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Determinants of Financial Risk Tolerance: An Analysis of Psychological Factors

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Abstract: Financial risk tolerance is a complex process that goes beyond the exclusive use of demographic characteristics. Despite the necessity of developing a comprehensive financial risk tolerance measurement model, the psychological factors that might be important have been long overlooked. The purpose of this paper is to investigate the influence of psychological factors on financial risk tolerance level. The sample ($n = 1204$) comprises university students from different parts of Malaysia. Significant financial risk tolerance differences are found as a function of gender and race. Students with high financial risk tolerance (FRT) are found to be positively correlated with the propensity for regret, the propensity for trust, the propensity to attribute success to luck, the propensity for overconfidence, and the propensity for social interaction, but not with happiness in life. These findings highlight the importance of individual propensities in assessing the financial risk tolerance level of a person. This study will act as an aid to financial advisors in understanding the behavior and attitudes of their clients.

Keywords: financial risk tolerance; psychological factors; race; behavioral finance; religiosity

1. Introduction

The study of individual financial risk tolerance has gained attention over the past couple of decades (Anbar and Melek 2010; Carr 2014; Grable 2000, 2008; Yao 2013). Specifically, the role of financial risk tolerance in shaping household financial decision-making behavior is well documented in the consumer finance literature. As early as the 1960s, the concept of risk tolerance was used by researchers to investigate consumer financial issues. For example, Kogan and Wallach (1967) defined risk tolerance as the willingness of a person to become involved in a situation where there is high uncertainty of achieving a goal and having the possibility to make a loss. Likewise, studies in the 1970s, 1980s, 1990s, and 2000s have also defined risk tolerance as the willingness of an individual to take risks under uncertainty (Carr 2014; Grable 1997, 2008; Morin and Suare 1983; Okun 1976; Pan and Statman 2012; Weber et al. 2002). Some researchers, on the other hand, have defined risk tolerance as the inverse of risk aversion (Gron and Winton 2001). Normative and descriptive models have long been used to explain risk tolerance in the past. Evidence of experimental approaches in the field of risk tolerance also exist (Bateman and Munro 2005; Kahneman and Tversky 1979). Earlier studies that recognize the risk and survey the propensities of individuals to take risks can be vastly attributed to the works of Cohn et al. (1975), Markowitz (1952), and Siegel and Hoban (1982).

Risk tolerance plays an important role in a wide range of individual financial decision making, such as choosing debt versus savings, choosing a type of mortgage, the use and management of credit cards, etc. (Anbar and Melek 2010; Campbell 2006; Carr 2014;

Grable 1997, 2008; Yao 2013). Financial risk tolerance is often used as one of the important inputs in financial planning models, investment suitability analysis, and consumer decision frameworks (Anbar and Melek 2010; Carr 2014; Grable 1997, 2008; Yao et al. 2005). However, an individual's financial risk tolerance is subjective and somewhat difficult to measure, unlike the other frequently used inputs (i.e., goals, time horizon, and financial stability).

It is well established in the literature that financial risk tolerance can be determined by analyzing an individual's demographic, socioeconomic, and attitudinal characteristics such as gender, age, marital status, education, race, income, employment status, wealth, etc. (Anbar and Melek 2010; Carr 2014; Grable 2000, 2008; Loomes and Sugden 1982; Pan and Statman 2012; Yao et al. 2005). Nevertheless, evidence of limitations of the classic financial risk tolerance assessment models using the aforementioned attributes also exist (Anbar and Melek 2010; Carr 2014; Grable 2000; Pan and Statman 2012; Yao et al. 2005). As put forward by Pan and Statman (2012), one of the reasons behind this deficiency is the high emphasis on demographic analysis, while ignoring other potential factors that may be relevant. For instance, individuals with a high propensity for overconfidence may show high financial risk tolerance and may not be easily satisfied. However, are such individuals truly financial-risk-tolerant or is their high propensity for overconfidence influencing the measurement of their financial risk tolerance?

The inclusion of attributes such as ethnic group differences further complicates the measurement of financial risk tolerance and its relationship with other factors (Khalid 2011; Shafii 2009; Yao et al. 2005). This is because cultural variations stemming from different ethnicities play an important role in influencing an individual's financial risk tolerance (Yao 2013). A higher level of risk tolerance has been found among whites in comparison to non-whites (Yao et al. 2005). Similarly, a strong relationship exists between race and an individual's level of overconfidence (Rahman et al. 2019). As a result, the unresolved questions regarding the determinants of financial risk tolerance are yet to be fully addressed (Anbar and Melek 2010).

With this backdrop, the present study aims to take a step further and investigate whether behavioral factors (individual propensities) are related to the financial risk tolerance levels of Malaysian university students. Additionally, this study also investigates gender, race, and religious differences in terms of individual propensities and religiosity. The results of the present study shed light on some interesting aspects. Although, individual propensities, namely, the propensity for regret (PR), the propensity for trust (PT), the propensity to attribute success to luck (PASL), the propensity for overconfidence, (POC) and the propensity for social interaction (PSI), were strongly correlated to financial risk tolerance (FRT), happiness in life exhibited no correlation with financial risk tolerance (FRT). Additionally, strong financial risk tolerance differences were expressed as a function of gender and race. Similarly, in comparison to females, males had a higher propensity to attribute success to luck and for overconfidence and a lower propensity for social interaction and happiness in life. Malay students, on the other hand, in comparison to Indians, had a higher propensity for trust and happiness in life. Conversely, significant differences were observed among religions for PR, PT, HL, and POC. However, individuals from different religious backgrounds showed no difference in terms of financial risk tolerance.

The present study contributes to the existing literature in three ways. First, it focuses on psychological determinants, which were earlier considered beyond the spectrum of risk tolerance. Second, it focuses on the presence of three major ethnicities with different religious and cultural values. Third, it focuses on the relationship of financial risk tolerance with personal savings, investment behavior, wealth accumulation, financial planning, risk management, and wealth disparity among individuals (Yao et al. 2005; Anbar and Melek 2010; Van de Venter et al. 2012; Carr 2014).

In addition, we believe that in an emerging market such as Malaysia, where the heterogeneity of individuals is relatively high (Snodgrass 1995; Shafii 2009) and there is a presence of wealth inequality (Khalid 2011; Ravallion 2020; Shafii 2009), the study of financial risk tolerance has become more relevant than ever before.

2. Materials and Methods

2.1. Sample Selection

We distributed a questionnaire containing a total of 55 questions. While 5 questions measured the dependent variable (financial risk tolerance), 45 questions were targeted toward measuring religiosity and individual propensities of interest, and the remaining 5 questions were about the demographic characteristics of the respondents. To ensure the representativeness of the targeted population, a quota sampling method was used. The sample consisted of university students from six public universities, namely, the University of Malaya; Putra University, Malaysia; the National University of Malaysia; University Technology Malaysia; MARA University of Technology; and the International Islamic University Malaysia (UIAM). The sampling frame consisted of both undergraduate and postgraduate students, among whom some were working adults. The participants belonged to six major cities in Malaysia. A quota sampling method was used to collect data from the targeted population. The lecturers and professors at the selected universities were contacted to distribute the survey in their respective classes to reach a bigger number of students. The total number of questionnaires distributed was 1679; 1314 questionnaires were returned, and 1204 were usable for the analysis. (The rest had missing responses.) We used English throughout since our respondents said that they were comfortable answering questionnaires in English. The constructs, items, and code numbers are presented in the Appendix A (Table A2).

The students who participated in the survey represented the targeted population well, primarily because they belonged to the Business and Economics Schools of the aforementioned universities; as a result, they had basic knowledge about financial risk. Ariely (2012) further justifies the inclusion of students in the subject pool by pointing out that the core actions of young adults are similar to those of adults in the decision-making process.

2.2. Variable Measures

The financial risk tolerance questions were adapted from Ben-Ner and Halldorsson (2006), Wärneryd (1996), Weber et al. (2013), and Wood and Zaichkowsky (2004). Prior studies used these questions to measure the willingness to take a risk (risk tolerance). Brooks et al. (2008) suggested that this scale differentiates individuals with high risk tolerance from those with low risk tolerance and that it has high reliability. In this study, all the contracts were measured on a scale ranging from strongly disagree (1) to strongly agree (5). For example, a higher score in FRT indicates high financial risk tolerance. Religiosity was measured through ten items from the reportedly highly reliable ($\alpha = 0.96$) scale by Worthington et al. (2003). This religiosity scale was used because the wordings of the scale items are very general and not linked to any specific religion, because they are formulated to measure the level of religiosity. Mokhlis (2008) used this religiosity scale in the context of Malaysia, and it was reported to be highly reliable ($\alpha = 0.85$). The propensity for regret (PR) construct was adapted from Bergman et al. (2007), Saffrey et al. (2008), and Spunt et al. (2009). Propensity for trust (PT) was assessed using 6 items adapted from Ben-Ner and Halldorsson (2010) and Naef and Schupp (2009). The measure of happiness in life (HL) was adapted from Argyle et al. (1989), Diener et al. (1985), Clark and Lelkes (2009), and Pavot and Diener (1993). The questions of the propensity to attribute success to luck construct were adapted from Maltby et al. (2008) and Wood and Zaichkowsky (2004). The propensity for overconfidence was measured using 5 items adapted from Wood and Zaichkowsky (2004). Finally, the measure of propensity for social interaction towards financial risk tolerance was adapted from Hong et al. (2004) and Moely et al. (2002).

3. Results and Discussion

Table 1 shows the demographic profile of the respondents. Most of the respondents are female (67.4%), Malay (66.9%), single (90%), Islam (69.4%), and aged between 21 and 30 years old (68.4%). We aimed for 66.1% Malay, 24.9% Chinese, and 7.5% Indian respondents, which represents the Malaysian population according to the Tenth Malaysian

Plan 2011–2015 (Malaysia 2012). The sample is, therefore, representative of the Malaysian population in terms of race.

Table 1. Demographic profile.

Demographic Characteristics		Frequency	Percentage
Gender	Female	811	67.4
	Male	393	32.6
Race	Chinese	303	25.2
	Indian	95	7.9
	Malay	806	66.9
Religion	Buddhism	270	22.4
	Christianity	37	3.1
	Hinduism	61	5.1
	Islam	836	69.4
Marital status	Married	120	10
	Single	1084	90
Age	20 years old	296	24.6
	21–30 years old	824	68.4
	31–40 years old	58	4.8
	41–50 years old	20	1.7
	>51 years old	6	0.5

Table 2 reports the descriptive statistics of all the variables involved in the analysis. A variety of descriptive statistics are provided because of the presence of rare individual propensities in the context of Malaysia.

Table 2. Descriptive statistics of variables.

Variable	Possible Range	Mean	SD	Median	Skewness	Cronbach's α
Financial risk tolerance	1–5	3.24	0.69	3.25	−0.292	0.56
Propensity for regret	1–5	3.75	0.57	3.75	−0.678	0.65
Propensity for trust	1–5	3.2	0.63	3.25	−0.482	0.82
Happiness in life	1–5	3.5	0.76	3.67	−0.405	0.69
Propensity to attribute success to luck	1–5	2.86	0.72	3.00	−0.468	0.79
Propensity for overconfidence	1–5	3.64	0.58	3.67	−0.252	0.60
Propensity for social interaction	1–5	3.08	0.90	3.00	−0.057	0.85
Religiosity	1–5	3.83	0.74	4.00	−0.639	0.92

FRT = financial risk tolerance, REL = religiosity, PR = propensity for regret, PT = propensity for trust, HL = happiness in life, PASL = propensity to attribute success to luck, POC = propensity for overconfidence, PSI = propensity for social interaction.

An exploratory factor analysis was conducted to assess the inner structure of the measure. The principal axis factoring method with direct oblimin rotation found that all factors with an eigenvalue over 1 explained 59.50% of the shared variance (factor loadings in Appendix A, Table A1). Next, a confirmatory factor analysis (CFA) was conducted to assess the validity and unidimensionality of the items involved. A multiple iteration process of CFA was performed on the measurement models to purify the items (Appendix A, Figure A1). The item purification process involves finding potential items to be deleted from the measurement model. This purification process through CFA was continued until the parameter estimates yielded an acceptable goodness-of-fit for the measurement model. A total of 35 out of 50 items were retained after CFA. The final measurement model, after some modifications, achieved a satisfactory goodness-of-fit (GOF). Table 3 presents fit indices for the CFA of the variables.

Table 3. Fit indices for the CFA of variables.

χ^2	df	ϱ	χ^2/df	GFI	CFI	NFI	RMSEA
1902.13	531	<0.000	3.582	0.912	0.911	0.881	0.046

Table 4 depicts the correlation coefficient values between the variables used in the analysis. Three out of 28 correlations are not statistically significant, ranging from 0.01 to 0.22 in absolute values (statistically insignificant correlations are in bold). Individuals with high financial risk tolerance generally tend to be more regretful, attribute success to luck, be trusting, be overconfident socially, and be unhappy in life. However, our findings show that the correlations between these attributes are weak. The insignificant correlation between happiness in life and propensity for regret provides a rationale for why happiness in life and regret are mutually exclusive. Among all the variables considered, financial risk tolerance seems to be the most correlated with propensity for trust and the least with propensity for social interaction, which implies that financial-risk-tolerant individuals are more trusting and faintly social. The correlation between financial risk tolerance and religiosity is also found to be very low, indicating the poor influence of religiosity on an individual's financial risk tolerance level. While religiosity is found to be positively correlated, for all the other individual propensities, with the exception of propensity to attribute success to luck, it can be inferred that religious people do not believe in luck, but rather, attribute their success to hard work.

Table 4. Correlation matrix of variables.

	PR	PT	HL	PASL	POC	PSI	REL
PT	0.100 ***						
HL	−0.046	0.104 ***					
PASL	0.092 ***	0.101 ***	0.097 ***				
POC	0.070 **	0.074 **	0.215 ***	0.209 ***			
PSI	0.106 ***	0.061 **	0.131 ***	0.079 ***	0.087 ***		
REL	0.155 ***	0.181 ***	0.223 ***	−0.011	0.051 *	0.136 ***	
FRT	0.173 ***	0.230 ***	−0.032	0.175 ***	0.140 ***	0.073 **	0.090 ***

FRT = financial risk tolerance, REL = religiosity, PR = propensity for regret, PT = propensity for trust, HL = happiness in life, PASL = propensity to attribute success to luck, POC = propensity for overconfidence, PSI = propensity for social interaction. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

The results for the skewness values, Cronbach's α scores, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and correlation values show that the data achieved the minimum requirements for further statistical analysis.

Table 5 reports the results of the effects of five demographic characteristics. T-tests (for gender and marital status), one-way ANOVA (for race and religion), and correlations (for Age) were used to analyze the effects. The mean scores reflect that males have significantly higher scores than females in FRT, PASL, and POC, while females score significantly higher than males in PR, HL, PSI, and religiosity. However, no significant difference is observed between males and females in terms of propensity for trust. Likewise, married students have significantly higher mean scores in comparison to unmarried students only in propensity for social interaction and religiosity. A significant difference among races is found with respect to FRT, PR, PT, HL, and religiosity. However, no significant difference is observed among races with regard to PASL, POC, and PSI. Although Chinese and Malay respondents score higher than Indian respondents in financial risk tolerance, not much difference is found between Chinese and Malay respondents. In terms of propensity for regret, the Chinese respondents are found to respond differently to Malay respondents. The mean scores indicate that Malay students score higher than both Indian and Chinese students, while Indians score higher than only the Chinese students. The findings for propensity for trust reflect that among the three races, Malays have the highest propensity for trust. Indian students are found to score the

lowest for propensity for trust. Similarly, the Malay students are found to contribute to the highest score in terms of HL, followed by the Chinese and the Indian students. With regard to religiosity, the Malay students, again, secure the first position, followed by the Indian and the Chinese students. Therefore, in the context of Malaysia, it can be concluded that the Malay students are the most influenced by religiosity and Chinese students the least. Although no significant differences among races are observed with respect to PASL, POC, and PSI, the Chinese students score slightly higher than the other races in PASL and POC. Significant differences are observed among religions for PR, PT, HL, POC, and REL, but not for FRT. While Islam has the highest mean score in PR, PT, HL, and REL, Hinduism secures the first position in POC only. However, Hinduism is found to possess the lowest mean with respect to propensity for regret and propensity for trust. Buddhism and Christianity, on the other hand, score the lowest mean in HL, REL, and POC, respectively. A statistically significant negative correlation is observed between age and FRT, PT, PASL, and PSI, respectively. Only religiosity is found to have a weak positive correlation with age.

Table 5. Mean scores and effects for each variable by gender, marital status, race, religion, and age.

Characteristic	FRT	PR	PT	HL	PASL	POC	PSI	REL
Gender:								
Male	3.40	3.71	3.17	3.44	2.92	3.70	3.00	3.78
Female	3.17	3.77	3.22	3.53	2.82	3.61	3.12	3.86
t	5.53 ***	−1.80 *	−1.36	−1.84 *	2.31 **	2.43 **	−2.22 **	−1.74 *
Marital status:								
Married	3.23	3.75	3.09	3.50	2.70	3.65	2.71	4.05
Single	3.25	3.75	3.22	3.50	2.87	3.64	3.12	3.81
t	0.281	−0.02	1.78 *	−0.10	2.47 **	−0.25	4.81 ***	−3.48 ***
Race:								
Chinese	3.24	3.66	3.10	3.41	2.89	3.66	3.10	3.10
Indian	3.10	3.73	3.00	3.33	2.76	3.65	2.97	3.57
Malay	3.27	3.79	3.28	3.55	2.85	3.63	3.11	4.14
F	4.14 **	5.81 **	21.10 ***	6.29 ***	1.30	0.26	0.89	365.2 ***
Religion:								
Buddhism	3.23	3.66	3.06	3.39	2.92	3.67	3.10	3.00
Christianity	3.20	3.72	2.93	3.45	2.73	3.61	2.97	3.77
Hinduism	3.12	3.63	2.87	3.43	2.79	3.83	2.97	3.39
Islam	3.26	3.79	3.29	3.54	2.85	3.62	3.09	4.14
F	0.93	4.62 **	18.15 ***	3.05 **	1.23	2.60 *	0.57	288.1 ***
Age:								
20 years	3.32	3.78	3.21	3.56	2.96	3.64	3.13	3.70
21–30 years old	3.23	3.75	3.23	3.45	2.82	3.63	3.12	3.87
31–40 years old	3.12	3.58	3.04	3.63	2.91	3.81	2.67	3.10
41–50 years old	3.04	3.85	2.79	4.02	2.75	4.02	2.44	3.99
>51 years old	3.38	4.00	2.50	3.67	2.38	3.00	2.13	3.50
r	−0.071 **	−0.023	−0.087 ***	0.026	−0.076 ***	0.034	−0.119 ***	0.087 ***

FRT = financial risk tolerance, REL = religiosity, PR = propensity for regret, PT = propensity for trust, HL = happiness in life, PASL = propensity to attribute success to luck, POC = propensity for overconfidence, PSI = propensity for social interaction. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

Studies that outline the limitations of the traditional risk tolerance model argue that only demographic, socio-economic, and attitudinal characteristics are not sufficient to predict an individual's financial risk tolerance (Anbar and Melek 2010; Carr 2014; Grable 2000; Pan and Statman 2012). The low value of adjusted R^2 depicted in Table 6 provides support to the aforementioned argument. This implies that to increase the explained variance in FRT differences, in addition to demographic dimensions, more relevant factors must be taken into consideration. The findings in Table 6 also reflect the impact of demographic attributes, namely age, gender, and race, on individual propensities. Males are found

to possess 16.5% more financial risk tolerance than females. Similarly, males are found to have a higher propensity to attribute success to luck and for overconfidence and a lower propensity for social interaction and happiness in life, in comparison to females. Complementing the results that demonstrate the racial differences in Table 5, the results in Table 6 show that the Chinese and the Malay students are 10% and 15.2%, respectively, more financial-risk-tolerant than the Indian students. Although no significant difference is found between the Chinese and the Indian students in terms of PR, PT, HL, PASL, POC, and PSI, significant differences do exist between the Malay and Indian students with regard to PT and HL. This implies that in comparison to the Indians, the Malay students have 21.9% and 13.5% more propensity for trust and happiness in life, respectively.

Table 6. Relationships between individual propensities with age, gender, and race: OLS approach.

Dependent Variable	Financial Risk Tolerance	Propensity for Regret	Propensity for Trust	Happiness in Life	Propensity to Attribute Success to Luck	Propensity for Over-Confidence	Propensity for Social Interaction
Age group	−0.088 ***	−0.029	−0.102 ***	0.021	−0.081 **	0.031	−0.117 ***
	(0.032)	(0.027)	(0.029)	(0.036)	(0.034)	(0.027)	(0.042)
Male	0.165 ***	−0.044	−0.024	−0.051*	0.071 **	0.067 **	−0.055 *
	(0.042)	(0.035)	(0.038)	(0.047)	(0.044)	(0.036)	(0.055)
Constant	3.157 ***	3.799 ***	3.197 ***	3.308 ***	2.894 ***	3.567 ***	3.306 ***
	(0.090)	(0.076)	(0.082)	(0.101)	(0.095)	(0.078)	(0.118)
Race_C	0.101 **	−0.054	0.034	0.050	0.075	0.007	0.055
	(0.079)	(0.067)	(0.073)	(0.089)	(0.084)	(0.068)	(0.105)
Race_M	0.152 ***	0.048	0.219 ***	0.135 ***	0.067	−0.013	0.076
	(0.073)	(0.062)	(0.067)	(0.082)	(0.078)	(0.063)	(0.096)
Adjusted R^2	0.036	0.009	0.042	0.010	0.010	0.003	0.016

Age group ranges from one (20 years old), two (21–30), three (31–40), four (41–50), and five (>51). Male is an indicator variable that equals one for male respondents. Race_C is an indicator variable that equals one for Chinese respondents. Race_M is an indicator variable that equals one for Malay respondents. Reported are regression coefficients and robust standard errors (in parenthesis). *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

4. Conclusions

With the increasing importance of wealth inequality, the growing number of middle-income people, and the high participation in financial activities, understanding factors that influence an individual's financial risk tolerance has become an important area of study. The present study explored the influence of behavioral factors, which were earlier considered beyond the spectrum of risk tolerance, on an individual's financial risk tolerance level. The results indicate that, in addition to demographic attributes, individual propensities such as the propensity for regret, the propensity for trust, the propensity to attribute success to luck, the propensity for overconfidence, and the propensity for social interaction are indeed positively correlated to an individual's financial risk tolerance level. The findings of this study, therefore, provide support to the work of Hanna et al. (2011), who suggested that the incorporation of behavioral factors into the assessment of risk tolerance will increase the validity of risk estimates. For instance, our findings show that the propensity for trust exhibits the highest correlation with financial risk tolerance. This insight can guide both financial advisors and advisees by providing a more comprehensive assessment of financial risk tolerance. Since the correlation between the propensity for trust and financial risk tolerance is high, financial advisors may create a trusting bond with their advisees. Similarly, this study provides evidence of significant differences between Chinese, Indian, and Malay students in regard to financial risk tolerance. This finding may help financial advisors in Malaysia or countries with similar culture and races (e.g., Indonesia, Singapore, etc.) to better understand the risk tolerance of their clients to provide appropriate investment choices. However, the correlation is found to be weak between the individual propensities and financial risk tolerance, which, consequently, puts forward the need for further research to discover additional factors required to increase the explained variance in FRT.

Appendix A

Table A1. Exploratory factor analysis results: factor loadings of all the variable items.

Items	1 (REL)	2 (PR)	3 (PT)	4 (PSI)	5 (PASL)	6 (POC)	7 (HL)	8 (FRT)
REL1	0.775							
REL2	0.799							
REL3	0.776							
REL5	0.750							
REL6	0.771							
REL7	0.832							
REL8	0.803							
REL9	0.819							
REL10	0.685							
PR1		0.783						
PR2		0.697						
PR3		0.579						
PR4		0.686						
PT1			0.700					
PT2			0.749					
PT3			0.770					
PT4			0.799					
PT5			0.725					
PSI1				0.678				
PSI2				0.826				
PSI3				0.880				
PSI4				0.892				
PSI5				0.839				
PSI6				0.855				
PASL1					0.765			
PASL2					0.703			
PASL3					0.778			
PASL4					0.828			
PASL5					0.673			
POC1						0.790		
POC2						0.755		
POC3						0.789		
HL1							0.771	
HL2							0.767	
HL3							0.729	
FRT1								0.801
FRT2								0.697
FRT3								0.730
FRT4								0.744
Eigen Value	6.29	2.27	2.65	3.27	4.16	1.42	1.76	1.822

FRT = financial risk tolerance, REL = religiosity, PR = propensity for regret, PT = propensity for trust, HL = happiness in life, PASL = propensity to attribute success to luck, POC = propensity for overconfidence, PSI = propensity for social interaction.
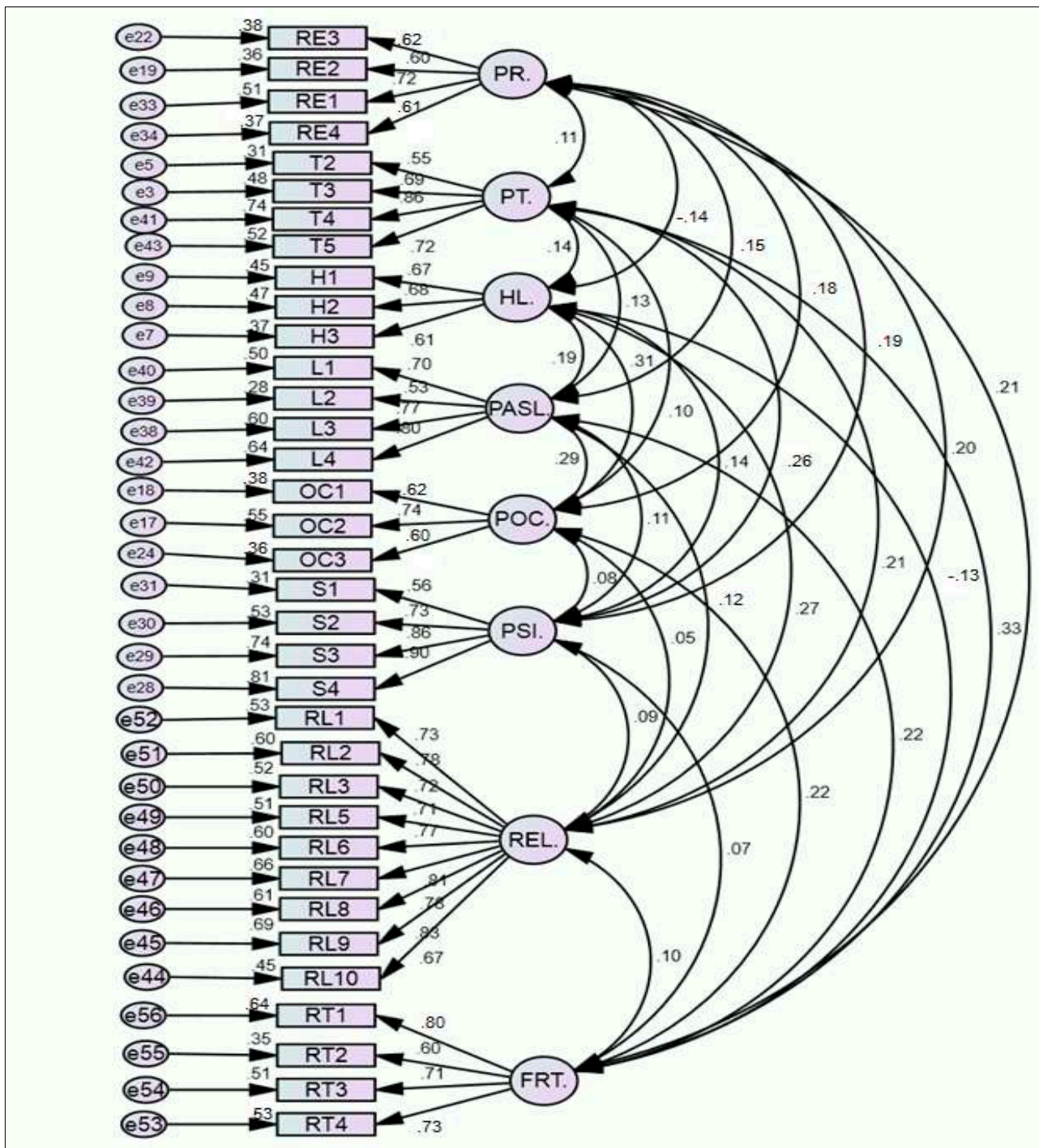
Figure A1. Confirmatory factor analysis results: CFA diagram for independent variables and dependent variable. FRT = financial risk tolerance, RL = religiosity, RE = propensity for regret, T = propensity for trust, H = happiness in life, L = propensity to attribute success to luck, OC = propensity for overconfidence, S = propensity for social interaction.

Table A2. Constructs, items, and code number.

Propensity for regret
PR1: When I assess my financial performance due to my financial choice, I think about opportunities I have passed up
PR2: Once I make a financial decision, I don't look back. (reverse-coded)
PR4: Whenever I make a financial choice, I am curious about what would have happened if I had chosen differently
PR5: Whenever I make any financial decision, I try to get information about how the other alternatives turned out
Propensity for trust
PT1: Generally speaking, I think most of the people in the financial market can be trusted
PT2: I am confident that I can trust people to be involved in making financial investments
PT3: I am confident that I can trust financial institutions
PT4: I am confident that I can trust mutual fund manager's investment decision
Happiness in life
HL1: I am not very much interested in other people financial wealth and happiness
HL2: I rarely wake up feeling depressed for my daily life financial dealings
HL4: In general, I am very happy with my financial condition
HL5: I am satisfied with the financial situation of my parents
Propensity for social interaction
PS1: In the last four weeks, I often took part in the various activities organised by student clubs and societies (e.g., a teaching programme for orphans, educational, etc.)
PS3: I am an active member of my department society
PS5: I do not face difficulties in choosing subjects for any semester
Propensity to attribute success to luck
L1: Luck plays an important part in financial decisions' outcomes
L2: Some people are consistently lucky, and others are unlucky in getting good
financial returns
L3: I believe in luck for any financial return
L4: I often feel like it is my lucky day to make financial decisions
Propensity for overconfidence
OC1: I feel more confident in my own opinions about financial decisions over
opinions of my friends and colleagues
OC2: I believe that on average my financial decisions will be better than others
OC3: When I have a successful decision, I feel that my actions and knowledge
affected the result
Religiosity
RL1: Religion is especially important to me because it answers many questions
about the meaning of life
RL2: I often read books and magazines about my religion
RL3: I spend time trying to grow the understanding of my faith
RL5: I make financial contributions to my religious organisation
RL6: I enjoy spending time with others of my religious affiliation
RL7: Religious beliefs influence all my dealings in life
RL8: It is important to spend time in private religious thought and prayer
RL9: I enjoy taking part in activities of my religious organisation
RL10: I keep well informed about my local religious group and have some
influence in its decision
Financial risk tolerance
RT1: If I believe an investment will carry profit, I am willing to borrow money to make this investment
RT2: I believe I need to take more financial risks if I want to improve my financial position
RT5: I want to be sure my investments are safe. (reverse-coded)

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