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FINANCIAL RISK TOLERANCE OF EMPLOYEES IN FINANCIAL AND NON-FINANCIAL INSTITUTIONS IN SRI LANKA

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ABSTRACT

The purpose of this study is to examine whether there is a significant difference in the level of Financial Risk Tolerance of employees in Financial Institutions with that of employees in Non-Financial Institutions in Sri Lanka. A sample of internet risk assessment survey respondents was considered. A composite index using the values for answers was developed to measure Financial Risk Tolerance of respondents with the help of a Likert-scale. The study employed descriptive statistics and one way Analysis of Variance test (ANOVA) to compare the levels of risk tolerance between the respondents of the two sectors, i.e. Financial Sector employees and Non-Financial Sector employees.

Key Words: Financial Risk Tolerance; Composite Index; Risk Assessment

1. INTRODUCTION

Financial Risk tolerance can be defined as “the degree of variability in investment returns that an investor is willing to withstand (Investopedia). Financial Risk Tolerance plays an important role in the financial decision making process (Grable et al, 2009). Understanding financial risk tolerance behavior within the context of developing countries is vital for policy making and implementation towards the development of financial markets (Heenkenda, 2014).

When employees are concerned, they fall into either of the two categories, Financial or Non-Financial. Employees in Financial Institutions are presumed to be better in financial literacy, analyzing investment opportunities and in understanding risk return relationship than that of employees in Non-Financial Institutions as they deal with matters pertaining to financial aspects on their day to day routine. However, as far as Sri Lankan context is concerned, institutional investors’ role in Colombo Stock Exchange is significant than that of retail investors. Factors which affect the reduced contribution of retail investors in the stock market participation in Sri Lanka need to be studied and one such factor may be the level of Financial Risk Tolerance. Studying whether risk tolerance levels are different for each employee type is important to implement actions that attract more risk tolerant sector to capital market participation. The rationale behind this is that a country needs more risk tolerant people to activate the economy towards a higher economic growth (Heenkenda, 2014).

2. OBJECTIVE OF THE STUDY

The main objective of this study is to determine whether there is a significant difference in the level of Financial Risk Tolerance between the employees in financial and Non-Financial institutions in Sri Lanka.

3. LITERATURE REVIEW

Financial risk tolerance is defined as the amount of risk believed and accepted and attitude towards the risk (Hamurcu and Yalvac, 2016). According to Kannadhasan et al (2016) Financial risk tolerance (FRT) refers to the retail investors’ willingness to accept the negative changes in the value of investment or an outcome that is adversely different from the expected one. Another definition for

Financial Risk Tolerance is “maximum amount of uncertainty condition that someone is willing to adopt when making a financial decision, reaches into almost every part of economic and social life” (Grable, 2000). Semenov & Kuznetcov (2015, as cited in Grable et al, 2016) define financial risk tolerance as “a person’s willingness to engage in a financial behavior in which the outcomes of the decision are unknown and potentially costly, is a topic that has been widely studied in the context of investor behavior.” However, Grable (2008) defines financial risk tolerance as “the maximum amount of uncertainty someone is willing to accept when making a financial decision”.

Literature on financial risk tolerance of employees in financial Vs Non-financial institutions could be hardly found in the Sri Lankan context. However, literature on financial risk tolerance of employees in public sector and private sector are abundantly found. As per Margaretha et al (2012), public sector employees are more risk averse than private sector employees. Roszkowski & Grable (2009) claims that there is some basis in reality to the claim lower risk tolerance among public servants and is not merely a stereotype. Risk tolerance of different settlement types in Sri Lanka had been analyzed in few studies. According to Heenkenda (2014), significant percentage of respondents in all three sectors namely rural, urban and estate falls into the above average (high) risk tolerance category in Sri Lanka but significant differences can be identified between settlement types. For instance, the respondents in the urban sector show a higher risk tolerance compared to the respondents in the rural and the estate sectors. The findings of Gilliam et al (2010) states that even though asset ownership and the wife’s cohort affected the couple’s assertiveness, assertiveness itself did not notably impact their combined financial or portfolio risk tolerance.

But many prior work could be found on factors affecting financial risk tolerance of individuals. Recent research indicates (Heenkenda & Chandrakumara, 2015) that income and financial literacy positively contribute to risk tolerant behavior and in contrast, distance shows a negative contribution with financial risk tolerance. A study conducted by Hamurcu & Yalvac (2016) has found that financial risk tolerance and emotional exhaustion are positively related. Demographic, socioeconomic, environmental and psychosocial variables (Ex: income, net worth, financial knowledge, home ownership, education, marital status, family situation, social status, age, gender, personality traits, birth order, ethnicity, attitudes, beliefs, role modeling, self-esteem) affect financial risk tolerance.

As discussed by Grable & Joo (2004) net worth, marital status, education, household income financial knowledge and self-esteem are significant in explaining financial risk tolerance. As per Kannadhasan, Aramvalathan, & Mitra (2016) Self-esteem is positively related to Financial Risk Tolerance and is a significant predictor of Financial Risk Tolerance. Individuals who have a higher sensation seeking exhibit a propensity to make risky financial investments and Type A individuals (Type A personality generally refers to the individuals who are competitive, with an underlying tendency for hostility and aggressiveness, a sense of time urgency and impatience) would be more willing to take greater financial risks to achieve financial success (Grable (2000, as cited in Kannadhasan et al, 2016)). Sulaiman (2012) shows that higher levels of formal education increases one’s ability to evaluate risk and therefore gives a higher financial risk tolerance and a significant low negative correlation between the number of dependants and financial risk tolerance.

According to the research findings of Kubilay & Bayrakdaroglu (2016) it was determined that there is a relationship between personality traits and psychological biases of investors and the personality traits of investors affect their financial risk tolerances. Grable (2000) concludes that males are more risk tolerant than females, older respondents are more risk tolerant than younger respondents, married respondents are more risk tolerant than single respondents, professionals are more risk tolerant than those with lower incomes, respondents with higher attained education are more risk tolerant than others, respondents with higher levels of financial knowledge are more risk tolerant than respondents with less knowledge and those with greater economic expectations are more risk tolerant than respondents with lower expectations.

Bajtelsmit and Bernasek (1996, as cited in Yao & Hanna, 2005) presented evidence that women tend to have lower risk tolerance, and therefore lower return portfolios than men in the long run. Males were more risk tolerant than females regardless of their marital status and unmarried females had lower risk tolerance, except for substantial risk tolerance, where they had the same risk tolerance as married females (Yao & Hanna, 2005). However, both portfolio risk levels and risk tolerance is determined by the education of the wife and not the husband and a divergence in risk levels occurred when the husband owned a greater degree of assets than the wife (Grable, Gilliam & Hampton, 2011).

In reality the risk tolerances of women and men are closer than advisors believe when relying on mirrors (i.e., perception) of the world. In other words, advisors do tend to exaggerate the differences, which means that they are stereotyping.” (Grable and Roszkowski, 2005). Yao & Hanna (2003) states that risk tolerance is influenced by recent events. They further concludes risk tolerance levels were generally lower in 1989 and 1992 than in 1983, and then increased through 1998, dropping slightly by 2001.

Hasee & Weber (1999, as cited in Grable et al, 2016) states that Chinese were much more likely to seek out risk compared to Americans. A study conducted by Ahmad et al (2011) in Pakistan shows that education and gender are the most important factors that have a strong impact on financial risk tolerance when compared to other factors such as age, marital status and monthly income. The findings of Grable et al (2016) reported that cross cultural variation in risk-tolerance attitudes between Brazilians and Americans

exists. A study had been conducted by Muzindutsi & Ramudzuli (2015) to identify the relationship between financial knowledge and subjective financial risk tolerance among students at a South African University concluded that expenditure, religion and type of education are important determinants of financial risk tolerance and non-significant relationship between financial risk tolerance and gender. A research conducted by Cupples, Rasure & Grable (2013) in United States has determined that the direct association between being female and risk tolerant was negative and education was found out to be positively associated with risk tolerance. Further they have identified that the total effect of gender on risk could be significantly reduced when education was used as a mediator between gender and risk tolerance. According to Yao, Hanna and Gutter (2004) Blacks and Hispanics are less likely to be willing to take some financial risk but more likely to be willing to take substantial financial risk than Whites, after controlling for the effects of other variables.

4. METHODOLOGY

4.1. Data and Sample

Data for this study were collected from employees working in financial and non-Financial Institutions in Sri Lanka through a web based questionnaire survey. Accordingly, information were obtained from 124 respondents representing both sectors. Convenient sampling was employed in selecting respondents for each sector of the sample.

4.2. Variables

4.2.1. Dependent variable

The research instrument comprises of 4 questions to develop the Risk Tolerance Score (RTS). The responses were combined into a composite index of risk tolerance. In order to place respondents in appropriate risk tolerance categories, answers were given a weight according to the riskiness of the response. Higher points indicated a higher level of risk tolerance whereas lower points indicated a lower level of risk tolerance. The total scores were calculated for each respondent based on the weights by adding the individual items score and the scores served as a measure of risk tolerance (Heenkenda, 2014).

4.2.2. Independent variable

The independent variables included whether the respondent is an employee of a financial institution or a non-financial institution and some demographic characteristics as well.

Incorporating demographic factors into tests as possible confounding factors can therefore help clarify the relationship between self-classified risk tolerance and investing behavior (Grable et al, 2009). Hence some demographic factors, for instance, gender, age, marital status were included in the questionnaire to capture the characteristics of the individuals who actually participated in the interview.

4.3. Questionnaire Survey

Trone, Allbright, & Taylor (1996, as cited in Grable & Joo, 2004) indicate that measuring a person's financial risk tolerance is difficult because risk tolerance, as a multidimensional attitude, is an elusive concept that appears to be influenced by a number of predisposing factors. There are at least four methods of measuring risk tolerance: asking about investment choices, asking a combination of investment and subjective questions, assessing actual behavior, and asking hypothetical questions with carefully specified scenarios (Hanna, Gutter, & Fan, 2001). Hanna, Gutter & Fan (2001, as cited in Yao, Gutter and Hanna, 2004) shows that assessing risky behavior and using surveys to ask questions related to risk tolerance are two major methods to measure risk tolerance. Grable (2000, as cited in Yao, Gutter and Hanna, 2004) presents a combination of investment choices and subjective perceptions. The most widely used risk tolerance self-classification item can be found in the Federal Reserve's Survey of Consumer Finances (Grable et al, 2009).

Existing empirical studies can be divided into two groups: those that use stated preferences or motivations (e.g., by asking respondents how important job security or helping other people is to them) and those that infer preferences and motivations from stated behavior (e.g., self-reported donations to charity, self-reported purchase of insurance, stated willingness to pay for a hypothetical lottery, et cetera) (Margaretha et al, 2012:p.4). Roszkowski (2007, as cited in Margaretha et al, 2012) suggests that stated preferences data may be vulnerable to self-stereotyping, self-serving biases, lack of attention by respondents, and strategic motives. According to Margaretha (2012) revealed preference data have some advantage over stated preference data as it emphasis on what people actually do, not on what they say they do (or have done), or what they claim is important to them. "Over the 75 years of study in the United States, the assessment of financial risk tolerance has tended to revolve around five methodologies: choice dilemmas, utility theory, objective measures, heuristic judgments, and subjective assessment" (Grable & Lytton, 1999).

Furthermore, there is only limited research showing a link between self-estimated financial risk tolerance and actual risk taking (Grable et al, 2009). Grable et al (2009) conducted a study to determine how accurately individuals judge their own level of financial

risk tolerance and whether self-assessed financial risk tolerance is associated with investment risk taking behaviors. They conclude that individuals who saw themselves as real risk avoiders or cautious when making investments tended to hold more cash than riskier assets like equities conversely to those who viewed themselves as gamblers or being willing to take risks after completing adequate research had larger holdings in equities. A variety of single item self-classification questions have been developed, but the validity of such global evaluations remains an issue yet to be adequately addressed in the literature (Grable et al, 2009). A respondent's risk tolerance was determined by combining responses into a risk-tolerance index. Answers to each question were given a weight according to the riskiness of the response. Higher weightings indicated a riskier choice, while lower weighting indicated a less risky choice (Grable, 2000).

In this study, both the revealed preference data and stated preference data are deployed. The SOFRT (Survey of Financial Risk Tolerance) questionnaire was followed in developing the questions to measure the level of financial risk tolerance of each category. Google forms platform was used to develop the web based questionnaire and requested respondents to fill in via E-mail. Questionnaire was filled in by employees of Central Bank, Banks, insurance companies, Finance and leasing companies representing the financial sector and teachers, doctors, employees in district secretarial office, telecommunication companies and high rank officials in Sri Lanka Navy, Army and Air Force filled in the questionnaire representing Non-Financial Institutions.

4.4. Method of Analysis

Regression Analysis was carried out to investigate whether there is a significant difference in Financial Risk Tolerance of employees in Financial Institutions and Non-Financial Institutions in Sri Lanka. Descriptive statistics and one-way analysis of variance (ANOVA) test were deployed to compare the risk tolerance between the two employee types. The results were examined at 5 per cent significance level.

5. RESULTS

The results of the estimated risk tolerance index and the variables that influence risk taking behavior are presented in this section. 124 respondents had completed the questionnaire; 55 representing financial sector (44%) and 69 representing non-financial sector (56%). Participants included 82 men (66%) and 42 women (34%). Amongst them 51 were married individuals (41%), 72 were single (58%) and 1 respondent was in the category of Divorced/Separated/Widowed (1%). 72 individuals were employed in the private sector (58%) and 52 individuals were employed in the government sector (42%). 99 respondents were in the age group of '26-50 years of age' (80%), 22 respondents were in the age group of '25 years of age or below' (18%) and only 3 respondents were in the age category of 'above 50 years' (2%). 2% of the respondents (2) save above 50% of their monthly income, 11% of the respondents (14) save between 26% to 50%, 28% respondents (35) save between 10% to 25% of their monthly income, majority of the respondents (55 and 44% as a percentage) save below 10% and 15% of the respondents who participated in this survey make no savings (18). The summary of responses are presented in Table 1.

Table 1: Summary of Responses (n=124)

Variable	Classification	Frequency	Percentage
Gender	Male	82	66%
	Female	42	34%
Age	25 years or Below	22	18%
	26-50 years	99	80%
	Above 50 years	03	2%
Marital Status	Single	72	58%
	Married	51	41%
	Divorced/Separated/Widowed	1	1%
Sector	Private Sector	72	58%
	Government Sector	52	42%
Institution	Financial Institution	55	44%
	Non-Financial Institution	69	56%
Savings	No Savings	18	15%
	Below 10%	55	44%
	Between 10% - 25%	35	28%
	Between 26% - 50%	14	11%
	Above 50%	2	2%

5.1. Internal consistency

Reliability analysis is used to measure the degree of consistency among questions which are used to measure a factor or variable. When the value of Cronbach alpha is closer to 1 then questions are more vibrant (Saleem, Aslam & Latif, 2015). Cronbach’s alpha was used to measure the internal consistency of the risk tolerance index score. The inter-rater reliability based on Cronbach’s alpha was 0.3659 and hence provides evidence of low internal consistency of questions developed to measure the level of risk tolerance between employee types.

5.2. Reliability

The reliability of the measure was calculated to be 0.388293 using the Spearman-Brown formula which states that there is a weaker association between the ranks.

5.3. Descriptive statistics

The descriptive statistics of each sector (Financial and Non-Financial) are presented in table 2. Respondents Total Risk Tolerance index score change between 41 and 74 with a mean value of 52.54839 and Standard Deviation of 7.953477. The size of the coefficient of variance indicates that there is no significant variation within each employee type in terms of risk tolerance index scores.

Table 2: Descriptive Statistics of the risk tolerance index

Descriptive Statistics	Employee Type		Total Risk Tolerance Index
	Non-Financial	Financial	
Mean	50.53623	55.07273	52.54839
Median	49	54	51
Mode	44	54	44
Maximum	69	74	74
Minimum	41	43	41
Standard Deviation	7.535367	7.805161	7.953477
Coefficient of Variance	0.149108	0.141725	0.151355
Skewness	0.70216	0.362241	0.509868
Kurtosis	2.460788	2.401198	2.369694
JarqueBera	6.505727	2.024549	7.425258
Probability	0.038663	0.363391	0.024413
Sum	3487	3029	6516
Sum Sq. Dev.	3861.159	3289.709	7780.71
Observations	69	55	124

5.4. ANOVA Test

Differences in Financial Risk Tolerance between employee types were identified using One-way Analysis of Variance (ANOVA) of risk tolerance index (d.f. 1, F = 5301.011955, p < 0.00).

H₀: There is no difference in risk tolerance levels between employee types.

Table 3: ANOVA Test (α = 0.05)

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	168324.6815	1	168324.6815	5301.011955	0.00	3.879538
Within Groups	7811.314516	246	31.75331104			
Total	176135.996	247				

Based on the p value it can be concluded that the risk tolerance levels of employees in Financial Institutions are significantly different from that of Non-Financial Institutions. The employees of Financial Institutions show a higher degree of risk tolerance than the employees of Non-Financial Institutions.

6. CONCLUSION

This research attempted to examine whether there is a significant difference in levels of risk tolerance between employees in Financial Institutions and that of Non-Financial Institutions in Sri Lanka. Accordingly it can be concluded that the risk tolerance levels of employees in Financial Institutions are significantly different from that of Non-Financial Institutions. The employees of Financial Institutions show a higher degree of risk tolerance than the employees of Non-Financial Institutions. The identified difference in levels of Risk Tolerance will make sense for policy makers and Financial Institutions to attract Financial Sector employees towards risky investments and employees in Non-Financial Institutions towards less risky investments.

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