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The Impact of Demographic Factors on Risk Tolerance: A Case Study of Saudi Arabia

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ABSTRACT

The primary objective of this empirical research was to examine potential variations in financial risk tolerance among residents in Saudi Arabia, taking into account their demographic characteristics such as gender, age, education, job experience, monthly income, and geography. This research examines any possible relationship between demographic attributes and investors' risk tolerance in their investing decision-making process. Very few studies have been conducted in Saudi Arabia about the demographic features of investors and their perception of risk about investing choices. Thus, this research aims to examine the primary determinants that impact different classifications of investors. This research has gathered data from 936 participants and empirically measured the various aspects of financial risk using the financial risk-tolerance scale (FRT). The properly crafted online surveys were disseminated among inhabitants using Google Forms. This work used a quantitative methodology to analyze a multinomial logistic regression model. The empirical results of the research revealed a strong favourable impact of certain demographics on financial risk tolerance. More precisely, the findings indicated that moderate risk scores substantially influenced marital status, monthly income, and place of residence. Above-average risk scores highly influence marital status, monthly income, and employment status. Furthermore, high-risk scores have a statistically significant effect on marital status and employment experience. However, the FRT score is highly associated with gender, age, academic degree, employment experience, and place of residence. Moreover, the parametric analysis revealed variations in financial risk-tolerance attitudes among inhabitants based on their geographical location. The research findings will be crucial and beneficial to policymakers and investors, contributing to the financial market growth

process in Saudi Arabia.

Keywords: financial risk, multinomial logistic regression, demographic factors, investment decisions, association, risk tolerance, Riyadh

INTRODUCTION

Risk tolerance is a crucial factor that influences an individual's decision to invest and is defined as the willingness to accept financial risk to achieve potential returns. Determining each household's optimal portfolio and developing government policies addressing financial risks is important. Previous research has examined risk tolerance from an individual perspective and its association with expected returns. Scholars such as (Grable, 2000) (Grable & Lytton, 2003), and (Hallahan, Terrence A. et al., 2004) define risk tolerance as the ability to withstand fluctuations in returns and volatility. Studies have also explored the impact of demographic factors, such as education, income, employment status, age, and gender, on financial risk tolerance (Grable, 1997); (Graham et al., 2002); (Joo & Grable, 2004); (Laroche et al., 2001); (Pålsson, 1996); (Sweet, 2013).

Recently, Saudi Arabia has significantly changed its financial landscape and investment opportunities. The country has implemented various measures to diversify its economy, reduce its reliance on oil revenue, and attract foreign investors. Consequently, many individuals in Saudi Arabia invest in expanding their wealth and ensuring financial stability. Financial advisors, policymakers, and market regulators must understand investors' risk tolerance to develop appropriate investment products and strategies. Additionally, understanding the factors influencing investors' risk tolerance can provide insights into their decision-making processes and assist in creating customized financial education programs. The present study aims:

1. To study the risk tolerance of the investors of Riyadh.
2. To study the relationship between demographic variables (gender, age, income, occupation, and education) and the investors' risk tolerance.
3. The study results will be essential and helpful to policymakers and investors, contributing to the development of Saudi Arabia's financial market.
4. This study would also encourage investment product designers to create products catering to people making investments with varying levels of FRT and demographic profiles.

The objectives would help explore the risk tolerance level of the investors of Riyadh. It can be a significant difference among investors with risk tolerance. Results might reveal whether there are demographical differences among the investors regarding risk tolerance.

Despite numerous studies on risk tolerance and demographic factors across countries, limited research is available on this topic, particularly in Saudi Arabia. Therefore, this study investigates the extent of risk tolerance with demographic factors among Saudi Arabian investors. The financial market in Saudi Arabia is unique and comprises diverse investor populations. Individuals from various age groups, income levels, occupations, and educational backgrounds participated in investment activities. Cultural and religious beliefs may also affect risk perceptions and investment choices.

Consequently, examining the correlation between demographic factors and FRT among investors in Saudi Arabia can provide valuable insights into the factors that shape investment behaviour in this market. This study assessed the level of risk tolerance displayed by Saudi Arabian investors and examined potential demographic differences. These findings will be helpful to policymakers, market regulators, and financial advisors. Policymakers and regulators can utilize these results to develop tailored interventions and policies that enhance the efficiency and stability of Saudi Arabia's financial markets. On the other hand, financial advisors can leverage this information better to understand clients' specific needs and risk profiles, leading to improved investment outcomes and higher satisfaction rates for investors.

The remaining sections of this study will proceed as follows: the "Literature Review" section will review relevant empirical studies. The "Data Description" section will provide details on the sampling procedure, data collection technique, and variables used in the analysis. The "Methodology" section will outline the analytical framework and estimation strategy employed. The empirical findings are presented in the "Empirical Results" section. Finally, the study is summarized in the "Conclusion and Implications" section.

LITERATURE REVIEW

There is little empirical research on the financial risk tolerance of individual investors, specifically on their demographic, socioeconomic, and attitudinal characteristics. Several relevant scholarly investigations on different factors influencing financial risk tolerance MacCrimmon, and Wehrung (1986) presented a comprehensive literature and research analysis on risk tolerance, focusing on studies investigating the connections between demographic, socioeconomic, and attitudinal variables and financial risk tolerance. Scholars widely agree that women generally exhibit lower risk tolerance levels than males. The prevailing belief among practitioners is that marital status substantially impacts risk and return choices and an individual's contentment with money (Lazzarone, 1996). According to Roszkowski, M.j; Snelbecker, G.E; and Leimberg, S.R (1993), other things being equal, different occupations of individual investors can be used to differentiate between their levels of financial risk tolerance.

The existing literature guides us that men tend to be more inclined to taking FR decisions than women (e.g., Bajtelsmit et al., 1999; Halek and Eisenhauer, 2001; Ardehali et al., 2005; Nairn, 2005; Yao and Hanna, 2005; Grable and Roszkowski, 2007; Ganegoda and Evans, 2014). Also, previous articles have concluded that men are more specifically to invest in risky financial assets when controlling for other indicators than women (e.g., Yuh and DeVaney, 1996; Embry and Fox, 1997; Sunden and Surrett, 1998; Zagorsky, 2005). Gilliam et al. (2010) derived that gender differences in RT are consistent across generations while keeping all other household characteristics the same.

(Grable & Rabbani, 2023), To assess the impact of financial literacy on the relationship between an investor's financial risk tolerance and key demographic factors, commonly recognized as significant predictors of an investor's propensity to take financial risks. (Lathief et al., 2024) the significance of considering an individual's investment goals and level of conscientiousness while making investment choices was emphasized. By carefully analysing risk capacity, tolerance, propensity, and behavioural factors related to risk perception, investors may formulate tailored strategies that optimize the likelihood of financial success while efficiently controlling and reducing risk. (Lippi & Rossi, 2020a) risk tolerance includes psychological factors, financial opportunities, and macroeconomic conditions. Their study, which observed Italian investors over 15 years, emphasized the impact of macroeconomic factors on decision-making. This study emphasizes the significance of risk-averse and risk-seeking behaviours in shaping decisions and their social, psychological, ethical, and financial implications. According to (Wahl & Kirchler, 2020) investment advisors must evaluate their clients' financial risk tolerance to offer tailored and appropriate investment recommendations. (Shenjere & Ferreira-Schenk, 2024) Found that South African investors, considering their demographics and risk tolerance, have largely achieved significant life goals. This study revealed a notable disparity between life satisfaction and risk tolerance. (Mokoena et al., 2021b) Stokvel investors exhibit the highest financial risk tolerance compared to those opting for government bonds. The study's demographic results indicate that male, younger, and high-income investors have higher risk tolerance, whereas female, older, and lower-income investors show significantly lower risk tolerance. (Murhadi et al., 2023) indicated that higher-income individuals do not think taking on greater risks will lead to higher returns than lower-income individuals. (Lippi & Rossi, 2020b) revealed that the level of financial literacy among investors plays a minor role in the outcomes of this study.

DEMOGRAPHIC VARIABLES

A recommended approach is empirically examining unknown aspects that may influence how people formulate risk judgments when statistically analyzing risk-tolerance viewpoints. Grable (2008) analyzed the impact of different socioeconomic and demographic factors on the development of RT

evaluations. The variables examined in this research are gender, age, educational attainment, work experience, income level, saving status, geographic location, and employment status. An increasing number of studies provide evidence that gender, age, income, education, geography, and other factors are strongly linked to the ownership of high-risk financial assets. (Sung and Hanna, 1996; O'Neill et al., 2000; Chaulk et al., 2003; Grable and Lytton 2003; Wang and Hanna, 2007; Shah et al., 2017; 2018). Analysis in econometrics indicates that the indicator variables, namely gender, sex, and location, significantly impact the dependent variable and should be included as regressors in the econometric study. (Gujarati, 2003) for example, young guys with a substantial salary and advanced levels of education are regarded to own far more risky assets (Gilliam et al., 2010).

Over the years, a positive pattern between the income of individual investors and their financial risk tolerance has been observed (Cicchetti and Dubin, 1994; Shaw, 1996). A person's level of formal education has been found to influence risk tolerance (Grable and Lytton, 1998). Researchers such as Grable and Joo (1997); and Sung and Hanna (1996) have suggested that a person's knowledge of personal finance and economic expectations may shape risk preferences.

According to Baruah (2018), numerous factors influence an individual's investment decisions, including his ability to take risks and demographic characteristics. People of various genders, ages, education, occupations, income levels, and knowledge levels have varying attitudes toward making decisions; some are risk-takers, while many are risk-averse.

Kabra et al. (2010) investigated the variables influencing behaviour, investment risk tolerance, and decision-making. Horvath et al. (1993) proposed that one's biological, demographic, and socioeconomic features influence one's level of risk tolerance, along with their psychological structure. The study by Roszkowski et al. (1993) reveals that twelve demographics were used to discern between investment risk tolerance levels and their effect on investment decisions. He said that different professions or occupations impact the individual's investment decisions. Similarly, Riley and Chow (1992), Grable and Lytton (1999), and Schooley and Worden (1996) found that investment decisions and income uniformly supported a positive relationship.

Guiso et al. (1999b), Jianakoplos et al. (1998), Hariharan et al. (2000), Hartog et al. (2002) concluded that men are more risk-tolerant than women. Ronay & Kim (2006) claims that men and women have the same risk behaviour, but male investors are viewed as risk seekers when examined in groups, and female investors are viewed as risk averse. The Fellner & Maciejovsk (2007) research argues that male and female behaviour at the individual level is cautious and risk-averse at the personal level instead of male investors. Dwyer et al. (2002) said that women take less risk in mutual fund investing than men, based on data from over 2000 mutual fund investors.

Age also influences an individual investor's investment performance or decision-making process. Chavali's (2016) findings show that the respondent's age and occupation impact risk tolerance and perception of risk. Researchers have discovered that risk aversion decreases with age when all other variables are constant (Wang, H. & S. Hanna, 1997). Furthermore, several types of research found no association between an investor's age and their financial risk tolerance (Al-Ajmi, 2008: 21) (Anbar and Eker, 2010; Gumede, 2009).

Much research on risk tolerance and education have also been conducted (Cicchetti & Dubin, 1994; Schooley & Worden, 1996; Shaw, 1996; Zhong & Xiao, 1995). Education is said to improve a person's capacity to evaluate the risks involved in the investment process and equip them with a higher financial risk tolerance (Grable and Lytton, 1998; Venter, 2006; Grable and Lytton, 1999; Qui, 2002; Christiansen et al., 2006; and Al-Ajmi,2008). Education and risk tolerance are positively related (Graham et al., 2009). In contrast, some researchers have shown no significant relationship between education and risk tolerance (Strydom et al., 2009). Occupation is an essential demographic in the investment process since it influences the preferred level of risk. (Reddy, 2017) People with higher occupational status are more risk-takers than those with lower occupational levels (Roszkowski et al., 1993).

An investor's income level also influences their investment habit. Richer people take more risks. Wealthier people favour higher risk because they can afford losses. However, several researchers found no link between income and financial risk tolerance (Strydom et al., 2009). Reddy (2017) reveals that age, education, and personal financial knowledge are significantly associated with

financial risk tolerance. Individuals' risk tolerance is influenced by additional factors such as superior knowledge of personal finance issues (Cutler, 1995; Grable & Joo, 1997; Snelbecker, Roszkowski & Cutler, 1990) and favourable economic expectations (DeVaney & Su, 1997; Grable & Lytton, 1998; Sung & Hanna, 1996).

The following hypotheses are proposed based on the research objectives:
H_1: Significant differences will not be found among the investors of Riyadh to risk tolerance.

H_2: A significant association will not be found between gender and risk tolerance.

H_3: A significant connection between age and risk tolerance will not be found.

H_4: A significant connection between education and risk tolerance will not be found.

H_5: A significant association between occupation and risk tolerance will not be found.

H_6: A significant relationship between income and risk tolerance will not be found.

The frequency column of Appendix A reports that, out of 936 observations, 392 were from the 25-30 age group, and 240 were from the 31-45 age group. The largest proportion of the population is unmarried, with 57.1%, a significant number 36.6% are married, which may correlate with the age distribution. The majority earn between SAR 5001 and 10,000, representing 49.8% of the population. A smaller percentage, 17.7%, earns more than SAR 30,000, indicating potential economic challenges for this group. The predominant qualifications are graduates, with 41.5% of the population holding this level of education.

Notable percentages, 33.0%, have completed undergraduates, which may impact employment opportunities. Most are employed full-time, with 54.6% of the population in this category. A good percentage of students is also 33.0%, which could reflect the region's overall economic health. Most respondents have 1-5 years of work experience, making up 54.3% of the population. A smaller group, 07.8%, have more than 20 years of experience, indicating a portion of the population is relatively new to the workforce. Most of the population resides in large cities, accounting for 67.5%. A smaller percentage, 03.1%, lives in rural areas, which might affect access to certain services or opportunities. The demographic data suggests that the population is predominantly young, urban, married, and moderate-income. The last column of Appendix A, presents the cumulative percentage (cp) of observations, which quantifies the proportion of the total frequency within each category. A key advantage of this statistic as a frequency distribution approach is its ability to comprehensively compare many sets of information. The frequency process findings indicate that the sample composition is most concentrated among privately employed male undergraduate students with the lowest income and saving levels and the least experience residing in a big metropolitan area.

SAMPLING PROCEDURE

A self-constructed/adopted structured questionnaire will be applied to study the risk tolerance of 936 investors of KSA. Appropriate parametric/ non-parametric statistical tools will be used to analyze the obtained data. This empirical study used the cross-sectional dataset, which was collected from all major regions of Saudi Arabia, i.e., Makka region, Eastern Province, Riyadh region, Qassim region, Medina region, Al-Baha region, Najran region, Asir region, Northern border area, Jizan region and Tabuk region covering the period started from 01 April 2023 to 31 December 2023. The selected randomized sample included graduates, undergraduates and postgraduates from well-established private and public sector universities in the province of KSA (n = 936). All the survey participants were informed through a cover letter and a survey participation acceptance. Of the population, 936 respondents were randomly picked from those who appropriately answered FRT questions online.

DATA COLLECTION INSTRUMENT

An empirical study used a meticulously designed questionnaire derived from a risk scale first formulated by Grable and Lytton (1999), Called the Grable and Lytton risk-tolerance scale (G/L-RTS). The data collected included socioeconomic, demographic, and risk tolerance variables specifically designed to elicit the attitude of respondents towards the risk assessment. The survey had 20 risk-

tolerance items, paralleling those proposed in the 20-item GL-RTS. (Grable & Lytton, 1999). To record the level of f (FRT), five different groups were scaled as suggested by (Nobre et al., 2016); each responder must be assigned to a certain group depending on their attitude towards the danger. Individuals will be classified as lower-risk tolerant if their risk tolerance score falls between 0 and 17. They will be considered below-average risk-tolerant if their score falls between 18 and 21. They will be considered moderate-risk tolerant if their score falls between 22 and 27. They will be considered above-average risk-tolerant if their score falls between 28 and 31. Lastly, a student will demonstrate a high tolerance for risk by making investment decisions if their score falls between 32 and 46. Nevertheless, the basic questions in the survey were documented as demographic variables with distinct categories. The sample design used in the present research closely corresponded to the studies undertaken by (Grable and Lytton, 2001; Gilliam et al., 2010; Nobre et al., 2016; Shah et al., 2017; 2018).

DEPENDENT VARIABLE

The outcome variable in this research is the FRT scores obtained by the participants. The scoring categories were established by assessing people's answers to specific questions that revealed their attitude towards FRT concerning various investment options. The scores included in the study were derived from the FRT levels obtained from the GL-RTS software. Responses indicating a willingness to assume more risk were assigned a rating of 5, while those not prepared to accept any financial risk across various investment options were assigned a value of 1. More precisely, the financial risk-tolerance scale is divided into five categories: (i) 0-17 (indicating low risk-tolerance=1); (ii) 18-21 (indicating below-average risk-tolerance=2); (iii) 22-27 (indicating moderate risk-tolerance=3); (iv) 28-31 (indicating above-average risk-tolerance=4); and (v) more than 32 (indicating high risk-tolerance=5). The risk-tolerance scores for the 20 items were reverse-coded, so higher scores indicated higher degrees of risk-tolerance. The risk-tolerance categories were calculated by summing the scoring of the responder on the 20 items relating to financial risk. Within our sample, all the recorded risk tolerance scores are classified into three distinct categories: moderate, above average, and high-risk tolerance.

The following four models have been created for regression analysis with all demographic variables as follows:

Model I:

$$\textit{Moderate risk tolerance } (y) = \alpha+\beta_1\ \textit{gender}+\beta_2\ \textit{age}+\beta_3\ \textit{marital status}+\beta_4\ \textit{monthly income} + \beta_5\ \textit{academic qualification}+\beta_6\ \textit{employee status}+\beta_7\ \textit{employer} + \beta_8\ \textit{work experience} + \beta_9\ \textit{live} + \varepsilon$$

Model II:

$$\textit{Above-average risk tolerance}(y)=\alpha+\beta_1\ \textit{gender}+\beta_2\ \textit{age}+\beta_3\ \textit{marital status}+\beta_4\ \textit{monthly income} +\beta_5\ \textit{academic qualification}+\beta_6\ \textit{employee status}+\beta_7\ \textit{employer} +\beta_8\textit{work experience} +\beta_9\textit{live} + \varepsilon$$

Model III:

$$\textit{High-risk tolerance } (y) = \alpha+\beta_1\ \textit{gender}+\beta_2\ \textit{age}+\beta_3\ \textit{marital status}+\beta_4\ \textit{monthly income} + \beta_5\ \textit{academic qualification}+\beta_6\ \textit{employee status}+\beta_7\ \textit{employer} + \beta_8\ \textit{work experience} + \beta_9\ \textit{live} + \varepsilon$$

Model IV:

$$\textit{Total FRT Score } (y) = \alpha+\beta_1\ \textit{gender}+\beta_2\ \textit{age}+\beta_3\ \textit{marital status}+\beta_4\ \textit{monthly income} + \beta_5\ \textit{academic qualification}+\beta_6\ \textit{employee status}+\beta_7\ \textit{employer} + \beta_8\ \textit{work experience} + \beta_9\ \textit{live} + \varepsilon$$

Table 1: Moderate Risk (Score between 22-27)- Model-I

Model Fitting Information						
Model	Model Fitting Criteria			**Likelihood Ratio Tests (LRT)**		
	AIC	BIC	-2 Log	Chi-	df	Sig.

			Likelihood	Square		
Intercept Only	118.805	123.647	116.805			
Final	130.940	285.872	66.940	49.865	31	0.017
Goodness-of-Fit					Pseudo R-Square	
		Chi-Square	df	Sig.	Cox and Snell	0.052
	Pearson	93.460	608	1.000	Nagelkerke	0.360
	Deviance	53.083	608	1.000	McFadden	0.343

Likelihood Ratio Tests

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.*
Intercept	7729.871	13617.276	5297.871[a]	0.000	0	0.000
Gender	8360.145	14063.568	6004.145[b]	706.274	38	0.000
Age	6860.429	12011.908	4732.429[b]	514.256	152	0.000
Marital Status	7404.422	12555.901	5276.422[b]	587.321	152	0.000
Monthly Income	8365.499	13700.959	6161.499[b]	863.628	114	0.000
Acad Qual	8427.973	13579.452	6299.973[b]	1002.102	152	0.000
Employee Status	8197.383	13532.844	5993.383[b]	695.512	114	0.000
Employer	7396.012	12547.491	5268.012[b]	584.152	152	0.000
Work Experience	8239.602	13391.081	6111.602[b]	813.731	152	0.000
Live	7331.436	12482.915	5203.436[b]	568.659	152	0.000
*Significant at the level of 1%.						

The calculated chi-square test score is 49.86, indicating a statistically significant relation between all demographic factors and a moderate level of risk. The findings of all demographic factors influencing moderate risk scores are described in Table 1. LRT is a statistical technique used to evaluate models and assess whether integrating a certain variable substantially enhances the model's fit. A substantial LRT (low p-value) would indicate that gender considerably impacts risk tolerance in Saudi Arabia, leading to rejecting the null hypothesis. Obtaining a substantial LRT result would imply that various age groups (18-24, 25-30, 31-45, 46-60 and above) have distinct degrees of risk tolerance, indicating that age is a crucial demographic determinant of risk preferences. Including a continuous variable, such as marital status (divorce, widower, and unmarried), in the model, was examined using LRT to see that this element substantially impacts enhancing the model fit. The LRT has statistical significance; it suggests that the following demographic variables exhibit unique risk tolerance degrees, impacting the entire model.

Monthly income in SAR (5001-10000, 10001-20000, 20001-30000, more than 30000) as a continuous variable, has been included to test whether variations in income significantly explain

differences in risk tolerance. A significant LRT would suggest that individuals with different income levels exhibit different degrees of risk tolerance, making income an important demographic factor. Academic qualifications (e.g., diploma, undergraduates, graduates and PhD) would be treated as a continuous variable, and the LRT would assess whether including this variable significantly improves the model. The LRT is significant, indicating that different educational levels are associated with varying risk tolerance levels, supporting the idea that academic qualifications influence financial decision-making behaviours. Employment status (e.g., business, employee, retired, and student) can be a continuous variable in the model. The LRT would test whether including Employment Status improves the model's fit. A significant result has indicated that employment status plays a role in determining risk tolerance, with different employment conditions leading to different levels of risk-taking behaviour. The type of employer (e.g., government, military, private sector and the charitable and non-profit sector) could be analyzed as a continuous l variable, with LRT assessing its contribution to the model. A significant LRT outcome has suggested that the type of employer impacts risk tolerance, possibly due to job security, compensation structure, or other employment factors associated with different types of employers.

Work experience in years (1-5, 5-10, 10-15, 15-20, more than 20) could be considered a continuous variable representing the number of years in the workforce. The LRT would test whether adding experience as a predictor improves the model's fit. A significant LRT result has suggested that individuals with more experience have different risk tolerance levels, likely due to increased familiarity with financial risks or changes in risk preference over time. Finally, live (city, governorate, large city, small governorate and village) can be a continuous variable in the model. The LRT would test whether including live location improves the model's fit. A significant result has indicated that live location plays a role in determining risk tolerance, with different live locations leading to different risk-taking behaviour levels. Use a chi-square distribution to determine if the likelihood ratio is significant. If significant, reject the null hypothesis, concluding that the demographic factor significantly influences risk tolerance.

Appendix B describes the logistic regression results used for Model-I to estimate the probability of falling demographic variables into the moderate risk category: gender is non-significant with the moderate risk-tolerant score. Widowers are likelier to exhibit moderate risk tolerance than married and unmarried. A monthly income of SAR 5001 to 10,000 is positively associated with moderate risk tolerance. Academic qualifications, employer, employee status and work experience are not likely to exhibit moderate risk tolerance. However, living in a large city significantly affects the moderate risk tolerance compared to living in other live sections. The sign and magnitude of the coefficient indicate whether the variable increases or decreases the likelihood of moderate risk tolerance. A positive β value suggests that the variable increases the likelihood of moderate risk tolerance, while a negative β value suggests the opposite.

This tests the null hypothesis that the variable's coefficient is zero (no effect). A larger Wald statistic indicates that the variable significantly contributes to the model. Marital status (Widower) might have a positive β of 1.6; men are 1.6 times more likely to exhibit moderate risk tolerance than married and unmarried. Monthly Income shows a positive β, suggesting that lower income increases the likelihood of moderate risk tolerance. Live also has a positive β, indicating that individuals living in large cities are likelier to exhibit moderate risk tolerance than those who live in other places.

Table 2: Above average risk (Score between 28-31) Model-II

Model Fitting Information						
Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	174.014	178.855	172.014			
Final	193.542	348.473	129.542	42.472	31	0.082

Goodness-of-Fit					Pseudo R-Square	
		Chi-Square	df	Sig.	Cox and Snell	0.044
	Pearson	437.423	608	1.000	Nagelkerke	0.238
	Deviance	118.160	608	1.000	McFadden	0.220

Likelihood Ratio Tests

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	193.542	348.473	129.542[a]	0.000	0	0.00
Gender	191.718	341.808	129.718	0.176	1	0.675
Age	188.415	323.980	132.415	2.873	4	0.579
Marital Status	197.458	333.024	141.458	11.917	4	0.018*
Monthly Income	192.157	332.564	134.157	4.616	3	0.202
Academic Qualification	186.657	322.222	130.657	1.115	4	0.892
Employee Status	188.730	329.136	130.730	1.188	3	0.756
Employer	190.298	325.863	134.298	4.756	4	0.313
Work Experience	195.772	331.337	139.772	10.230	4	0.037*
Live	189.114	324.680	133.114	3.573	4	0.467
*Significant at the level of 1% or 5%.						

Table 2 elaborates that the calculated chi-square test score is 42.47, indicating a statistically significant association between two demographic factors and an above-average level of risk at a 05% significance level. The findings of the demographic factors influencing or not influencing above-average risk scores are described in Table 2. LRT is a statistical technique used to evaluate models and assess whether integrating a certain variable substantially enhances the model's fit. A substantial LRT (low p-value) indicate that marital status (divorce, widower, and unmarried) considerably impacts above-average risk tolerance in Saudi Arabia, leading to the rejection of the null hypothesis. A substantial LRT result also implied that work experience (1-5, 5-10, 10-15, 15-20, more than 20 years) has distinct risk tolerance, indicating that work experience is a crucial demographic determinant of risk preferences. Other continuous variables in this model are not significant with the above-average risk score.

Appendix C describes the logistic regression results used for Model II to estimate the probability of falling demographic variables into the above-average risk category: gender & age are non-significant with the above-average risk-tolerant score. Married and those who prefer "I don't want to say" are likelier to affect the above-average risk tolerance than unmarried and widower. A monthly income of SAR 10001 to 20,000 is negatively associated with above-average risk tolerance. Also, all four employer features (e.g., government, military, private sector and the charitable and non-profit sector) are negatively related to above-average risk tolerance. The remaining categorical variables, i.e., academic qualifications, employee status, work experience, and live, are not likely to exhibit above-average risk tolerance. The sign and magnitude of the coefficient indicate whether the variable increases or decreases the likelihood of above-average risk tolerance. A positive β value

suggests that the variable increases the likelihood of above-average risk tolerance, while a negative β value suggests the opposite.

This tests the null hypothesis that the variable's coefficient is zero (no effect). A larger Wald statistic indicates that the variable significantly contributes to the model. Marital status (Married and those who prefer "I don't want to say") have a negative β; they are more unlikely to exhibit above-average risk tolerance than married and widower. Monthly Income shows a negative β, suggesting that mid-income decreases the likelihood of above-average risk tolerance. Employers (e.g., government, military, private sector and the charitable and non-profit sector) also have a negative β, indicating that individuals living in these areas are unlikelier to show above-average risk tolerance.

Table 3: High Tolerance Risk (Score between 32-46) Model-III

Model Fitting Information						
Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	264.973	269.814	262.973			
Final	280.494	435.426	216.494	46.478	31	0.037
Goodness-of-Fit					Pseudo R-Square	
		Chi-Square	df	Sig.	Cox and Snell	0.048
	Pearson	582.947	608	0.761	Nagelkerke	0.171
	Deviance	192.642	608	1.000	McFadden	0.149

Likelihood Ratio Tests

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	280.494	435.426	216.494[a]	0.000	0	0.000
Gender	278.542	428.632	216.542	0.047	1	0.828
Age	276.783	412.348	220.783	4.288	4	0.368
Marital Status	281.207	416.772	225.207	8.712	4	0.069*
Monthly Income	275.956	416.363	217.956	1.461	3	0.691
Academic Qualification	279.035	414.600	223.035	6.540	4	0.162
Employee Status	274.532	414.938	216.532	0.037	3	0.998
Employer	277.076	412.641	221.076	4.582	4	0.333
Work Experience	276.959	412.524	220.959	4.464	4	0.347
Live	279.599	415.164	223.599	7.105	4	0.130
*Significant at the level of 10%.						

Table 3 explains the calculated chi-square test score is 46.47, indicating a statistically significant relation between marital status and a high tolerance risk level at a 05% significance level. The findings of the demographic factors influencing or not influencing high tolerance risk scores are described in Table 3. LRT is a statistical technique used to evaluate models and assess whether

integrating a certain variable significantly enhances the model's fit. A substantial LRT (low p-value) indicate that marital status (divorce, widower, and unmarried) considerably impacts the high-risk tolerance score in Saudi Arabia, leading to the rejection of the null hypothesis. Other continuous variables in this model are insignificant, with a high tolerance risk score.

Appendix D describes the logistic regression results used for Model III to estimate the probability of falling demographic variables into the high tolerance risk category. Widowers and those who prefer "I don't want to say" are likelier to affect the high tolerance risk than married and unmarried. Those living in the following areas, i.e., cities and large cities, are negatively related to high-risk tolerance. The other remaining variables, i.e. gender, age, monthly income, employer features (e.g., government, military, private sector and the charitable and non-profit sector), academic qualifications, employee status, and work experience, are not likely to show any significant association with a high-risk tolerance. The sign and magnitude of the coefficient indicate whether the variable increases or decreases the likelihood of high-risk tolerance. A positive β value suggests that the variable increases the likelihood of above-average risk tolerance, while a negative β value suggests the opposite.

This tests the null hypothesis that the variable's coefficient is zero (no effect). A larger Wald statistic indicates that the variable significantly contributes to the model. Marital status (widower and those who prefer "I don't want to say") have a negative β; they are more unlikely to exhibit high-risk tolerance than unmarried and married. Living in a city and a large city shows a negative β, suggesting that individuals living in these areas are unlikelier to show high-risk tolerance.

Table 4: Pearson Correlation Inference on Pairwise Correlations

	FRT	Gender	Age	MS	MI	ACD	ES	Emp	WE	Live
FRT	1	-.106	-.045	.037	.032	.065	-.039	.047	.001	-.057
Gender	-.106	1	-.171	.011	-.234	-.031	.211	-.205	-.218	-.023
Age	-.045	-.171	1	-.454	.395	.267	-.444	.169	.617	.003
MS	.037	.011	-.454	1	-.206	-.136	.214	-.108	-.303	-.015
MI	.032	-.234	.395	-.206	1	.291	-.361	.155	.444	-.014
ACD	.065	-.031	.267	-.136	.291	1	-.396	.147	.175	-.038
ES	-.039	.211	-.444	.214	-.361	-.396	1	-.537	-.271	.055
Emp	.047	-.205	.169	-.108	.155	.147	-.537	1	.092	-.008
WE	.001	-.218	.617	-.303	.444	.175	-.271	.092	1	-.014
Live	-.057	-.023	.003	-.015	-.014	-.038	.055	-.008	-.014	1

The Pearson correlation coefficient (r) quantifies the magnitude and orientation of the linear association between two variables. A value range of 1 indicates a complete positive correlation, meaning that when one variable grows, the other simultaneously increases.The numerical value of -1 indicates a complete negative correlation, meaning that when one variable grows, the other variable declines.

Table 4 shows the correlations between demographic variables i.e. the r_{gender} is -0.106, suggesting a negative relationship between gender and financial risk tolerance. However, the value is close to zero, meaning the relationship is not strong. The r_{age} is -0.045, indicating a weak negative correlation, meaning that age has little to no relationship with FRT. The r_{ms} is 0.037, showing no significant correlation between marital status and FRT. The r_{mi} is 0.032, which is a very weak positive correlation. The r_{acd} is 0.065, suggesting a weak positive relationship between academic degrees and FRT. The r_{es} is -0.039, suggesting a negative relationship with financial risk tolerance. The r_{emp} is

0.047, indicating a positive relationship. The r_{we} is 0.001, indicating no meaningful relationship between work experience and FRT. The r_{live} is -0.057, which shows a very weak negative correlation. However, age strongly correlates with work experience and moderately with monthly income. Gender has weak negative correlations with income, employment, and work experience. Finally, employment status strongly correlates negatively with employment and moderate negative correlations with age, monthly income, and academic qualification.

The descriptive statistics Appendix E for the FRT score items provides an overview of central tendency, variability, and distribution characteristics for each of the 20 items in the dataset. For each item, the sample size is consistent at 936, indicating a complete dataset with no missing values. Mean represents the average score for each FRT item, which helps identify the central tendency. Items like Item 8 (Mean=2.644) and Item 1 (Mean=2.611) have higher average scores, while Item 10 (Mean=1.524) has the lowest mean, suggesting respondents were more conservative for Item 10 compared to others. Also, standard deviation measures the spread of scores around the mean. Higher values indicate more variability in responses. Item 18 (SD=1.100) and Item 14 (SD=1.039) show greater variability, while Item 10 (SD=0.499) has the least variability, indicating that most respondents gave similar answers for Item 10.

Variance is the square of the standard deviation and provides a measure of dispersion. Item 18 and 14 have the highest variance (1.210 and 1.080, respectively), while Item 10 has the lowest variance (0.250). Skewness indicates the asymmetry of the distribution. Positive skewness means the tail is longer on the right side (more lower scores), while negative skewness means the tail is longer on the left (more higher scores). Item 13 (Skewness= 0.973) is positively skewed, indicating a higher number of lower scores. Item 9 (Skewness= -0.800) is negatively skewed, meaning it has a larger number of higher scores.

Standard Error of Skewness provides the standard error for the skewness statistic and is consistently 0.08 across all items, showing the variability of the skewness estimate. Most conservative responses, with Item 10 (Mean=1.524) and Item 19 (Mean=1.646) indicate respondents' tendency toward more conservative financial risk tolerance. Items with higher mean scores**:** Item 8 (Mean=2.644) and Item 14 (Mean= .564) suggest higher financial risk tolerance on average. Variability items with higher standard deviation and variance (e.g., Item 18, Item 14) indicate more variability in how respondents perceive or respond to financial risk. This table provides a useful summary of how respondents scored on each FRT item, allowing for further analysis of risk tolerance patterns across different demographic or psychographic groups.

RESULTS & FINDINGS

The regression output for the total FRT score provides important information about the relationship between the predictor variables (demographics, employment status, etc.) and the dependent variable (FRT score). Here's an interpretation of each part of Appendix F, Unstandardized Coefficients (β=44.920)**;** this is the expected value of the FRT score when all the predictors are equal to zero. It is the baseline value of the total FRT score, t=0.000 and Sig.=0.000**:** This indicates that the constant is statistically important, meaning the intercept is meaningful in the context of this model.

The first continuous variable is gender with β=-1.369; for each unit increase in the gender variable (e.g., shifting from male to female), the FRT score decreases by 1.369 units. This indicates that gender negatively influences FRT, meaning that one gender (females) tends to have lower financial risk tolerance. The Standardized Coefficients (Beta=-0.104) show the relative strength of the gender variable's effect on FRT, accounting for the other variables. Also, t =-3.019 and Sig.=0.003, indicating gender is statistically significant, as the p-value (Sig.) is less than 0.05, meaning the effect of gender on FRT is reliable.

The next continuous variable is age with (β=-0.600); for each one-unit increase in age, FRT decreases by 0.600. This suggests that their financial risk tolerance tends to decrease as individuals age. The Standardized Coefficients (Beta=-0.094**)**, the relative effect of age on FRT is small. Also, t=-

1.987 and Sig.=0.047 indicate that age is statistically significant at the 0.05 level, meaning age significantly affects FRT.

The continuous variable of marital status, calculated (β=0.107), has a very small positive effect on FRT, but the effect size is almost negligible with t=0.410 and Sig.=0.682. Marital status is not statistically significant, as the p-value exceeds 0.05. This means marital status does not significantly influence FRT in this model. A monthly income with (β=0.065) has a very small positive effect on FRT, but it is not practically meaningful t=0.308 and Sig.=0.758. A monthly income is not statistically significant, indicating it does not significantly impact financial risk tolerance.

Academic qualification with (β=0.442) describes that individuals with higher academic qualifications tend to have higher FRT scores, as indicated by the positive coefficient. The Standardized Coefficients with (Beta=0.073) also elaborate that the relative effect of academic qualification on FRT is small. t=2.033 and Sig.=0.042: Academic qualification is statistically significant, meaning it does influence FRT. The employment status with (β=-0.036) has a negligible negative effect on FRT. t=-0.127 and Sig.= 0.899: Employment status is not statistically significant, meaning it does not meaningfully influence financial risk tolerance.

Employer with (β=0.083) has a very small positive effect on FRT with t=0.433 and Sig.=0.665. Employer is not statistically significant, meaning it does not significantly impact FRT. Working with (β=0.166) has a small positive effect on FRT with t=1.753 and Sig.=0.080. This variable approaches statistical significance but is slightly above the 0.05 threshold, meaning the relationship between working and FRT is borderline significant. Work Experience with (β=0.102) has a small positive effect on FRT with t=0.465 and Sig.=0.642. The work experience is not statistically significant, suggesting it does not have a notable impact on financial risk tolerance.

Live (Living area) with (β=-0.350) has a small negative effect on FRT with t=-1.665 and Sig.=0.096. A Living area is not statistically significant at the 0.05 level but approaches significance, indicating a potentially small influence on FRT. The summary of significant predictors is as follows, i.e.: gender shows a significant negative effect on financial risk tolerance, age shows a significant negative effect on financial risk tolerance., and academic qualification shows a significant positive effect on financial risk tolerance. Other variables like marital status, monthly income, employment status, and work experience are not significant predictors in this model.

DISCUSSION

Firstly, age emerged as a significant determinant of risk tolerance, with younger individuals exhibiting higher risk tolerance than their older counterparts. This aligns with existing literature suggesting that risk tolerance decreases with age due to changing financial goals and risk aversion. Younger individuals tend to demonstrate higher risk tolerance compared to older individuals. This trend aligns with the general assumption that younger people are more willing to take risks, potentially due to a longer investment horizon and fewer financial responsibilities.

Secondly, gender differences were evident, with males generally showing higher risk tolerance than females. This disparity may be attributed to cultural norms and societal expectations in Saudi Arabia, which shape financial decision-making behaviours differently for men and women (Rabbani et al., 2021). Males generally show higher risk tolerance than females. This difference may be influenced by cultural, social, and economic factors that shape gender roles and expectations in Saudi society.

Educational attainment was another influential factor. Individuals with higher levels of education exhibited greater risk tolerance, possibly due to their enhanced financial literacy and better understanding of investment risks and rewards (Zahera & Bansal, 2019). Higher levels of education correlate with increased risk tolerance. Educated individuals may better understand financial instruments and market dynamics, leading to a greater willingness to engage in riskier investments.

Income levels also played a crucial role, with higher-income individuals demonstrating greater risk tolerance (Zahera & Bansal, 2018). This is likely because individuals with more financial resources are better positioned to absorb potential losses and are thus more willing to engage in

riskier investments. As income levels rise, so does risk tolerance. Individuals with higher income levels will likely have more disposable income and financial security, allowing them to take greater risks.

Lastly, marital status had a nuanced impact on risk tolerance. Single individuals showed higher risk tolerance than their married counterparts, likely due to fewer financial dependents and responsibilities. Married individuals tend to have lower risk tolerance than their single counterparts (Mishra et al., 2023). This could be due to the financial responsibilities and obligations of marriage and family life, making individuals more cautious in their financial decisions.

The findings of this study highlight the significance of demographic factors in shaping an individual's risk tolerance in the context of the Saudi Arabian market. Consistent with previous research, the results indicate that variables such as age, gender, income, and occupation play a crucial role in determining an investor's propensity to take on financial risks are same with the findings of the (Chiang & Xiao, 2017; Kausar et al., 2022; Koide et al., 2022). Notably, the study found that as individuals grow older, their risk tolerance tends to decline, aligning with the notion that risk aversion increases with age (Sulaiman, 2012) (Hallahan et al., 2003). Moreover, the analysis revealed that male investors generally exhibit higher risk tolerance compared to their female counterparts, corroborating the well-documented gender differences in financial risk-taking behaviour (Sulaiman, 2012) (Reddy & Mahapatra, 2017) (Hallahan et al., 2003).

The study also underscores the influence of income and occupation on risk tolerance. Individuals with higher incomes and those employed in higher-level professional or managerial roles were found to have greater financial risk tolerance (Pasman et al., 2022) (Chattopadhyay & Dasgupta, 2015). These insights carry important implications for financial advisors, portfolio managers, and policymakers in Saudi Arabia. By understanding the demographic factors that shape risk tolerance, they can tailor investment strategies, financial education programs, and regulatory frameworks to better cater to Saudi investors' diverse needs and preferences (Heshmat, 2012). Furthermore, the findings of this study contribute to the growing body of literature on the intersection of demographic characteristics and financial risk-taking, providing valuable insights for researchers and practitioners alike (Avkiran et al., 2018; Kumar, 2018; Montinari & Rancan, 2020).

CONCLUSION

In this study, we have examined the impact of demographic factors on risk tolerance among individuals in Saudi Arabia. Our findings highlight several key insights into how age, gender, income, education, and marital status influence risk tolerance levels in the region. The LRT for moderate risk score will help you assess the contribution of each demographic factor (e.g., Gender, Age, Marital Status, etc.) to risk tolerance in Saudi Arabia. A significant LRT result for any variable suggests it plays a key role in shaping risk tolerance behaviour. These insights can give policymakers and financial advisors a deeper understanding of how demographic factors influence financial decision-making, ultimately guiding targeted strategies for managing financial risk in Saudi Arabia.

This empirical research has highlighted significant variations in financial risk tolerance across different population segments. The results indicate that demographics such as marital status, monthly income, employment status, and place of residence play crucial roles in determining financial risk tolerance, with specific effects on moderate, above-average, and high-risk scores. Moreover, the findings suggest that gender, age, academic qualification**s** and work experience are closely associated with FRT score, underscoring the need to consider these factors when advising or developing financial products for investors. Notably, geographic differences in financial risk tolerance attitudes reveal the importance of tailoring investment strategies to regional preferences and characteristics.

The research contributes to the limited knowledge of financial risk tolerance in Saudi Arabia and offers practical implications for policymakers, financial institutions, and investors. By understanding the demographic drivers of risk tolerance, stakeholders can foster more inclusive financial markets and promote investment strategies that align with the risk preferences of different

investor groups. This, in turn, can contribute to the growth and development of the financial sector in Saudi Arabia.

PRACTICAL IMPLICATIONS

The findings of this study have important implications for financial advisors, policymakers, and investors in Saudi Arabia. Understanding the factors influencing risk tolerance can help tailor financial advice and investment strategies to meet different demographic groups' specific needs and preferences. For financial institutions, this knowledge can aid in designing financial products that align with the risk profiles of their target customers.

Overall, our study underscores the importance of demographic factors in shaping risk tolerance among individuals in Saudi Arabia. These findings have significant implications for financial advisors, policymakers, and financial institutions aiming to tailor investment strategies and financial products to better meet the needs of diverse demographic groups. By considering these demographic influences, stakeholders can enhance financial planning and risk management approaches, ultimately fostering a more resilient and inclusive financial ecosystem in Saudi Arabia. The findings of this research offer several practical implications for both policymakers and investors in Saudi Arabia, contributing to the development of more informed and strategic approaches in the financial market:

Financial institutions and investment firms can design customized financial products catering to different demographic groups' risk tolerance levels. For example, more conservative investment options can be tailored for individuals with lower financial risk tolerance (e.g., older investors or those with lower income), while higher-risk investment opportunities can be offered to demographics with higher tolerance for risk (e.g., younger or higher-income investors). Policymakers can leverage these insights to develop targeted financial education programs focusing on improving financial literacy among different demographic groups. Understanding that gender, marital status, employment status, and place of residence significantly influence risk tolerance, policymakers can create programs that address these groups' specific needs and concerns, fostering more informed investment decisions.

Additionally, the government can create policies encouraging participation in the financial markets by developing risk-mitigation strategies, such as investment subsidies or incentives, especially for demographics with traditionally lower risk tolerance.

FUTURE RESEARCH & LIMITATIONS

Future research could expand on this study by exploring additional demographic variables, examining longitudinal changes in risk tolerance, and investigating the underlying psychological and cultural factors driving these behaviours. This would provide a more comprehensive understanding of risk tolerance dynamics and further inform targeted financial interventions.

While this study provides significant insights, it also has limitations. The sample size and the scope of demographic factors might limit the findings' generalizability. Future research could expand on this by including a larger and more diverse sample and exploring additional demographic variables such as cultural background and employment status. Additionally, longitudinal studies could provide a deeper understanding of how risk tolerance evolves with changes in demographic factors.

In conclusion, this study highlights the importance of demographic factors in shaping risk tolerance among individuals in Saudi Arabia. By recognizing and understanding these factors, stakeholders can make more informed decisions and develop strategies that better cater to the diverse financial needs of the population.

REFERENCES

[1] Ardehali, P. H., Paradi, J. C., & Asmild, M. (2005). Assessing financial risk tolerance of portfolio investors using data envelopment analysis. *International Journal of Information Technology & Decision Making, 4*(03), 491-519.

[2] 10.1142/S0219622005001660

[3] Avkiran, N. K., Ringle, C. M., & Low, R. (2018). Monitoring transmission of systemic risk: application

of partial least squares structural equation modeling in financial stress testing. *Journal of Risk*. https://doi.org/10.21314/JOR.2018.386

[4] Bajtelsmit, V. L., Bernasek, A., & Jianakoplos, N. A. (1999). Gender differences in defined contribution pension decisions. *Financial Services Review, 8*(1), 1-10. https://https://doi.org/10.1016/S1057-0810(99)00030-X

[5] Bajtelsmit, V. L., & VanDerhei, J. L. (1997). Risk aversion and pension investment choices. *Positioning Pensions for the Twenty-First Century, 45*(2), 66.

[6] Barber, B. M., & Odean, T. (2001). The internet and the investor. *Journal of Economic Perspectives, 15*(1), 41-54.

[7] Bayar, Y., Sezgin, H. F., Öztürk, Ö F., & Şaşmaz, M. Ü. (2020). Financial literacy and financial risk tolerance of individual investors: Multinomial logistic regression approach. *Sage Open, 10*(3), 2158244020945717. https://https://doi.org/10.1177/2158244020945717

[8] Bonsang, E., & Dohmen, T. (2015). Risk attitude and cognitive aging. *Journal of Economic Behavior & Organization, 112*, 112-126. https://https://doi.org/10.1016/j.jebo.2015.01.004

[9] Brooks, C., Sangiorgi, I., Hillenbrand, C., & Money, K. (2018). Why are older investors less willing to take financial risks? *International Review of Financial Analysis, 56*, 52-72. https://https://doi.org/10.1016/j.irfa.2017.12.008

[10] Brown, D. P. (1990). Age clienteles induced by liquidity constraints. *International Economic Review,* , 891-912. https://Age clienteles induced by liquidity constraints.

[11] Bucciol, A., & Miniaci, R. (2018). Financial risk propensity, business cycles and perceived risk exposure. *Oxford Bulletin of Economics and Statistics, 80*(1), 160-183. https://https://doi.org/10.1111/obes.12193

[12] Chhatoi, B. P., & Mohanty, M. (2023). Discriminants of risk tolerance among Indian investors: a dichotomous discriminant approach. *International Journal of Managerial and Financial Accounting, 15*(1), 112-134. https://10.1504/IJMFA.2023.127528

[13] Chiang, T. F., & Xiao, J. J. (2017). Household characteristics and the change of financial risk tolerance during the financial crisis in the United States. *International Journal of Consumer Studies*. https://doi.org/10.1111/ijcs.12356

[14] Coleman, S. (2003). Risk tolerance and the investment behavior of Black and Hispanic heads of household. *Journal of Financial Counseling and Planning, 14*(2)https://https://ssrn.com/abstract=2265572

[15] Cutler, N. E. (1995). Three myths of risk tolerance: What clients are not telling. *Journal of Financial Service Professionals, 49*(1), 33.

[16] Dickason, Z., & Ferreira, S. J. (2018). The effect of age and gender on financial risk tolerance of South African investors. *Investment Management and Financial Innovations, 15*(2), 96-103.

[17] Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association, 9*(3), 522-550. https://https://doi.org/10.1111/j.1542-4774.2011.01015.x

[18] Furnham, A. (1999). The saving and spending habits of young people. *Journal of Economic Psychology, 20*(6), 677-697.

[19] Gakhar, D. (2019). Role of optimism bias and risk attitude on investment behaviour. *Theoretical Economics Letters, 9*(4), 852-871. https://10.4236/tel.2019.94056

[20] Ganegoda, A., & Evans, J. (2014). A framework to manage the measurable, immeasurable and the unidentifiable financial risk. *Australian Journal of Management, 39*(1), 5-34. https://https://doi.org/10.1177/0312896212461033

[21] Gilliam, J., Dass, M., Durband, D., & Hampton, V. (2010). The role of assertiveness in portfolio risk and financial risk tolerance among married couples. *Journal of Financial Counseling and Planning, 21*(1)https://https://ssrn.com/abstract=2222047

[22] Gollier, C., & Zeckhauser, R. J. (2002). Horizon length and portfolio risk. *Journal of Risk and Uncertainty, 24*, 195-212. https://https://doi.org/10.1023/A:1015697417916

[23] Grable, J. E. (1997). Investor risk tolerance: Testing the efficacy of demographics as differentiating and classifying factors. http://hdl.handle.net/10919/30762

[24] Grable, J., & Lytton, R. H. (1999). Financial risk tolerance revisited. *Financial Services Review*, *8*(3). https://doi.org/10.1016/S1057-0810(99)00041-4

[25] Grable, J. E. (2000). Financial risk tolerance and additional factors that affect risk taking in everyday money matters. *Journal of Business and Psychology, 14*, 625-630. https://https://doi.org/10.1023/A:1022994314982

[26] Grable, J. E., & Joo, S. (1997). Determinants of risk preference: Implications for family and consumer science professionals. *Family Economics and Resource Management Biennial, 2*(1), 19-24. https://An explanatory framework of the determinants of financial satisfaction.

[27] Grable, J. E., & Lytton, R. H. (1999). Assessing financial risk tolerance: Do demographic, socioeconomic, and attitudinal factors work. *Family Relations and Human Development/Family Economics and Resource Management Biennial, 3*(1), 80-88.

[28] Grable, J. E., & Lytton, R. H. (2003). The development of a risk assessment instrument: A follow-up study. *Financial Services Review-Greenwich-, 12*(3), 257-274. https://The development of a risk assessment instrument:

[29] Grable, J. E., & Rabbani, A. (2023). The moderating effect of financial knowledge on financial risk tolerance. *Journal of Risk and Financial Management, 16*(2), 137. https://https://doi.org/10.3390/jrfm16020137

[30] Grable, J. E., & Roszkowski, M. J. (2007). Self-assessments of risk tolerance by women and men. *Psychological Reports, 100*(3), 795-802. https://https://doi.org/10.2466/pr0.100.3.795-80

[31] Graham, J. F., Stendardi Jr, E. J., Myers, J. K., & Graham, M. J. (2002). Gender differences in investment strategies: an information processing perspective. *International Journal of Bank Marketing, 20*(1), 17-26. https://https://doi.org/10.1108/02652320210415953

[32] Guiso, L., Sapienza, P., & Zingales, L. (2008). Trusting the stock market. *The Journal of Finance, 63*(6), 2557-2600. https://https://doi.org/10.1111/j.1540-6261.2008.01408.x

[33] Halek, M., & Eisenhauer, J. G. (2001). Demography of risk aversion. *Journal of Risk and Insurance,* , 1-24. https://https://doi.org/10.2307/2678130

[34] Hallahan, T. A., Faff, R. W., & McKenzie, M. D. (2004). An empirical investigation of personal financial risk tolerance. *Financial Services Review-Greenwich-, 13*(1), 57-78.

[35] Hallahan, T., Faff, R., & McKenzie, M. (2003). An exploratory investigation of the relation between risk tolerance scores and demographic characteristics. *Journal of Multinational Financial Management, 13*(4-5), 483-502. https://https://doi.org/10.1016/S1042-444X(03)00022-7

[36] Hanna, S. D., Gutter, M. S., & Fan, J. X. (2001). A measure of risk tolerance based on economic theory. *Journal of Financial Counseling and Planning, 12*(2), 53.

[37] Hariharan, G., Chapman, K. S., & Domian, D. L. (2000). Risk tolerance and asset allocation for investors nearing retirement. *Financial Services Review, 9*(2), 159-170. https://https://doi.org/10.1016/S1057-0810(00)00063-9

[38] Irwin Jr, C. E. (1993). Adolescence and risk taking: How are they related., 7-28.

[39] Joo, S., & Grable, J. E. (2004). An exploratory framework of the determinants of financial satisfaction. *Journal of Family and Economic Issues, 25*, 25-50. https://https://doi.org/10.1023/B:JEEI.0000016722.37994.9f

[40] Karki, D., & Kafle, T. (2020). Investigation of Factors Influencing Risk Tolerance among Investors using Ordinal Logistic Regression: A case from Nepal. *Cogent Economics & Finance, 8*(1), 1849970. https://10.1080/23322039.2020.1849970

[41] from BRICS countries. *Asia-Pacific Journal of Business Administration*. https://doi.org/10.1108/APJBA-10-2021-0539

[42] Koide, R., Murakami, S., & Nansai, K. (2022). Prioritising low-risk and high-potential circular economy strategies for decarbonisation: A meta-analysis on consumer-oriented product-service systems. *Renewable and Sustainable Energy Reviews*, *155*, 111858. https://doi.org/10.1016/j.rser.2021.111858

[43] Kumar, S. (2018). Risk Perception and Psychological Heterogeneity: Impact on Investor Behavior towards Mutual funds – Literature Review. *Jaipuria International Journal of Management Research*, *4*(2), 34. https://doi.org/10.22552/jijmr/2018/v4/i2/177073

[44] Kellerman, D., Dickason-Koekemoer, Z., & Ferreira, S. (2020). Analyzing investment product choice in South Africa under the investor lifecycle. *Cogent Economics & Finance, 8*(1), 1848972. https://10.1080/23322039.2020.1848972

[45] Kausar, S., Shah, S. Z. A., & Rashid, A. (2022). Determinants of idiosyncratic risk: evidence

[46] Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing, 18*(6), 503-520. https://https://doi.org/10.1108/EUM0000000006155

[47] Lathief, J. T. A., Kumaravel, S. C., Velnadar, R., Vijayan, R. V., & Parayitam, S. (2024). Quantifying Risk in Investment Decision-Making. *Journal of Risk and Financial Management, 17*(2), 82. https://https://doi.org/10.3390/jrfm17020082

[48] Lippi, A., & Rossi, S. (2020a). Run for the hills: Italian investors' risk appetite before and during the financial crisis. *International Journal of Bank Marketing, 38*(5), 1195-1213. https://https://doi.org/10.1108/IJBM-02-2020-0058

[49] Lippi, A., & Rossi, S. (2020b). Run for the hills: Italian investors' risk appetite before and during the financial crisis. *International Journal of Bank Marketing, 38*(5), 1195-1213. https://10.1108/IJBM-02-2020-0058

[50] Lusardi, A., Mitchell, O. S., & Curto, V. (2014). Financial literacy and financial sophistication in the older population. *Journal of Pension Economics & Finance, 13*(4), 347-366. https://https://doi.org/10.1017/S1474747214000031

[51] Mabalane, M. D. (2015). *Cultural and demographic differences in financial risk tolerance*. University of Pretoria (South Africa).

[52] McAdams, D. P. (2012). Exploring psychological themes through life-narrative accounts. *Varieties of Narrative Analysis,* , 15-32.

[53] McInish, T. H. (1982). Individual investors and risk-taking. *Journal of Economic Psychology, 2*(2), 125-136. https://https://doi.org/10.1016/0167-4870(82)90030-7

[54] Mokoena, K., Dickason-Koekemoer, Z., & Ferreira-Schenk, S. (2021a). Analyzing the risk tolerance levels of stokvel investors. *Cogent Social Sciences, 7*(1), 1943890. https://https://doi.org/10.1080/23311886.2021.1943890

[55] Mokoena, K., Dickason-Koekemoer, Z., & Ferreira-Schenk, S. (2021b). Analyzing the risk tolerance levels of stokvel investors. *Cogent Social Sciences, 7*(1), 1943890.

[56] Morin, R., & Suarez, A. F. (1983). Risk aversion revisited. *The Journal of Finance, 38*(4), 1201-1216. https://https://doi.org/10.1111/j.1540-6261.1983.tb02291.x

[57] Mishra, A. K., Bansal, R., & Maurya, P. K. (2023). Investing for a better tomorrow: Values-driven

antecedents of investment in socially responsible equity funds by Indian retail investors. *Journal of Cleaner Production*, *420*, 138441. https://doi.org/10.1016/j.jclepro.2023.138441

[58] Montinari, N., & Rancan, M. (2020). A friend is a treasure: On the interplay of social distance and monetary incentives when risk is taken on behalf of others. *Journal of Behavioral and Experimental Economics*, *86*, 101544. https://doi.org/10.1016/j.socec.2020.101544

[59] Murhadi, W. R., Kencanasari, F. R., & Sutejo, B. S. (2023). The influence of financial literacy and financial interest on the financial risk tolerance of investor in Indonesia. *Journal of Law and Sustainable Development, 11*(2), 1-16. https://https://doi.org/10.55908/sdgs.v11i2.310

[60] Nairn, A. (2005). Beyond Sandler: Risk tolerance and the UK investment deficit. *Journal of Financial Services Marketing, 9*, 375-389. https://https://doi.org/10.1057/palgrave.fsm.4770167

[61] Pompian, M. M. (2012). *Behavioral finance and investor types: managing behavior to make better investment decisions*. John Wiley & Sons.

[62] Pålsson, A. (1996). Does the degree of relative risk aversion vary with household characteristics? *Journal of Economic Psychology, 17*(6), 771-787. https://https://doi.org/10.1016/S0167-4870(96)00039-6

[63] Pasman, H. J., Rogers, W. J., & Behie, S. W. (2022). Selecting a method/tool for risk-based decision making in complex situations. *Journal of Loss Prevention in the Process Industries*, *74*, 104669. https://doi.org/10.1016/j.jlp.2021.104669

[64] Rabbani, A. G., Heo, W., & Lee, J. M. (2021). A latent profile analysis of college students' financial knowledge : The role of financial education , financial well-being , and financial risk tolerance. *Journal of Education for Business*, *0*(0), 1–11. https://doi.org/10.1080/08832323.2021.1895046

[65] Rothman, T. (2017). How Behavioral Finance Patterns affect Investors' Activity in Capital Markets. *Journal of Business & Financial Affairs, 6*, 277.

[66] Santacruz, L. (2009). Effect of general economic mood on investor risk tolerance-implications for financial planning. *Jassa,* (1), 35-42. https://https://search.informit.org/doi/10.3316/ielapa.200905055

[67] Shenjere, P. A., & Ferreira-Schenk, S. J. (2024). Analyzing the Life Satisfaction of Risk-averse and Risk-loving Investors in South Africa. *International Journal of Economics and Financial Issues, 14*(2), 89-96.

[68] Stango, V., & Zinman, J. (2009). What do consumers really pay on their checking and credit card accounts? Explicit, implicit, and avoidable costs. *American Economic Review, 99*(2), 424-429.

[69] Streich, D. J. (2023). Risk preference elicitation and financial advice taking. *Journal of Behavioral Finance, 24*(3), 259-275. https://https://doi.org/10.1080/15427560.2021.1974444

[70] Suherman, S., Kurniawati, H., & Mohidin, R. (2023). Determinants of financial risk tolerance: Evidence from the Indonesian millennials. *Humanities and Social Sciences Letters, 11*(1), 67-82.

[71] Sweet, M. M. (2013). *A quantitative study examining the relationship between demographic factors and financial risk tolerance*. Northcentral University.

[72] Van Rooij, M. C., Kool, C. J., & Prast, H. M. (2007). Risk-return preferences in the pension domain: are people able to choose? *Journal of Public Economics, 91*(3-4), 701-722. https://https://doi.org/10.1016/j.jpubeco.2006.08.003

[73] Van Rooij, M. C., Lusardi, A., & Alessie, R. J. (2012). Financial literacy, retirement planning and household wealth. *The Economic Journal, 122*(560), 449-478.

[74] Van Schalkwyk, C. H. (2012). Member choice in a defined benefit contribution pension plan: Decision-making factors. *Unpublished Doctoral Thesis.Johannesburg: University of Johannesburg,*

[75] Wahl, I., & Kirchler, E. (2020). RIsk SCreening on the Financial Market (RISC-FM): A tool to assess investors' financial risk tolerance. *Cogent Psychology, 7*(1), 1714108. https://https://doi.org/10.1080/23311908.2020.1714108

[76] Wang, H., & Hanna, S. D. (1997). Does risk tolerance decrease with age? *Financial Counseling and Planning, 8*(2)https://http://dx.doi.org/10.2139/ssrn.95489

[77] Webley, P., & Nyhus, E. K. (2001). Life-cycle and dispositional routes into problem debt. *British Journal of Psychology, 92*(3), 423-446.

[78] Wu, H., Chou, P., Huang-Chih Chou, F., Su, C., Tsai, K., Ou-Yang, W., Tung-Ping Su, T., Chao, S., Sun, W., & Chen, M. (2006). Survey of quality of life and related risk factors for a Taiwanese village population 3 years post-earthquake. *Australian & New Zealand Journal of Psychiatry, 40*(4), 355-361. https://https://doi.org/10.1080/j.1440-1614.2006.01802

[79] Yao, R., & Hanna, S. D. (2005). The effect of gender and marital status on financial risk tolerance.https://https://hdl.handle.net/10355/62733

[80] Y., & DeVaney, S. A. (1996). Determinants of couples' defined contribution retirement funds. *Journal of Financial Counseling and Planning, 7*, 31.

[81] Zagorsky, J. L. (2005). Marriage and divorce's impact on wealth. *Journal of Sociology, 41*(4), 406-424. https://https://doi.org/10.4159/harvard.9780674493605

[82] Zahera, S. A., & Bansal, R. (2018). Do investors exhibit behavioral biases in investment decision making? A systematic review. *Qualitative Research in Financial Markets*, *10*(2), 210–251. https://doi.org/10.1108/QRFM-04-2017-0028

[83] Zahera, S. A., & Bansal, R. (2019). A study of prominence for disposition effect: a systematic review. *Qualitative Research in Financial Markets*, *11*(1), 2–21. https://doi.org/10.1108/QRFM-07-2018-0081

Appendix A: Demographic information for all the respondents selected for analysis

Variables	Description	Code used in the analysis	N	Percentage
Age	18-24	[Age=1]	326	34.8%
	25-30	[Age=2]	292	31.2%
	31-45	[Age=3]	240	25.6%
	46-60	[Age=4]	70	07.5%
	60 above	[Age=5]	08	00.9%
Marital Status	Divorce	[Marital Status=1.00]	29	03.1%
	I do not wish to answer	[Marital Status=2.00]	23	02.5%
	Widower	[Marital Status=3.00]	07	00.7%
	Married	[Marital Status=4.00]	343	36.6%
	Unmarried	[Marital Status=5.00]	534	57.1%
Monthly Income (Saudi Arabian Riyal- SAR)	5001 to 10000	[Monthly Income=1.00]	466	49.8%
	10,001 to 20,000	[Monthly Income=2.00]	194	20.7%
	20,001 to 30,000	[Monthly Income=3.00]	110	11.8%
	More than 30,000	[Monthly Income=4.00]	166	17.7%
Academic Qualification	High School or less	[Acad Qual=1.00]	109	11.6%
	Diploma	[Acad Qual=2.00]	104	11.1%

	Undergraduates	[Acad Qual=3.00]	309	33.0%
	Graduates	[Acad Qual=4.00]	388	41.5%
	Ph.D.	[Acad Qual=5.00]	26	02.8%
Employee Status	Business	[Emply Status=1.00]	61	06.5%
	Employee	[Emply Status=2.00]	511	54.6%
	Retired	[Emply Status=3.00]	55	05.9%
	Student	[Emply Status=4.00]	309	33.0%
Employer	Do not apply	[C_Employer=1.00]	246	26.3%
	Government	[C_Employer=2.00]	288	30.8%
	Military	[C_Employer=3.00]	24	02.6%
	Private Sector	[C_Employer=4.00]	361	38.6%
	The charitable and non-profit sector	[C_Employer=5.00]	17	01.8%
Work Experience (in years)	1 to less than 5	[Work Exp=1.00]	508	54.3%
	5 to less than 10	[Work Exp=2.00]	212	22.6%
	10 to less than 15	[Work Exp=3.00]	98	10.5%
	15 to less than 20	[Work Exp=4.00]	45	04.8%
	More than 20	[Work Exp=5.00]	73	07.8%
Live	City (inhabited by 10000 to 1000000)	[Live=1.00]	216	23.1%
	Governorate (populated from 15000 to 100000)	[Live=2.00]	36	03.8%
	Large City (inhabited by more than 10000000 people)	[Live=3.00]	632	67.5%
	Small governorate (inhabited from 3000 to 15000)	[Live=4.00]	23	02.5%
	Village (inhabited by less than 3000)	[Live=5.00]	29	03.1%
Total Valid, Missing (0)			936	100.0%

Appendix B: Parameter Estimates For Moderate Risk (Score between 22-27)- Model I

Moderate-risk tolerant (22-27)[a]	β	Std. Error	Wald	0	Sig.	95% Confidence Interval for Exp (B)	
						Lower Bound	Upper Bound
Intercept	17.75	14864.78	0.000	1	0.999		
Gender	0.73	0.68	1.168	1	0.280	0.550	7.912
[Age=1]	8.76	14014.32	0.000	1	1.000	0.000	.[b]
[Age=2]	8.77	14014.32	0.000	1	1.000	0.000	.[b]

[Age=3.00]	25.18	14174.18	0.000	1	0.999	0.000	.[b]
[Age=4.00]	24.06	14609.33	0.000	1	0.999	0.000	.[b]
[Age=5.00]	0[c]	.	.	0	.	.	.
[Marital Status=1.00]	13.94	4259.47	0.000	1	0.997	0.000	.[b]
[Marital Status=2.00]	-1.17	1.35	0.755	1	0.385	0.022	04.388
[Marital Status=3.00]	1.60	0.81	5.201	1	0.021*	1.572	53.071
[Marital Status=4.00]	-.02	1.20	0.000	1	0.984	0.091	10.445
[Marital Status=5.00]	0[c]	.	.	0	.	.	.
[Monthly Income=1.00]	1.42	0.91	4.453	1	0.037*	0.699	24.762
[Monthly Income=2.00]	1.42	1.33	1.143	1	0.285	1.305	56.882
[Monthly Income=3.00]	18.24	3031.07	0.000	1	0.995	0.000	.[b]
[Monthly Income=4.00]	0[c]	.	.	0	.	.	.
[Acad Qual=1.00]	-15.77	6372.58	0.000	1	0.998	0.000	.[b]
[Acad Qual=2.00]	2.195	7072.05	0.000	1	1.000	0.000	.[b]
[Acad Qual=3.00]	-14.82	6372.58	0.000	1	0.998	0.000	.[b]
[Acad Qual=4.00]	-13.10	6372.58	0.000	1	0.998	0.000	.[b]
[Acad Qual=5.00]	0[c]	.	.	0	.	.	.
[Emply Status=1.00]	15.64	3810.03	0.000	1	0.997	0.000	.[b]
[Emply Status=2.00]	-.575	1.006	0.326	1	0.568	0.078	4.043
[Emply Status=3.00]	13.981	4547.225	0.000	1	0.998	0.000	.[b]
[Emply Status=4.00]	0[c]	.	.	0	.	.	.
[Employer=1.00]	0.11	1.67	0.004	1	0.948	0.042	29.505
[Employer=2.00]	0.85	1.61	0.278	1	0.598	0.099	55.810
[Employer=3.00]	-0.89	2.19	0.167	1	0.683	0.006	29.913
[Employer=4.00]	1.63	1.60	1.043	1	0.307	0.222	119.008
[Employer=5.00]	0[c]	.	.	0	.	.	.
[Work Exp=1.00]	-13.02	4016.53	0.000	1	0.997	0.000	.[b]
[Work Exp=2.00]	-13.18	4016.53	0.000	1	0.997	0.000	.[b]
[Work Exp=3.00]	1.46	5158.51	0.000	1	1.000	0.000	.[b]
[Work Exp=4.00]	1.24	6622.48	0.000	1	1.000	0.000	.[b]
[Work Exp=5.00]	0[c]	.	.	0	.	.	.
[Live=1.00]	1.95	0.91	4.615	1	0.032*	1.187	42.366
[Live=2.00]	18.87	6340.81	0.000	1	0.998	0.000	.[b]
[Live=3.00]	2.29	0.81	7.891	1	0.005*	2.003	49.497
[Live=4.00]	17.93	6796.20	0.000	1	0.998	0.000	.[b]
[Live=5.00]	0[c]	.	.	0	.	.	.

a. The reference category is 1.00.

b. Floating point overflow occurred while computing this statistic. Its value is therefore set to system missing.

c. This parameter is set to zero because it is redundant. *Significant at the level of 1% or 5%.

Appendix C Parameter Estimates For Above Average Risk (Score between 28-31)- Model II

Above-average risk-tolerant (28-31)[a]	β	Std. Error	Wald	df	Sig.	95% Confidence Interval for Exp(B)	
						Lower Bound	Upper Bound
Intercept	17.690	2.637	44.989	1	0.000		
Gender	-0.259	0.623	0.172	1	0.678	0.228	2.618
[Age=1.00]	1.292	2.023	0.408	1	0.523	0.069	191.783
[Age=2.00]	2.204	2.039	1.169	1	0.280	0.167	492.709
[Age=3.00]	2.375	2.015	1.389	1	0.239	0.207	558.420
[Age=4.00]	1.117	1.644	0.462	1	0.497	0.122	76.629
[Age=5.00]	0[b]	.	.	0	.	.	.
[Marital Status=1.00]	15.901	3636.919	0.000	1	0.997	0.000	.[c]
[Marital Status=2.00]	-2.842	1.064	7.130	1	0.008*	0.007	0.470
[Marital Status=3.00]	16.033	6895.191	0.000	1	0.998	0.000	.[c]
[Marital Status=4.00]	-1.583	0.800	3.915	1	0.048*	0.043	0.985
[Marital Status=5.00]	0[b]	.	.	0	.	.	.
[Monthly Income=1.00]	-0.425	0.813	0.273	1	0.601	0.133	3.220
[Monthly Income=2.00]	-2.726	1.060	5.876	1	0.011*	0.005	0.460
[Monthly Income=3.00]	-0.065	0.859	0.006	1	0.940	0.174	5.041
[Monthly Income=4.00]	0[b]	.	.	0	.	.	.
[Acad Qual=1.00]	0.384	1.417	0.073	1	0.787	0.091	23.613
[Acad Qual=2.00]	1.133	1.503	0.568	1	0.451	0.163	59.050
[Acad Qual=3.00]	0.800	1.421	0.317	1	0.574	0.137	36.014
[Acad Qual=4.00]	0.962	1.316	0.534	1	0.465	0.198	34.527
[Acad Qual=5.00]	0[b]	.	.	0	.	.	.
[Emply Status=1.00]	0-.801	1.148	0.488	1	0.485	0.047	4.254
[Emply Status=2.00]	0.299	.846	0.125	1	0.724	0.257	7.083
[Emply Status=3.00]	0.136	1.180	0.013	1	0.908	0.114	11.572

[Emply Status=4.00]	0[b]	.	.	0	.	.	.
[C_Employer=1.00]	-14.529	0.790	338.618	1	0.000	1.042	2.303
[C_Employer=2.00]	-15.821	0.621	649.034	1	0.000	3.980	4.546
[C_Employer=3.00]	-16.901	1.455	134.872	1	0.000	2.638	7.921
[C_Employer=4.00]	-15.311	0.587	265.240	1	0.000	2.242	2.242
[C_Employer=5.00]	0[b]	.	.	0	.	.	.
[Work Exp=1.00]	-0.826	1.248	0.438	1	0.508	0.038	5.049
[Work Exp=2.00]	0.964	1.536	0.394	1	0.530	0.129	53.170
[Work Exp=3.00]	16.033	2158.145	0.000	1	0.994	0.000	.[c]
[Work Exp=4.00]	-1.391	1.112	1.563	1	0.211	0.028	2.202
[Work Exp=5.00]	0[b]	.	.	0	.	.	.
[Live=1.00]	0.550	0.994	0.306	1	0.580	0.247	12.157
[Live=2.00]	16.601	3422.351	0.000	1	0.996	0.000	.[c]
[Live=3.00]	0.865	0.932	0.862	1	0.353	0.382	14.765
[Live=4.00]	-0.844	1.501	0.316	1	0.574	0.023	8.141
[Live=5.00]	0[b]	.	.	0	.	.	.
a. The reference category is 1.00. *Significant at the level of 1% or 5%.							
b. This parameter is set to zero because it is redundant.							
c. Floating point overflow occurred while computing this statistic. Its value is therefore set to system missing.							

Appendix D: Parameter Estimates For High Tolerance Risk (Score between 32-46)- Model III

High Tolerance (32-46)[a]	β	Std. Error	Wald	df	Sig.	95% Confidence Interval for Exp(B)	
						Lower Bound	Upper Bound
Intercept	0.095	2.478	0.001	1	0.970		
Gender	-0.089	0.407	0.047	1	0.828	0.412	2.032
[Age=1.00]	-1.431	1.831	0.611	1	0.434	0.007	8.646
[Age=2.00]	-1.965	1.823	1.162	1	0.281	0.004	4.991
[Age=3.00]	-2.666	1.817	2.153	1	0.142	0.002	2.448
[Age=4.00]	-1.286	1.509	0.726	1	0.394	0.014	5.321
[Age=5.00]	0[b]	.	.	0	.	.	.
[Marital Status=1.00]	-16.678	5027.450	0.000	1	0.997	0.000	.[c]
[Marital Status=2.00]	1.853	0.793	5.468	1	0.019*	1.350	30.162
[Marital Status=3.00]	-1.161	0.652	5.214	1	0.015*	1.297	27.297
[Marital Status=4.00]	0.673	0.578	1.356	1	0.244	0.631	6.087

[Marital Status=5.00]	0[b]	.	.	0	.	.	.
[Monthly Income=1.00]	-0.177	0.597	0.088	1	0.766	0.260	2.697
[Monthly Income=2.00]	-0.719	0.700	1.055	1	0.304	0.123	1.922
[Monthly Income=3.00]	-0.618	0.779	0.629	1	0.428	0.117	2.482
[Monthly Income=4.00]	0[b]	.	.	0	.	.	.
[Acad Qual=1.00]	0.545	1.214	0.202	1	0.653	0.160	18.613
[Acad Qual=2.00]	-0.816	1.284	0.404	1	0.525	0.036	5.477
[Acad Qual=3.00]	-0.323	1.208	0.072	1	0.789	0.068	7.721
[Acad Qual=4.00]	-0.762	1.164	0.429	1	0.513	0.048	4.570
[Acad Qual=5.00]	0[b]	.	.	0	.	.	.
[Emply Status=1.00]	0.025	0.945	0.001	1	0.979	0.161	6.538
[Emply Status=2.00]	0.060	0.593	0.010	1	0.920	0.332	3.395
[Emply Status=3.00]	-0.106	1.002	0.011	1	0.916	0.126	6.414
[Emply Status=4.00]	0[b]	.	.	0	.	.	.
[C_Employer=1.00]	-0.586	1.272	0.212	1	0.645	0.046	6.730
[C_Employer=2.00]	0.040	1.235	0.001	1	0.974	0.093	11.702
[C_Employer=3.00]	0.579	1.494	0.150	1	0.698	0.095	33.337
[C_Employer=4.00]	-0.823	1.240	0.441	1	0.507	0.039	4.988
[C_Employer=5.00]	0[b]	.	.	0	.	.	.
[Work Exp=1.00]	0 .873	1.092	0.639	1	0.424	0.281	20.367
[Work Exp=2.00]	0.556	1.154	0.232	1	0.630	0.182	16.749
[Work Exp=3.00]	-0.451	1.410	0.102	1	0.749	0.040	10.107
[Work Exp=4.00]	1.543	1.052	2.151	1	0.142	0.595	36.775
[Work Exp=5.00]	0[b]	.	.	0	.	.	.
[Live=1.00]	-1.305	0.633	4.258	1	0.039*	0.078	0.937
[Live=2.00]	-1.793	1.199	2.237	1	0.135	0.016	1.745
[Live=3.00]	-1.622	0.577	7.917	1	0.005*	0.064	0.611
[Live=4.00]	-1.015	1.217	0.696	1	0.404	0.033	3.934
[Live=5.00]	0[b]	.	.	0	.	.	.
a. The reference category is 1.00. *Significant at the level of 1% or 5%.							
b. This parameter is set to zero because it is redundant.							
c. Floating point overflow occurred while computing this statistic. Its value is therefore set to system missing.							

Appendix E: Descriptive Statistics for all the FRT score

Items	N	Mean	Std. Deviation	Variance	Skewness	Std. Error of Skewness	Minimum	Maximum
Item1	936	2.611	0.841	0.708	-0.104	0.08	1	4
Item2	936	2.522	1.0534	1.110	0.084	0.08	1	4
Item3	936	2.277	1.002	1.005	0.118	0.08	1	4
Item4	936	2.004	0.573	0.329	0.000	0.08	1	3
Item5	936	2.097	0.768	0.591	-0.167	0.08	1	3
Item6	936	1.901	0.589	0.348	0.025	0.08	1	3
Item7	936	1.879	0.871	0.759	0.236	0.08	1	3
Item8	936	2.644	0.919	0.845	-0.189	0.08	1	4
Item9	936	2.404	0.733	0.539	-0.800	0.08	1	3
Item10	936	1.524	0.499	0.250	-0.099	0.08	1	2
Item11	936	2.161	0.757	0.574	-0.278	0.08	1	3
Item12	936	2.227	0.928	0.863	0.352	0.08	1	4
Item13	936	1.746	0.854	0.730	0.973	0.08	1	4
Item14	936	2.564	1.039	1.080	-0.154	0.08	1	4
Item15	936	1.790	0.574	0.330	0.038	0.08	1	3
Item16	936	1.972	1.000	1.00	0.056	0.08	1	3
Item17	936	2.331	0.944	0.891	-0.703	0.08	1	3
Item18	936	2.476	1.100	1.210	0.12	0.08	1	4
Item19	936	1.646	0.693	0.481	0.603	0.08	1	3
Item20	936	2.210	0.954	0.911	0.316	0.08	1	4

Appendix F Total FRT Score Regression Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
(Constant)	44.920	2.443			0.000
Gender	-1.369	0.454	-0.104	-3.019	0.003*
Age	-0.600	0.302	-0.094	-1.987	0.047*
Marital Status	0.107	0.260	0.015	0.410	0.682
Monthly Income	0.065	0.210	0.012	0.308	0.758
Acad Qual	0.442	0.217	0.073	2.033	0.042*
Employ Status	-0.036	0.283	-0.006	-0.127	0.899
Employer	0.083	0.191	0.017	0.433	0.665

Working	0.166	0.095	0.058	1.753	0.080*
Work Exp	0.102	0.219	0.020	0.465	0.642
Live	-0.350	0.210	-0.054	-1.665	0.096*

a. Dependent Variable: Total FRT Score

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.173[a]	0.030	0.019	6.21224	0.030	2.845	10	925	0.002	1.993

a. Predictors: (Constant), Live, Age, Working, Gender, Acad Qual, C_Employer, Marital Status, Monthly Income, Work Exp, Emply Status

b. Dependent Variable: Total FRT Score

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1098.107	10	109.811	2.845	0.002[b]
	Residual	35697.547	925	38.592		
	Total	36795.654	935			

a. Dependent Variable: Total FRT Score *1%,5% or 10% significance level

b. Predictors: (Constant), Live, Age, Working, Gender, Academic Qualification, Employer, Marital Status, Monthly Income, Work Experience, Employee Status