# Financial risk tolerance and Behavioral Factors: Evidence from Egypt

**Dalia Ahmed Elmosallamy**
**Assistant Professor**
**Faculty of Business Administration, Economics and Political Science, British University in Egypt,**
**Dalia.Elmosalamy@bue.edu.eg**

**Madiha Refaat Metawie**
**Assistant Professor**
**Business Department, Faculty of Commerce, Ain Shams University, Cairo, Egypt**

**Faculty of Business Administration, Economics and Political Science, British University in Egypt,**
**Madiha.metawie@bue.edu.eg**

## Abstract

This paper is to investigate the influence of specific behavioral factors on financial risk tolerance (FRT) taking religiosity as a moderating variable. A standardized questionnaire was used for this study, a total of 334 completed questionnaires were used. The proposed research model was validated and assessed using structural equation modelling. The findings revealed that propensity for regret, propensity for trust, happiness in life, propensity to attribute success to luck and propensity for

overconfidence, all have positive significant influence on FRT. The findings also support the religiosity position as a moderating factor in the proposed research model. FRT is a complex mechanism that entails many psychological considerations. Our results suggest that further research is needed to decide which additional factors financial advisors can use to increase the explained variance in FRT inequalities.

**Key words:** Financial Risk Tolerance, Propensity for regert, Propensity for trust, Happiness in life, Propensity to attribute success to luck, Propensity for overconfidence, Propensity for social interaction, Religiosity.

**Importance of the study;** Despite the importance of FRT in financial and investment decision-making, specific theory related to the assessment and prediction of FRT is very limited (Kannadhasan *et al.*,2016).The importance of the findings of this study would mainly suggest that understanding the association between specific behavioral propensities and FRT in Egyptian investors would help investment advisors and managers to know if investors are truly financial risk tolerant or their financial risk tolerance is exaggerated by their propensities. This research seeks to contribute to the literature, since there are relatively very few studies from an emerging and/or Arab markets and to the researchers' best knowledge, none from the Egyptian market despite its size and potential for growth. Our research will help

not only investors but also financial institutions, banks and financial advisors in studying and understanding the main factors that induces investors to invest in general and in the Egyptian market in specific, along with their decision making practice. Further research of behavioral factors is important for financial consultants and advisors to better develop various investment alternatives and asset distribution strategies for their clients of different risk preferences.

## Literature review

It is argued that any financial and investment decision-making process requires mainly four fundamental inputs; goals, time horizon, financial stability, and financial risk tolerance (Garman and Forgue, 2011). While the former three inputs are relatively objective in nature, the latter input (FRT) is highly subjective. The conceptual link between risk tolerance and investment decisions has been largely upheld by traditional financial models which for the most part expect that investors are rational. Hemrajani *et al.* (2021) argue that according to the Expected Utility Theory (EUT) individuals are assumed to be rational and have constant risk preferences. With the development of Markowitz Modern Portfolio Theory as an extended version of EUT, individuals are viewed to avoid risk by creating diversified portfolios that maximize utility by increasing returns for a given level of risk. The questions posed by many researchers, if this

model is true, why does the behaviour of individuals differ from what they are expected to do. For example, and as argued by Hemrajani et al. (2021) individuals, who bought insurance, also gamble. Furthermore, individuals mostly cannot be averse risk all their life because emotional reactions (such as worry, fear, dread, and anxiety) towards risks often deviate from rational assessments and directly influence behaviour (Olson, 2006), thus challenge the assumption of standard utility function in the field of risk management implying that changes in risk tolerance can also result from changes in the psychological influences and not only a function of socio-economic and biological differences.

Understanding customers' risk tolerance is a key to manage expectations. Financial risk tolerance (FRT) was defined by Sulaiman (2012) as the maximum amount of volatility an investor is willing to take when making a financial decision and is considered an important factor in savings, investments choices, asset allocation plans, portfolio accumulation strategies, risk management and insurance choices. Kannadhasan *et al.* (2016) added that FRT refers to investors' willingness to accept the negative changes in the value of their investment or to accept an outcome that is adversely different from their expected one. Carr (2014) argues that knowing risk tolerance is essential to design appropriate investment strategies, however it is quite challenging. Behavioural finance is a relatively new research. Singh and Yadov (2016) argues that within behavioural finance context,

information configuration and the features of capital market participants scientifically influence individuals' decisions regarding investments as well as market results. They agree with Sulaiman (2012) that investors have behavioural biases when taking investing decisions and these decisions are not only related to the financial environment but also on the different type of investors, family back ground, age, occupation, sex, income, marital status, risk tolerance capacity, education, demographic environment and advice of financial expert and advisor. Wall *et al.* (2005) view that an individual's desire to tolerate high or low risk is a part of their own personality and that generally, individual's risk-taking ability is high when their level of wealth and income are relatively higher than their liabilities.

There is a general consensus in literature about the relationship between FRT and other variables. For example, Pan and Statman (2012) and Dohmen *et al.* (2011) documented a relationship between FRT and demographics, documenting males to be more financial risk tolerant than females. Focusing on age and marital status, Anbar and Eker (2010) reported that higher age is linked to less financial risk tolerance and married individuals are less financial risk tolerant than are unmarried ones. With respect to ethnicity, Yao *et al.* (2005) examined that whites are more risk tolerant than non-whites, additionally, FRT increases with levels of education.

In the attempt to differentiate between risk averse and risk seeking, Keister (2004) argue that risk averse investors are seeking gains with high probabilities and losses with low probabilities, while investors who are risk seeking are those who aim for gains with low probabilities and losses with high probabilities. Accordingly, knowing the risk tolerance of individuals will be vital in designing a successful financial plan and will help in visualising the link between financial risk tolerance and investment decision making. Rahman (2019) argues that being able to interpret the relationship among several behavioural propensities and FRT will pave the path towards planning the investors' preferred investment strategies. In this research, we are following the work of Rahman (2019) to examine the influence of specific behavioral factors on financial risk tolerance taking religiosity as a moderating variable. The importance of the findings would mainly suggest that understanding direct and indirect association between behavioural propensities and FRT would help investment advisors and managers to know if investors are truly financial risk tolerant or their FRTs are exaggerated by their propensities.

## Theoretical Model defined

**Propensity for regret:** Joel *et al.* (2012) sees regret as accusing oneself or taking personal responsibility for making mistakes and it affects the decision making process especially under uncertainty.

Connolly and Zeelenberg (2002) added that regret is the emotion that has received the utmost attention in research from decision theorists since it can significantly influence risk tolerance and decisions and could lead to either risk aversion or risk seeking.

As a result, in many occasions, regret aversion makes investors more tolerant to financial risks as in (Tsai, 2012) who documented a significant positive relationship between regret and risk aversion indicating that people who have high propensity for regret tend to have less FRT. On the other hand, Pan and Statman (2012) found no relation between regret and risk tolerance. In this study, this relationship will be investigated as follows:

H1. Propensity for regret has positive impact on FRT.

**Propensity for trust:** Trust plays an essential role in financial decision making. Tomkins (2001) views trust as adopting a belief without full information and elaborated that when making financial decision, investors may choose not to obtain additional information about the companies if they trust their investment advisor. Rahman (2019) views that it is of crucial importance for financial advisors to understand the relation between propensity for trust and FRT since the former may exaggerate or underestimate the level of risk tolerance.

In investigating the relationship between trust and risk taking in investment decisions, according to Pascale and Pascale (2009), they view trust as a main asset of the economy since it seeks to reduce the perception of risk among people, institutions and

systems, and once trust in an economic transaction is confirmed, it is involved in positive risk. Dalmolin *et al.* (2019) also presented evidence in the economic-financial context that there is a positive relationship between risk tolerance and trust in financial institutions. Yamagishi and Yamagishi (1994) agrees and argues that trusting is equal to risk taking and that risk must exist for trust to occur and when trust occurs more risk will be attractive. Alternatively, other studies as Olsen (2008) documented a negative relationship between trust and risk, while Ashraf *et al.* (2006) found no correlation between propensity for trust and overall level of risk aversion or risk tolerance.

In this study, the relationship between propensity for trust and FRT is examined by the below hypothesis.

H2. Propensity for trust has a positive impact on FRT.

**Happiness in life**

Apergis *et al.* (2019) argue that with the late 1990s, research using happiness databases has increased since it can alter fundamental drivers of financial behaviour, such as risk tolerance and time preferences. They also argue that happiness has an impact on individuals' saving and spending behaviour and affect the attitudes toward risk taking and preferences for certain markets and types of financial investments. In the attempt to study the role of happiness in financial decisions, Kuhnen and Knutson (2011) showed through laboratory experiments that people with negative emotions, as anxiety, tend to be lower risk tolerant and prefer to buy bonds and

avoid buying stocks, suggesting that anxiety caused them to become more risk averse and vice versa. This finding agrees with Isen and Patrick (1983) reporting that people who have high level of happiness in life tend to have low level of risk tolerance suggesting a negative relationship between happiness in life and risk tolerance. On the other hand, Frey and Stutzer (2002) found no clear-cut negative or positive relationship between risk tolerance and happiness. Based on the above studies, the hypothesis is postulated as follows:

H3. Happiness in life has negative impact on FRT.

**Propensity to attribute success to luck**

As stated in Rahman (2019), People tend to attribute success to their own skills and failures to bad luck. Armour and Taylor (2002) view that uncertainty can induce optimism which may encourage investors to become risk taker assuming that they are lucky. Additionally, adding a skill component will positively affect risk taking.

In the more recent work of Albaity and Rahman (2012) the correlation between belief in luck and portfolio risk was investigated to show a significant positive relation indicating that investors willing to attribute success to luck are more willing to endure more financial risk.

Based on the above, the below hypothesis is postulated:

H4. Propensity to attribute success to luck has positive significant impact on FRT.

**Propensity for overconfidence**

Moore and Healy (2008) defined overconfidence as the "overestimation of one's actual ability, performance, level of control, or chance of success". That is an overconfident individual is basically more optimistic about positive outcomes resulting from their actions. Consequences of overconfidence in the context of financial markets could be excessive trading. In a study by Barber and Odean (2001), they claim that overconfident investors tend to overestimate the precision of the information leading them to overestimate their gains which cause them to trade too much. Dorn and Huberman (2005) presented evidence that overconfident people hold riskier portfolios similar to high risk tolerant investors. Pan and Statman (2012) added that less confident investors tend to perceive risk higher than overconfident investors, while the latter may tend to resist advice regarding diversifying their portfolios, indicating that individual propensity for overconfidence might be positively correlated with high FRT. Thus, the following hypothesis is proposed:

H5. Propensity for overconfidence has positive impact on FRT.

## Propensity for social interaction

Propensity for social interaction is argued in Lu (2011), as the degree of individuals' involvement with their social network of family and friends and this degree of Social interaction could be related to willingness to participate in stock market. Hong *et al.* (2005) attempted to explain this by providing evidence that social interaction can motivate individuals to participate in stock market, referring in their study to the concept of a "social investor" whereby an individual may find the stock market more attractive when more of his peers participate. Other studies finding significant relationship between social interaction and investors' decision making include Cook and Oliver (2011) and Renneboog and Spaenjers, (2012). Berman and Litwin (2018) provided evidence that the size of the social network positively correlates with stock ownership, and the propensity to invest in risky stocks is positively associated with the proportion of the network that is comprised of spouse and friends.

Accordingly, the below hypothesis is proposed:

H6. Propensity for social interaction has positive impact on FRT.

## Religiosity

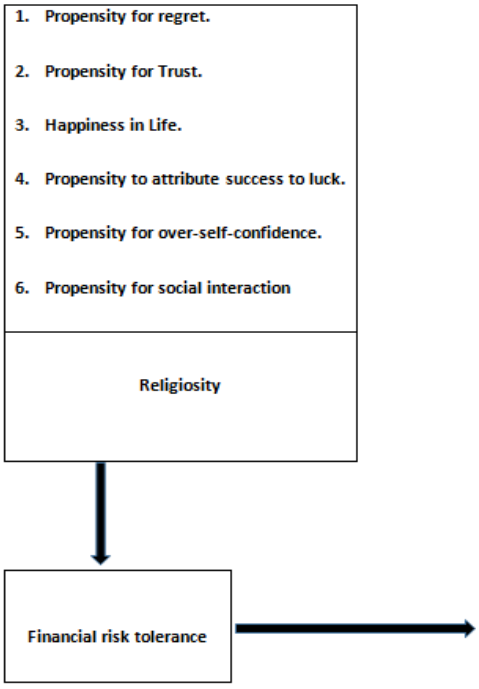
Many studies cited in literature tried to show the link between religion and economics. Religiosity is defined in Riquelme (2001) as personal beliefs, feelings and actions about religion and

its obligations as attending religious activities, reading religious books, doing charities among others. With respect to investment and financial markets, Guiso *et al.* (2008) argues that one's trust highly depends on his religious background and documented a significant positive relationship between religion background, and risk taking behaviour. Hess (2012) and Arrunada (2009) agree to this finding by arguing that religion has significant influence on the financial choices individuals make. Kumar *et al.* (2011) documented evidence that religion background can affect mutual fund managers' investment strategy. While, Shu *et al.* (2012) found that funds located in highly religious areas exhibit higher fund return volatilities and more aggressive trading associated with evidence of higher risk tolerance.

In this study, and following the work of Rahman (2019), religiosity is considered a moderator in the proposed model (figure 1) on the relationship between behavioural factors and FRT, to represent the degree to which religion can strengthen or weaken the relationship between behavioural propensities and financial risk tolerance. Therefore, the below hypothesis is formulated;

H7: The religiosity positively moderates the effect of (a) propensity for regret, (b) propensity for trust, (c) happiness in life, (d) propensity to attribute success to luck, (e) Propensity of overconfidence and (f) Propensity for social interaction on financial risk tolerance.

Figure 1: The Research Model




## RESEARCH METHODOLOGY

### Sample and Data Collection

In this research and following the work of Rahman (2019), the term FRT is used instead of risk averse or risk seeking because FRT represents both. Data were obtained from a random sample of participants in 2022, the required sample size was based on Hair et al.'s (1998) to have 10 times observation as the number of variables to be analysed. Therefore, the required sample size for this study

hypothetically should be (34 x 10 = 340). In total, 356 responses were received which exceeds the minimum. 22 cases were removed because of incomplete answers, which generated 334 usable responses to proceed for analysis. Empirical data were collected using a survey questionnaire. This study employs structural equation modelling to validate and assess proposed research model.

The sample included 43.9 per cent males and 56.1 per cent females. In terms of age, around 8.5 per cent were aged between 23-27 years. Around 4.9 percent were between 28-32, 2.5 percent between 33-37 and 62.6 percent between 38-42, while 21.5 percent were 42 years and above. Regarding education, 82.4 per cent earned a bachelor degree, 10 percent has a master degree and 7.6 percent got a PhD degree.

## Measurement Scales

A multi-item scales were used to measure the suggested concepts of the research. The scales were adopted from different literature. All items used in the research instrument were measured on a 5-point Likert scale where 1 equals Totally disagree and 5 equals Totally agree. A pilot study was conducted and the questionnaire was pre-tested on 20 respondents not included in the final research sample. This was to insure whether the terms used are understandable and to strengthen the quality of the questionnaire. Their suggestions were considered in the final version of the research instrument.

Propensity for regret was measured using four items adapted from Saffrey *et al.* (2008) and Spunt *et al.* (2009). In this study, the Cronbach's α reliability for propensity for regret is 0.661. Propensity for trust was based on Naef and Schupp (2009) and Ben-Ner and Halldorsson (2010) and measured using four items, in which the Cronbach's α reliability is 0.620. Happiness in life were constructed using three items from the studies of Pavot and Diener (1993) and Lyubomirsky and Lepper (1999). In this study, the Cronbach's α reliability for the variable is 0.733. Furthermore, Propensity to attribute success to luck was measured using four items adapted from the studies of Wood and Zaichkowsky (2004) and Maltby *et al.* (2008), the Cronbach's α reliability for PASL is 0.760. Propensity for overconfidence was measured using three items based on Wood and Zaichkowsky (2004). The Cronbach's α reliability for propensity for overconfidence is 0.632. Propensity for social interaction (PSI) was measured utilizing four items adapted from the studies of Moely *et al.* (2002) and Hong *et al.* (2005), the Cronbach's α reliability for PSI is 0.848. Religiosity was measured using nine items adapted from Worthington *et al.* (2003), the Cronbach's α reliability for religiosity is 0.838. Also, the financial risk tolerance was measured using four items adapted from the studies of Wärneryd (1996), Ben-Ner and Halldorsson (2006), Wood and Zaichkowsky (2004) and Weber *et al.* (2013), the Cronbach's α reliability for FRT is 0.686. Finally, the

questionnaire included some demographic questions related to gender, age and education. The following table shows the reliability statistics of the questionnaire used.

**Table (1): Reliability Statistics**

| Items | Cronbach's Alpha | Average Item Correlation |
|---|---|---|
| **Propensity for regret** | **0.661** | **0.628** |
| **Propensity for trust** | **0.620** | **0.613** |
| **Happiness in life** | **0.733** | **0.678** |
| **Propensity to attribute success to luck** | **0.760** | **0.642** |
| **Propensity for over self-confidence** | **0.632** | **0.664** |
| **Propensity for social interaction** | **0.848** | **0.683** |
| **Religiosity** | **0.838** | **0.693** |
| **Financial risk tolerance "FRT"** | **0.686** | **0.653** |

The Cronbach's alpha was used to measure the reliability and the average inter-item correlation was used to measure intrinsic validity. The previous table shows the result of Cronbach's alpha measure and average inter-item correlation. It is clear that the questionnaire is reliable as the Cronbach's alpha and average inter-item correlation coefficient for all items greater than 0.6. (Nunnally & Bernstein, 1994)

## Descriptive Statistics of Constructed Variables

In this section, a description of the main created variables is showed through comprising their mean, minimum, maximum, standard deviation and coefficient of variation as follows:

**Table (2): Descriptive Statistics of Constructed Variables**

| | N | Minimum | Maximum | Mean | SD | CV |
|---|---|---|---|---|---|---|
| **Propensity for regret** | **326** | **1.5** | **5** | **3.6272** | **0.75355** | **20.77%** |
| **Propensity for trust** | **334** | **2** | **5** | **3.3982** | **0.58840** | **17.32%** |
| **Happiness in life** | **334** | **1** | **5** | **3.6677** | **0.89319** | **24.35%** |
| **Propensity to attribute success to luck** | **334** | **1** | **5** | **2.9379** | **0.86758** | **29.53%** |
| **Propensity for over self-confidence** | **334** | **1** | **5** | **3.7186** | **0.72145** | **19.40%** |
| **Propensity for social interaction** | **334** | **1** | **5** | **3.3840** | **0.83996** | **24.82%** |
| **Religiosity** | **334** | **1** | **5** | **3.7923** | **0.68124** | **17.96%** |
| **Financial risk tolerance "FRT"** | **334** | **1** | **5** | **3.5112** | **0.81952** | **23.34%** |

Respondents tend to answer with neutral to the statements related to propensity for trust, propensity to attribute success to luck, and propensity for social interaction, otherwise they tend to answer with agree. Religiosity variable has the highest agreement while propensity to attribute success to luck has the lowest agreement. Finally, the homogeneous variable is propensity to trust with coefficient of variation equals 17.32%.

## Correlation Analysis

The following table (table 3) indicates that with 95% confidence interval, there is a strong positive correlation between FRT and each of propensity for regret, propensity for trust, happiness in life, propensity to attribute success to luck, propensity for over self-confidence, propensity for social interaction and religiosity as the p-value associated with them is less than 0.05. Also, there is a weak positive correlation between propensity for regret and each of propensity for trust, propensity to attribute success to luck and propensity for over self-confidence. It also indicates a weak positive correlation between propensity for trust and

happiness in life. There is a weak positive correlation between happiness in life and each of propensity for over self-confidence and religiosity. Furthermore, there is a weak positive correlation between propensity to attribute success to luck and propensity for over self-confidence.

It can be indicated as well the weak positive correlation between propensity for over self-confidence and each of propensity for social interaction and religiosity. Finally, there is a weak positive correlation between propensity for social interaction and religiosity.

**Table (3): Correlation Coefficients**

| | propensity for regret | propensity for trust | happiness in life | propensity to attribute success to luck | propensity for over self-confidence | propensity for social interaction | religiosity | FRT |
|---|---|---|---|---|---|---|---|---|
| propensity for regret | 1 | 0.172** | 0.122* | 0.260** | .225** | -0.019 | 0.033 | 0.603** |
| propensity for trust | 0.172** | 1 | 0.173** | 0.093 | -0.091 | 0.038 | -0.020 | 0.641** |
| happiness in life | 0.122* | 0.173** | 1 | 0.095 | 0.280** | -0.014 | 0.224** | 0.682** |
| propensity to attribute success to luck | 0.260** | 0.093 | 0.095 | 1 | 0.172** | -0.119* | -0.076 | 0.608** |
| propensity for over self-confidence | 0.225** | -0.091 | 0.280** | 0.172** | 1 | 0.177** | 0.224** | 0.640** |
| propensity for social interaction | -0.019 | 0.038 | -0.014 | -0.119* | 0.177** | 1 | 0.181** | 0.670** |
| religiosity | 0.033 | -0.020 | 0.224** | -0.076 | 0.224** | 0.181** | 1 | 0.620** |
| FRT | .603** | 0.641** | 0.682** | 0.608** | 0.640** | 0.670** | 0.620** | 1 |

(*) means correlation is significant at the 0.05 level where (**) means correlation is significant at the 0.01 level.

## Analysis of the Structural Model

Six linear regression models were built to answer the stated hypotheses, in each model the religiosity variable was included as a moderator variable, and dummy variable with only two values, this to ensure the interaction between this moderator and the independent variable.

Each independent variable on the dependent variable (FRT) was checked in order to avoid Multi-collinearity among independents variables. Also, the normality assumption for the dependent variable, financial risk tolerance was analysed.

**Table (4): Tests of Normality**

| | Kolmogorov-Smirnov | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| FRT | 0.102 | 334 | 0.000 | 0.979 | 334 | 0.000 |

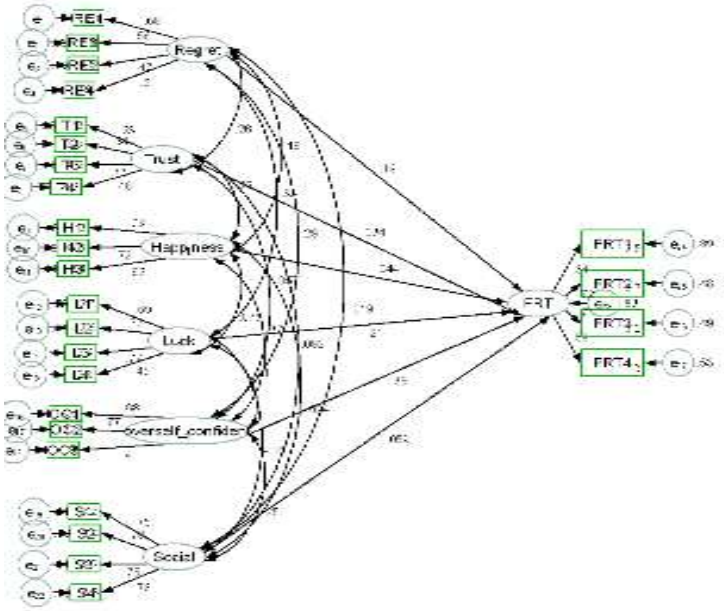
The tests results shown in the above table, revealed that the FRT is not normally distributed because the significance value of this variable is below 0.05. However according to Sekaran (2003), a research study sample size which is above 30 to 50 participants can run parametric tests especially in multivariate research. So the normality assumption can be violated if the study's sample size is large or moderates and results can still reflect precision and accuracy. And, in this study the sample is 334 observations so we can violate the normality assumption. Therefore, the researcher used multiple regression model to test the hypotheses

in the study. It is important to note that religiosity takes 1 for high, and 0 for low.

To test the first six hypotheses, Structural Equation Modelling (STATA 16) was used to test the effect of the independent variables on the FRT, all variables are combined into the model to test the relationship between them, which is demonstrated as a full structural model. The equation form is as follows:

$$FRT = \beta_1 regret + \beta_2 trust + \beta_3 happiness + \beta_4 luck + \beta_5 overself_{conf.} + \beta_6 social\_interaction + \varepsilon$$

**Figure 2: The Structural Model**



As figure 2 shows, the maximum likelihood estimation method was used to conduct the structural analysis of the model. The structural model results displayed satisfactory model fit indices: $\chi^2$/DF= 2.7718; AGFI= 0.996; CFI = 0.990; TLI = 0.989; NFI = 0.962; IFI = 0.978; RMSEA =0.0434. The results are summarized in table 5. The previous shows that all the goodness of fit measures of the model are at acceptable limits, especially NFI, IFI, TLI, and CFI is close to one. Also the value of RMSEA is less than 0.05.

**Table 5: Model fit Summary**

| | **Model** | **Criteria** |
|---|---|---|
| Chi-square /df | 2.7718 | <3 |
| Level of significance | 0.000 | |
| RMESA | 0.0434 | <0.05 |
| AGFI | 0.996 | >0.8 |
| NFI | 0.962 | >0.9 |
| RFI | 0.927 | >0.9 |
| IFI | 0.978 | >0.9 |
| TLI | 0.989 | >0.9 |
| CFI | 0.990 | >0.9 |

**Table 6: Path Coefficients and Significances**

| Standardized | Path Coefficient | Std. Err. | z | P>z |
|---|---|---|---|---|
| Regret | 0.191319 | 0.0678434 | 2.82 | 0.007 |
| Trust | 0.034005 | 0.0149143 | 2.28 | 0.030 |
| Happiness | 0.044263 | 0.0177764 | 2.49 | 0.018 |
| Luck | 0.209778 | 0.0723371 | 2.9 | 0.004 |
| Over self-confident | 0.364867 | 0.1057585 | 3.45 | 0.001 |
| Social | 0.059431 | 0.0220115 | 2.7 | 0.010 |

From table 6, we can conclude that propensity for regret, trust, happiness, luck, over self-confidence and social interaction have significant influence on FRT at a confidence level of 95%.

To test the moderation effect of the religiosity on different paths a multi-group analysis is used. As stated in Simães, and Costa (2019), multi-group analysis in structural equation modelling (SEM) is another form of moderation analysis but using categorical variables or grouping variables (e.g. Male and Female). In this study, there is only one moderator which is religiosity.

To examine the moderating effect of religiosity, first, the sample is split into two groups, namely, high religiosity and low religiosity based on the median score of the religiosity. The first group represents the higher religious individuals (n= 149) while the second group represents lower religious individuals (n= 185).

Next, to test the $\chi 2$ difference at the model level, first, all the parameters are constrained (e.g. the path between the behavioral propensities and FRT), which is referred here as constrained model and then the basic model which is estimated without constraining the parameters. A significant difference is found in $\chi 2$ value between constrained model or model X ($\chi 2 = 3611.783$, df=650) and basic model or model Y ($\chi 2 = 1929.181$, df = 597). However, the difference in $\chi 2$ value ($\Delta \chi 2 = 1682.60$) at the model level is significant ($p < 0.01$). This result indicates that religiosity moderates the relationship between behavioral propensities and FRT.

The following tables shows the results in both groups:

**Table 7: Moderating Effect**

| Standardized | Coef. | Std. Err. | z | P>z |
|---|---|---|---|---|
| **Regret** | | | | |
| Low religiosity | 0.071585 | 0.1828882 | 0.39 | 0.695 |
| High religiosity | 0.290218 | 0.122826 | 2.36 | 0.018 |
| **Trust** | | | | |
| Low religiosity | -0.071097 | 0.1168539 | -0.61 | 0.543 |
| High religiosity | 0.204716 | 0.095217 | 2.15 | 0.040 |
| **Happiness** | | | | |
| Low religiosity | -0.085065 | 0.1193644 | -0.71 | 0.476 |
| High religiosity | 0.079752 | 0.032551878 | 2.45 | 0.0198 |
| **Luck** | | | | |
| Low religiosity | -0.14437 | 0.1083994 | -1.33 | 0.183 |
| High religiosity | 0.225094 | 0.083678 | 2.69 | 0.0107 |

| | | | | |
|---|---|---|---|---|
| **Over self-confident** | | | | |
| Low religiosity | 0.26247 | 0.1246614 | 2.11 | 0.035 |
| High religiosity | 0.458824 | 0.1897293 | 2.42 | 0.016 |
| **Social** | | | | |
| Low religiosity | -0.10157 | 0.0978249 | -1.04 | 0.299 |
| High religiosity | 0.02613 | 0.0120414 | 2.17 | 0.037878 |

Religiosity moderates the relationship between regret and FRT positively. Such that the effect of regret on FRT for those high religiosity is greater than the same effect for low religiosity (effect of low is not significant). Additionally, it moderates the relationship between trust and FRT positively. Such that the effect of trust on FRT for those high religiosity is greater than the same effect for low religiosity (effect of low is not significant). Also, it moderates the relationship between happiness and FRT positively. Such that the effect of happiness on FRT for those high religiosity is greater than the same effect for low religiosity (effect of low is not significant). Religiosity also moderate the relationship between luck and FRT positively. Such that the effect of luck on FRT for those high religiosity is greater than the same effect for low religiosity (effect of low is not significant). Furthermore, it moderates the relationship between over self-confidence and FRT positively. Such that the effect of over self-confidence on FRT for those high religiosity is greater than the same effect for low religiosity. Finally, Religiosity moderates the relationship between social interaction and FRT positively. Such that the effect of social interaction on FRT for those high

religiosity is greater than the same effect for low religiosity (effect of low is not significant).

**Table 8: Results of Hypothesis test**

| **Hypothesis** | **Acceptance** |
|---|---|
| propensity for regret significantly influence FRT | accepted |
| propensity for trust has a positive significant impact on FRT | accepted |
| happiness in life has a positive significant impact on FRT | accepted |
| propensity to attribute success to luck has a significant positive impact on FRT | accepted |
| propensity for over self-confidence has a significant positive impact on FRT | accepted |
| propensity for social interaction has a significant positive impact on FRT | accepted |
| religiosity positively moderates the effect of propensity for regret on FRT | accepted |
| religiosity positively moderates the effect of propensity for trust on FRT | accepted |
| religiosity positively moderates the effect of happiness in life on FRT | accepted |
| religiosity positively moderates the effect of propensity to attribute success to luck on FRT | accepted |
| religiosity positively moderates the effect of propensity for over self-confidence on FRT | accepted |
| religiosity positively moderates the effect of propensity for social interaction on FRT | accepted |

## Discussion and Conclusions

This study agrees with Kannadhasan *et al.* (2016) in that measuring FRT is challenging as it is a multidimensional attitude and is influenced by a number of factors. The findings of this research is in accordance with (Rahman, 2019) indicating that propensity for regret, propensity for trust, happiness in life,

propensity to attribute success to luck and propensity for overconfidence have positive significant influence on FRT. However, our study supported the relationship between social interaction and FRT which is not consistent with his study. The relation between social interaction and FRT is in line with Berman and Litwin (2018) who provided evidence that the size of the social network positively correlates with stock ownership, and the propensity to invest in risky stocks is positively associated with the proportion of the network. This could be related to the difference in culture across different countries which impacts the importance of social interaction among people in general and investors in specific. The findings also support the moderating effect of religiosity on our proposed model. The study is in line with Reb and Connolly (2009) who indicated that people with high propensity for regret tend to have high risk tolerance. This could be explained by the tendency of individuals to regret more in situations where one option is riskier than the other so they chose the less risky option, while in fact, the riskier option turns out to be better one (Ritov, 1996). The results are in concurrence with Carlin *et al.* (2009) and Bohnet & Zeckhauser, (2004) which showed that trust is a significant factor for the investment decision. It appears that when levels of trust increase, individuals tend to view risky investments as acceptable ones. This indicates that trust is critical factor in taking an investment decision, therefore, that trust building is crucial for financial

institutions. The findings regarding propensity to attribute success to luck and its positive impact on FRT is consistent with Hanna *et al.* (2008). Furthermore, the results are matching with Dorn and Huberman (2005) and Hassan *et al.*, (2014) findings, in which individuals who are characterized by overconfidence are high risk tolerant investors. The finding regarding happiness in life and its negative relation with FRT is consistent with Isen and Patrick (1983) which means that individuals who are relatively happy in life have low financial risk tolerance. However, this result is contradicting with (Laakso, 2010) that indicated that FRT is significantly and positively related with happiness in life. The outcomes of this study showed that all hypotheses are supported. The study is consistent as well with Albaity and Rahman (2012) regarding the positive effect of propensity for trust, propensity for regret and happiness in life on FRT.

The originality of this research is that it highlights the important role of behavioural determinants to assess financial risk tolerance. This process is a complex one that goes beyond the use of obvious behavioural factors, and thus opens the room for future research to examine the additional factors capable of explaining Financial risk tolerance. This should assist investment practitioners to develop an objective assessment to measure risk tolerance of investors that is built upon art, intuition and experiences. This study contributes to the knowledge in the field of financial management by providing an analysis of financial

risk-tolerance using a sample which reflecting investment from a large population database; and contributes to the discussion regarding the efficacy of using behavioural factors in determining financial risk tolerance of individual investors.

## The implications of the study

Our results can be used by professionals, managers, and individuals as a concrete foundation for understanding various aspects of propensity towards financial risk tolerance. For example, managers should take into consideration the factors that impact the financial risk tolerance when planning to attract investors as investors could behave differently according to different factors. Managers therefore will be able to suggest the appropriate investment alternatives to their customers. In summary, the study results may help financial advisors and employees dealing with clients to plan for relevant investment portfolios. This may affect return on investments positively and attract more customers in future.

## Limitations and Directions for Future Research

Although the results of the current study are significant, they must be viewed in light of the following limitations, the study did not analyze the influence of demographic and other socio-economic variables such as gender, age and their influence on financial risk tolerance. The study also did not consider the psychological factors such as

emotional intelligence and impulsiveness which could be could analyzed in future researches.

Future research could also undertake other variables, such as the perceived risk and the level of financial knowledge and financial satisfaction, and their effect on financial risk tolerance because knowledgeable individuals have a greater FRT as indicated by Grable & and Joo (2004). It is important also to consider comparative studies between different countries to identify similarities and differences.

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