth

factor and sixth factors are 1.09 and 0.95 respectively. Table 3 below indicates the pattern matrix of the money attitude construct.

After we arrived at the six-factor solution, we double-checked if the multiple items of each factor are measuring the same factor (convergent validity), while the multiple factors are measuring distinct factors (discriminant validity). The size of factor loading can

Table 3 The Pattern Matrix for Money Attitude

Variable	Factor					
	RichMotImp	AchievePower	RespectPower	Budget	Donation	MakeMoney
% of Variance	36.537	12.327	9.086	5.314	4.041	3.517
Gi2	.882					
Gi9	.870					
Gi3	.862					
Gi7	.857					
Gi5	.825					
Gi1	.788					
Gi4	.776					
Gi6	.740					
Gi8	.665					
Giii5		1.000				
Giii4		.960				
Giii6		.884				
Giii9		.449				
Giii2			.935			
Giii1			.919			
Giii3			.573			
Giii8			.498			
Giii7			.442			
Gii5				.927		
Gii4				.845		
Gii6				.835		
Gii7					.926	
Gii9					.825	
Gii8					.770	
Gii2						.846
Gii1						.792
Gii3						.505
Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.						
a. Rotation converged in 7 iterations.						

be used to indicate the degree of convergent validity of a model structure because high loadings on a factor would indicate that they converge on a common point, the latent construct (Awang, 2013; Hair, 2014). Our six-factor solution showed that each item had a significant loading (above .40) on one factor, without cross-loadings. Thus, supported the convergent validity findings.

Conversely, the discriminant validity test looks at the presence of cross loading between factors. The pattern matrix confirmed the variables load significantly only on one factor. This means there are no cross-loading between variables, implying the condition for discriminant validity is met. An inspection of the factor correlation matrix shows no alarming correlations that higher than 0.7, further confirmed this instrument is valid for the dataset.

Instrument Scale "Crime Intention"

Similarly, principal axis factoring and promax rotation was conducted for EFA for crime intention. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.807 and Bartlett's test of sphericity was significant (see Table 4). The communalities were all above 0.3. Table 5 below indicates the total variance explained

Table 4 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.807
Bartlett's Test of Sphericity	Approx. Chi-Square	1707.139
	df	55
	Sig.	.000

in the model. The initial Eigenvalues showed the model could explain 75.09% of variances. The first factor explained 54.16% of the variance, the second factor explained 12.95% of the variance and the third factor explained 8.0% of the variance. After the refinement process, crime intention has three factors which are *"stealing, falsifying and bribery"*. The communalities were all above 0.3, further confirming that each item shared some common variance with other items.

All a six-factor solution showed that each item had a significant loading (above .40) on one factor, without cross-loadings. The pattern matrix also confirmed there are no cross-loading between variables, implying the condition for discriminant validity is met. The factor correlation matrix indicates no alarming correlations

Table 5 Total Variance Explained – Crime Intention

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loading
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.201	56.375	56.375	5.957	54.158	54.158	5.230
2	1.680	15.275	71.650	1.425	12.953	67.111	3.674
3	1.095	9.954	81.605	.878	7.982	75.093	3.712
4	.608	5.524	87.128				
5	.331	3.013	90.141				
6	.271	2.466	92.608				
7	.247	2.242	94.850				
8	.201	1.829	96.678				
9	.174	1.579	98.257				
10	.132	1.202	99.459				
11	.060	.541	100.000				
Extraction Method: Principal Axis Factoring.							
When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.							

that higher than 0.7. Both results supported the convergent and discriminant validity findings of the dataset.

Confirmatory Factor Analysis (CFA): Model Fit All Variables

The confirmatory factor analysis (CFA) was run for the whole model to evaluate the model's fit. The CFA results showed a good fit between the measurement model and data ($\chi^2 = 940.144$, $df = 517$) with CFI = 0.916, GFI = 0.775 and NFI = 0.833 and TLI = 0.904 scores respectively. While RMSEA = 0.078. The result of CFI, TLI and NFI exceeded their acceptable levels being above 0.90 except for GFI close to 0.9 (0.829). The Goodness-of-fit indices thresholds and our obtained results are presented in Table 6 below. All of the overall fit statistics compared to thresholds indicated a good fit of the nine-factor models to the data. Table 6 depicted a summary of these indexes with the recommended threshold values for a model fit index against our data results.

Figure 2 shows the final measurement model for the study demonstrating a good fit to the collected data and this suggests proceeding to assess reliability and validity of the measurement model. The model has also achieved a good reliability and discriminant validity.

It has higher level of composite reliability (CR) than the suggested level of 0.70 (Hair, Anderson, Black, & Babin, 2016). There were comprises of "Richmotimp" = 0.940; "Achievepw" = 0.929; "Respectpw" = 0.856; "Budget" = 0.909; "Donate" = 0.887; "MakeMoney" = 0.815; "Falsify" = 0.835; "Bribery" = 0.895; and "Stealing" = 0.900. Composite reliability is considered the common procedure used in SEM for evaluating reliability.

To sum up, this paper managed to achieve its research objective, which is developing an instrument to measure Malaysian's money attitudes and crime intention. There are six factors under the money attitude variable which consist of "Rich (RMI)", "Achievement (ACPW)", "Respect (RSPW)", "Budget (BUD)", "Donate (DON)" and "Make Money (MK\$)". It concludes that Malaysians demonstrate a relatively higher mean for the money attitude in three important constructs; "Rich" (CR = 0.940), "Achievement" (CR = 0.929) and "Budget" (CR = 0.909). This is not surprising as money plays an important role in an individual's status or represents one's social status.

Meanwhile, for the crime intention construct, this study found three factors which are "falsifying" (CR = 0.835), "bribery" (CR = 0.895) and "stealing"

Table 6 Model Fit Index in Assessing a Model

Fit Index	Acceptable Threshold Value	Study Results	Note
Absolute Fit Index			
Chi-square, χ^2	$p > 0.05$		Affected by sample size if >200
RMSEA	≤ 0.10	0.078	A lower value of RMSEA indicates a better model fit.
SRMR	≤ 0.08		A lower value of SRMR indicates a better model fit.
GFI	≥ 0.90	0.775	The possible range of GFI values is 0 to 1 with higher value indicates a better fit.
Incremental Fit Index			
CFI	≥ 0.90	0.916	The possible range of CFI values is 0 to 1 with higher value indicates a better fit.
NFI	≥ 0.90	0.833	The possible range of NFI values is 0 to 1 with a higher value indicates a better fit.
TLI	≥ 0.90	0.904	The possible range of TLI values is 0 to 1 with a higher value indicates a better fit.
Parsimony Fit Index			
Relative Chi-square (χ^2/df)	≤ 5.0		Preferably less than 3.0

Source: Awang, 2013; Hair et al., 2016.

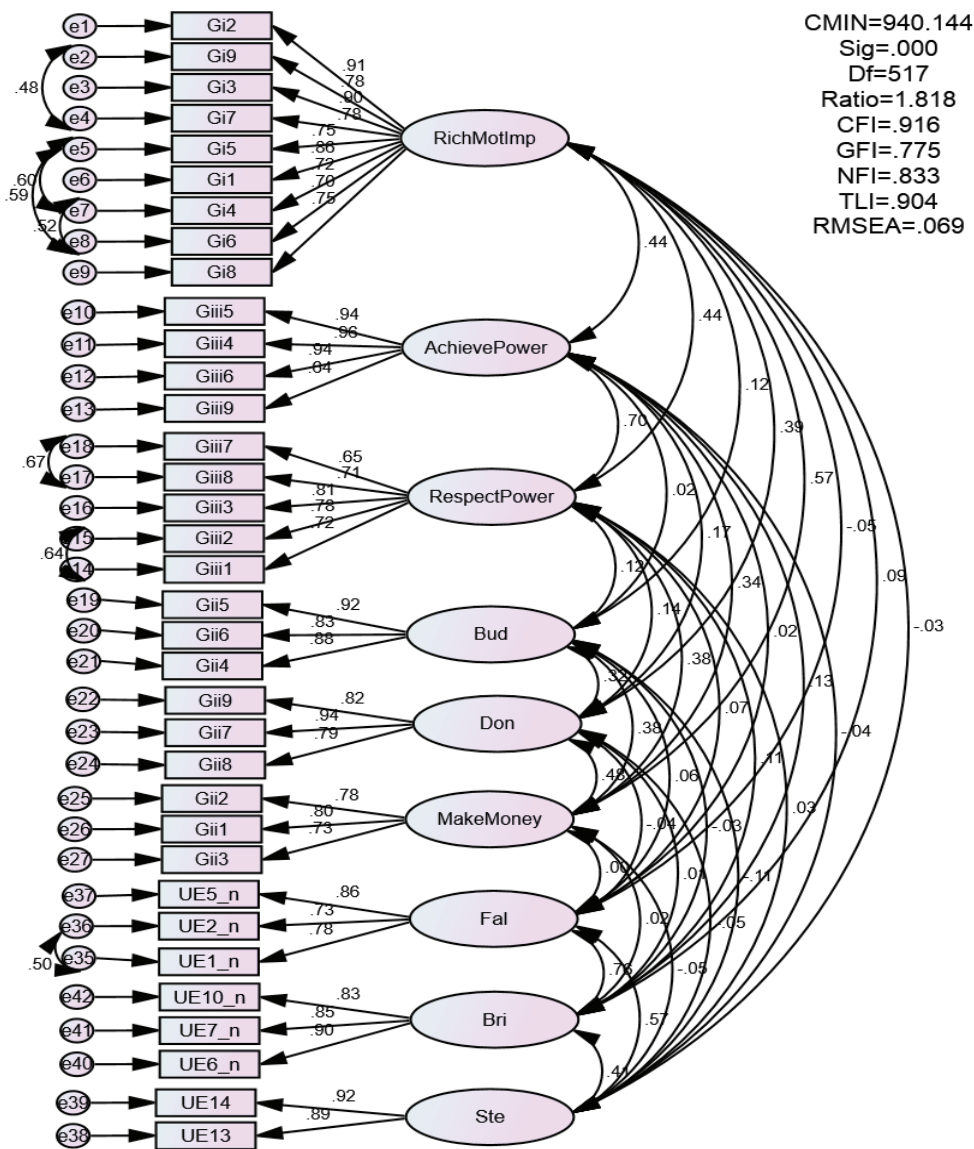


Figure 2 Measurement Model (CFA)

(CR = 0.900). Analysis reveals Malaysians have a moderate tendency for crime intention. This is as expected since other literatures found negative behavior tend to be underreported due to social desirability issues (Tang & Sutarso, 2013; Lemrova et al., 2014). This study found the item for 'stealing' (UE14); "I will not steal or misappropriate asset (i.e: money, equipment, materials) at work" has obtained the highest factor loadings (0.92) compared to other types of criminal behavior. Followed by item 'bribery' (UE6); "I will try to commit giving or receiving bribe at work in future" with factor loadings = 0.90. These findings are consistent with Wong (2008) and Lau, Choe, & Tan (2011) who studied the money profiles of Malaysian

society and they found different attitudes toward money affect people's business ethics and unethical behavior.

CONCLUSION

The study aimed to develop a factor scale for money attitude and crime intention for Malaysians' sample. Exploratory factor analysis (EFA) was employed to analyze the inter-relationships between variables and to explore the factor structure of the measurement. The result of the EFA is further refined using confirmatory factor analysis (CFA). Both of this analysis was crucial to assess the measurement model for all constructs

and to explain how measured variables logically and systematically represent construct in the model (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014; Hooper, Coughlan, & Mullen, 2008). Apparently, with factorial analysis, this study shows an acceptable model fits and recommends the feasibility of applying these constructs in tandem with the underlying theory. On a different note, it indicates that this model is useful in measuring both the money attitude and crime intention constructs.

The purpose of developing this instrument was based on our practical needs for a better understanding of money and crime attitudes in the Malaysia context. The results of this study suggest several important conclusions. First, it is found the concept of money attitudes is multidimensional and may influence individuals' behavior. The proposed framework managed to measure money attitude and crime intention among Malaysians. Thus, it is essential to develop an instrument to measure the money attitude and criminal behavior among Malaysians. Second, this study affirms the prevalence of money attitude and crime attitudes among samples. Money plays an important role to represents one's social status, particularly money is a motivator for individuals to become 'rich' and portray their 'achievement'. Third, the money attitude is noteworthy and has the ability to influence individuals' behavior. 'Stealing' and 'bribery' are the most concerning types of crime among Malaysians. Thus, it is important to encourage ethical values and financial education for Malaysians as behavior towards money is influenced by how they perceive money – its value, aims, and effects.

Pertaining to research limitations, this study has several limitations from survey development processes. First, the study used a convenient sample rather than a random sample as the scale development sample. Second, the study only measures the propensity for crime behavior (falsifying, bribery and stealing) and not the actual criminal behavior. Third, it may be more meaningful to survey the working population rather than students, as employees owned income that may influence their money attitude. These characteristics of the development sample could limit the generalization of the result. Thus, the result should be carefully interpreted in this light.

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APPENDIX

Table 1 Mean, SD and Inter-item Correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Rich	11.91	2.58	-0.111	-0.132	0.064	0.095												
Mot	11.54	2.68	-0.088	-0.060	0.045	0.115	0.721											
Imp	11.77	2.38	-0.080	-0.111	-0.021	0.115	0.795	0.713										
Make\$	11.15	2.12	-0.158	-0.055	0.037	0.061	0.488	0.484	0.416**									
Budget	10.66	2.66	-0.123	0.043	-0.002	0.056	0.098	0.151	0.155	0.335*								
Donate	11.18	2.42	-0.020	-0.144	0.033	0.102	0.319	0.328	0.355	0.422	0.296							
Respect	9.30	2.58	-0.100	-0.095	0.002	-0.060	0.306	0.304	0.386	0.272	0.133	0.115						
Achvm	10.14	2.80	-0.021	-0.098	-0.117	0.011	0.385	0.423	0.41	0.316	0.023	0.154	0.525					
Power	9.86	2.69	-0.080	-0.007	0.008	-0.014	0.403	0.36	0.479	0.363	0.056	0.146	0.605	0.659				
Falsifying	9.59	3.74	-0.140	0.020	0.098	0.016	-0.061	0.064	0.007	-0.003	0.033	-0.016	0.062	0.003	0.023			
Bribery	9.71	3.72	-0.150	0.052	0.124	-0.037	0.022	0.111	0.101	-0.002	-0.048	-0.013	0.077	0.043	0.070	0.691*		
Stealing	8.99	3.50	-0.176	-0.033	0.104	-0.026	-0.059	0.042	0.019	-0.070	-0.072	-0.055	0.096	-0.036	-0.012	0.774	0.761**	
Cronbach's							0.80	0.80	0.79	0.81	0.85	0.83	0.82	0.81	0.81	0.86	0.87	0.817**

* $p < 0.1$; ** $p < 0.05$.