



The Effect of Demographic Characteristics and Personality Traits on Financial Risk Tolerance. A Case Study of Lower Dir

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ABSTRACT

This research investigates the intricate relationships between financial risk tolerance, personality traits, and demographic characteristics among investors in Lower Dir. By acknowledging the crucial role of these factors in shaping investment decisions, our analysis of 284 participants' data reveals that age, education, conscientiousness, and neuroticism significantly impact financial risk tolerance. On the other hand, gender, monthly income, openness to experience, and agreeableness show weaker or insignificant associations. These findings provide essential insights for devising effective financial planning and investment strategies. To further explore these relationships, future research should consider longitudinal or experimental approaches and larger sample sizes.

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1. Introduction

The advancement of technology in financial markets has led to the emergence of complexities that make it difficult to accurately measure and understand the factors that influence individuals' tolerance for financial risk. As investors navigate economic uncertainty and investment opportunities, their risk preferences play a crucial role in determining their financial well-being and the choices they make regarding their investment portfolios.

The prominence of finance theories grounded in neoclassical economics, which emphasize wealth maximization, rational behavior, and the efficient market hypothesis, has been waning. In 1952, Markowitz pioneered the idea of complete rationality in portfolio selection, aligning it with the efficient market hypothesis. Fama subsequently contended that markets are efficient when stock prices entirely reflect available information (1970). These theories presumed that individuals make rational financial decisions. However, behavioral

finance challenges this notion, positing that laypeople's financial choices are swayed by cognitive biases and emotions (Kahneman & Tversky, 2013).

These seminal propositions prompted a paradigm shift, leading researchers to develop a new framework that incorporates the behavioral aspects of individuals into financial decision-making. This framework, enriched by the integration of neuroscience and psychology, includes various behavioral concepts such as personality and demographics. Scholars like Almlund, Duckworth, Heckman, and Kautz (2011), along with Rustichini, DeYoung, Anderson, and Burks (2016), have explored the influence of personality traits on investment decision-making. Additionally, Rizwanulhassan, Mehboob, Hussain, and Ali (2021) posit a positive link between investment choices and personality characteristics. These diverse individual traits reflect personality dimensions and demographics, including age, sex, income, and marital status, as explored by Grable (1997), Bergkamp, Impa, Asebedo, Fritz, and Jagadish (2018), and (Mehmood, Akhter, Sadiq, Sultan, & Akbar, 2019).

Understanding the intricate relationship between financial risk tolerance, personality traits, and demographic characteristics is crucial for investors, financial advisors, and policymakers. Establishing a tailored framework for comprehending this relationship can empower individuals to make informed and healthy financial decisions. In light of these considerations, this study aims to investigate and delineate the specific objectives guiding our exploration of these complex interactions.

The objectives of this study were to check whether demographics characteristics and personality dimensions have impact on financial risk tolerance of individual.

2. Literature Review

2.1. Theoretical Review

The theoretical literature review focuses on psychological factors, specifically the "big five" personality traits and demographic characteristics, and their impact on individual investors' risk tolerance. Through an in-depth analysis of empirical findings and methodologies employed by researchers, the review aims to delineate the significance of dependent and independent variables. The ultimate objective is to discern the relative importance of these factors, leading to the development of a proposed theoretical or conceptual framework. The synthesis of this information will contribute to identifying and addressing research gaps within the current body of knowledge.

2.1.1.A Behavioral Finance Approach Toward Risk

Financial decisions inherently carry the risk of not yielding anticipated returns. Financial risk tolerance, as defined by Prabhakaran and Karthika (2011), reflects an individual's capacity and willingness to embrace a certain level of risk. Alternatively, Hallahan, Faff, and McKenzie (2004) describe risk tolerance as an individual's attitude toward variance in expected returns. According to Grable and Roszkowski (2007), risk tolerance exhibits both stable and variable characteristics, akin to blood groups or changing moods. Consequently, relying solely on this trait for investment planning may not be productive. Those inclined toward risk-taking often embrace uncertainty, while individuals with conservative risk attitudes prefer certainty (Grable, 2000).

2.1.2. Prospect Theory

Prospect Theory, introduced by Kahneman and Tversky (1979), is a prominent behavioral framework challenging Expected Utility Theory (EUT). Unlike EUT, Prospect Theory employs a value function to describe gains and losses in terms of value rather than utility. The value function is convex and steep for losses, while concave but less steep for gains. A key

insight is that an individual's risk tolerance is influenced by how a situation is framed. Choices framed as gains tend to evoke risk-averse behavior, while the same choices framed as losses often lead to risk-seeking tendencies, highlighting the impact of framing on decision-making.

2.2. Demographic Determinants of Financial Risk Tolerance

The following demographic characteristics have been explored through various studies in response to risk tolerance.

2.2.1. Risk Tolerance and Gender Differences

Ho, Milevsky, and Robinson (1994) suggested that women might incline towards riskier assets in their portfolios due to longer life expectancies. However, Gilliam, Chatterjee, and Zhu (2010); Powell and Ansic (1997), and Barber and Odean (2001) consistently indicate that, overall, women exhibit lower risk tolerance compared to men. This lower risk tolerance is reflected in various financial behaviors, including asset allocation and stock trading. Financial consultants, such as Wang and Hanna (1997), support the notion that women tend to be more conservative in portfolio selection. Consequently, differences in risk attitudes contribute to variations in wealth accumulation between men and women, with women often being more conservative in their financial decisions.

2.2.2. Age and Risk Tolerance

The common assumption that risk tolerance decreases with age is grounded in the belief that older investors, due to uncertainties related to age, tend to avoid risky investments (Grable, 1997). Hallahan et al. (2004) attribute this decline in risk-taking to biological changes associated with aging. However, the relationship between age and risk tolerance is not universally agreed upon. Jianakoplos and Bernasek (2006) found a negative correlation between financial risk tolerance and age. In contrast, Hanna and Lindamood (2004) reported a positive relationship, suggesting that younger individuals, with more time to recover from potential losses, are more willing to engage in riskier ventures, such as real estate investments, for higher returns. Younger investors, often in their early adulthood or mid-career stage, typically exhibit higher risk tolerance.

2.2.3. Marital Status

Marital status is a significant factor influencing individual risk tolerance (Grable, 2000). However, literature on this topic is limited. Generally, it is believed that compared to married individuals, singles tend to be more risk-tolerant, attributed to fewer household responsibilities (Grable & Lytton, 1999; Grable & Lytton, 2001; Yao & Hanna, 2005). Faff, Mulino, and Chai (2008) found that single individuals exhibit more aggressive risk-taking behavior than married couples, although they question the practical significance of this relationship. Ardehali, Paradi, and Asmild (2005) reported that singles are more aggressive in risk-taking, suggesting that monetary loss affects married couples more than singles. Chaulk, Johnson, and Bulcroft (2003) proposed that married couples' risk tolerance decreases due to increased dependents, future commitments, and the need for wealth protection.

2.2.4. Education

Education, similar to marital status, moderately influences risk tolerance. In the financial context, education, as defined by Masters and Lambert (1989), refers to the formal degree certificates attained by individuals. Generally, there is a belief in a positive and significant relationship between education and risk tolerance. Numerous studies have found that a higher level of education contributes to increased analytical abilities, leading individuals

to analyze risk and return more effectively, ultimately enhancing their level of risk tolerance (Ardehali et al., 2005; Hallahan et al., 2004; Hawley & Fujii, 1993).

2.2.5. Employment Status

Employment status is a recognized factor influencing risk tolerance, with a general belief that employed individuals tend to exhibit higher risk tolerance than those who are not employed. This can be attributed to their disposable income, providing them with the capacity for more risk-taking (Chattopadhyay & Dasgupta, 2015). Employed individuals often benefit from a stable income source, positively impacting their financial risk tolerance. Conversely, retired individuals may experience a shift in their risk tolerance during the transition from an income-earning phase to a wealth preservation phase. In retirement, there might be a tendency to become more risk-averse in real estate investments to ensure financial security (Ameriks, Caplin, & Leahy, 2003).

2.2.6. Income and Financial Risk Tolerance

Individuals with higher income levels are generally more risk-tolerant, as they have the financial capacity to allocate a portion of their income to pursue real estate investments for potential wealth maximization (Kannadhasan, 2006). Sulaiman (2012), suggests that higher-income investors have access to spontaneous resources for their obligations, allowing them to take on higher risks due to disposable income. Wealth and income are considered influential components with a significant positive impact on risk tolerance. Individuals with lower income levels are generally regarded as having lower risk tolerance, while the opposite holds true for those with higher income levels (Grable, 1997).

2.3. Personality Traits and Risk Tolerance

Raheja and Dhiman (2017) explain that the term "personality" originates from the Latin word "Persona," symbolizing the way one speaks, thinks, and fundamentally influences human behavior. In essence, personality encapsulates the distinctive characteristics that differentiate individuals in their actions and expressions.

This section of the literature focuses on the Big Five traits of personality in relation to financial risk tolerance.

2.3.1. Agreeableness and Financial Risk Tolerance

Agreeableness, as one of the most enduring personality traits, significantly influences individual decision-making and risk tolerance. Individuals characterized by agreeableness traits, encompassing straightforwardness, warmth, modesty, and forgiveness Ahmad and Maochun (2019), are respected for considering others' opinions and advice. Sadiq and Akhtar (2019) emphasize that agreeable individuals often accept financial analyst judgments and advice, finding personal decision-making challenging. Pak and Mahmood (2015) similarly note that investors high in agreeableness may struggle with independent financial decision-making, often aligning with financial analyst opinions.

2.3.2. Extraversion and Risk Tolerance of Individual

Mendoza, Padernal, Pante, Magbata, and Mandigma (2023), research highlights that individuals with extraversion traits are sociable, energetic, and actively engage with the world. They value others' opinions as valuable sources of information, and this personality trait is associated with risk tolerance and certain behaviors. According to Pak and Mahmood (2015), extroverted individuals exhibit friendly and sociable behaviors, with positive attitudes towards life and events. However, their inclination to overlook rationality and principles may lead to

overestimating market trends and underestimating risks. Almlund et al. (2011) define extraversion as an orientation towards the external world, marked by positive affect and sociability. Sadi, Asl, Rostami, Gholipour, and Gholipour (2011) note that extroverted individuals focus on external elements, shaping their actions based on external influences rather than personal reflection. Pak and Mahmood (2015) support this, suggesting that extroverted investors may overestimate gains and underestimate losses due to their optimistic nature and its impact on risk tolerance.

2.3.3. Conscientiousness and Risk Tolerance

Conscientiousness, a personality trait characterized by organization, responsibility, and dependability, reflects individuals who are self-disciplined, hardworking, and reliable, motivated to achieve their goals and fulfill duties (John & Srivastava, 1999). This trait is stable over time and associated with positive outcomes in academics, career success, health, and reduced risky behavior (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). Conscientiousness significantly impacts various aspects of life, including job performance, relationships, and mental health (Roberts et al., 2007; Tett, Jackson, Rothstein, & Reddon, 1994).

2.3.4. Openness to Experience and Financial Risk Tolerance

Openness to experience, a personality trait reflecting an individual's readiness to explore new ideas, values, and experiences, has become a subject of interest in understanding its relationship with financial risk tolerance. Financial risk tolerance pertains to an individual's readiness to take financial risks for potential higher returns. Academic literature suggests a positive correlation between openness to experience and financial risk tolerance. Studies, such as the one by Hamza and Arif (2019), discovered that individuals with higher levels of openness to experience tended to exhibit higher financial risk tolerance. Similarly, research by Fisher and Statman (2003) found that individuals with higher openness levels were more inclined to invest in high-risk, high-reward assets like stocks and mutual funds. However, it's worth noting that other studies have reported mixed or no clear relationship between openness to experience and financial risk tolerance.

2.3.5. Neuroticism and Financial Risk Tolerance

Neuroticism, a personality trait characterized by anxiety, worry, and emotional instability, is consistently associated with a negative correlation with financial risk tolerance. Various studies support this relationship, demonstrating that individuals with higher levels of neuroticism tend to exhibit lower levels of risk-taking behavior in financial decision-making. For instance, Baker, Kumar, and Goyal (2021) found such a pattern, where heightened neuroticism was linked to reduced risk-taking behavior. Additionally, neuroticism was identified as significant factors influencing individuals' behavior in the experimental asset market, according to the findings of (Oehler, Wendt, Wedlich, & Horn, 2018). Kumar, Mishra, Saxena, Singh, and Kumar (2020) reported a negative association between neuroticism and investment risk-taking behavior, with individuals high in neuroticism preferring safer investment options like fixed deposits and savings accounts.

2.4. Empirical Studies

In their study, Shah, Khalid, Khan, Arif, and Khan (2020) examined the impact of demographic factors on financial risk tolerance among Pakistani business graduates. Using a survey-based approach, they found that age, income, and education level were significantly associated with risk tolerance, with older individuals, those with higher income and education levels exhibiting lower levels of risk tolerance.

Shusha (2017) examined the role of financial literacy in the relationship between demographic characteristics and risk tolerance. They found that financial literacy partially mediated the relationship between age, education level, and risk tolerance among Korean adults. Another study by Kalabalik and Aren (2018) investigated the relationship between personality traits and financial risk-taking among Turkey's investors. Using a sample of professional investors, they found that individuals who were more open to experience and less agreeable tended to exhibit higher levels of financial risk-taking. A study by Norvilitis et al. (2006) examined the relationship between financial risk tolerance and several demographic and psychological factors among college students in the US. They found that age, gender, and sensation-seeking tendencies were significant predictors of financial risk tolerance among college students. Lee, Kim, Lee, and Kim (2019) explored the impact of demographic and psychological factors on investment behavior among Korean adults. They found that age, income, education level, financial literacy, and extraversion were significant predictors of investment behavior, with older, more highly educated individuals, those with higher income, higher levels of financial literacy, and those who were more extraverted exhibiting higher levels of investment behavior.

In their study, Rabbani, Yao, and Wang (2019) aimed to assess whether the risk tolerance of pre-retiree baby boomers, aged 54–61 in America in 2019, could be predicted by their personality traits. The results revealed a significant association between risk tolerance and the Big Five Personality Traits. More specifically, individuals with higher levels of extraversion, emotional stability, and openness to experience tended to exhibit increased risk tolerance. Conversely, those demonstrating higher degrees of agreeableness and conscientiousness were associated with reduced risk tolerance among pre-retiree baby boomers.

Overall, these studies suggest that demographic characteristics and personality traits can play important roles in shaping individuals' financial risk tolerance and investment behavior. While age, income, and education level are consistently identified as significant predictors of risk tolerance, the role of personality traits in shaping risk tolerance and investment behavior appears to be more complex, with different traits showing different associations with these outcomes depending on the context and population studied.

2.5. Literature Gap

The literature review identifies a research gap in understanding the interplay between psychological and demographic factors in shaping financial risk tolerance and investment behavior. While existing studies focus on specific cultural contexts, there is a need for broader research across cultures. Demographic factors like age, gender, education, income, and marital status, alongside personality traits, require more comprehensive exploration. Longitudinal studies are advocated to uncover causal relationships over time. Additionally, there's a call for research on individual differences in risk perception, cognitive biases, and decision-making processes impacting financial behavior. This synthesis emphasizes a multifaceted research agenda to enhance our understanding across diverse cultural and individual contexts.

3. Methodology and Materials

3.1. Research Design and Approaches

To explain the relationship between financial risk tolerances, personality dimensions, and demographic characteristics, explanatory research design was chosen as during this study.

3.1.1. Population

In this study, the target population comprises all active individual investors in the real estate industry located solely in Lower Dir. There were 980 real estate individual investors

identified as the target population for this research, the numbers of real estate investors were investigated by the researcher through interviews with real estate marketing companies' managers working in Lower Dir.

Source: (Topline marketing private limited, albait marketing and Leaf Marketing pvt ltd).

Slovin's formula was used to determine the appropriate sample size (n) based on the known population size (N) and the acceptable margin of error (e). By using this formula, one can calculate the necessary sample size needed from the target population

$$(n) = \frac{N}{1 + N(e^2)} \quad (1)$$

$$(n) = \frac{980}{1 + 980(.05)}$$

$$= 284$$

(n) = sample size, N = population, e = .05

The researcher utilized primary data from individual investors to gather pertinent information for the study. The data collection process involved administering closed-ended adopted questionnaires taken from the study of Aleka (2020) with his consent. To determine the influence of personality traits and demographic characteristics on the risk tolerance of individual investors.

3.1.2.Data Collection Tool

To collect the primary data for this research study, the self-administered questionnaire adopted by Aleka (2020) was chosen as the main data collection tool. The tool is already cached for validity and reality by Aleka (2020). For reliability, the cited scholar used Cronbach's alpha. The questionnaire is adopted from the cited scholar and has closed-ended questions. The first questionnaire is about individual demographic characteristics. The second part of the questionnaire is related to personality traits measured through Likert-Scale ranging from strongly disagree to strongly agree (Aleka, 2020). Included 24 questions concerning measuring personality traits from previous studies (Mayfield, Perdue, & Wooten, 2008; Pak & Mahmood, 2015).

Table 1.
Cronbach's Alpha Test Result

Study's Variables	No Of Item	Cronbach's Alpha
Extraversion	5	0.900
Openness To Experience	4	0.935
Conscientiousness	5	0.925
Agreeableness	5	0.920
Neuroticism	5	0.920

Source; Aleka (2020)

3.1.3.Validity of the tool

For validity check the scholar has already mentioned that he picked the instrument from Aleka (2020), who adopted the same questionnaire with some modification from Mayfield et al. (2008); Pak and Mahmood (2015) the reliability and validity of the instrument has already been established by the cited scholars.

4. Result and Discussion

In this section, we present an overview of the demographic characteristics of the participants, encompassing gender, age, marital status, education level, and net annual income of individual investors. To convey this information effectively, a descriptive statistics table is utilized, providing frequencies and percentages for each demographic feature.

4.1. Demographic Characteristics of the Respondents

The demographic profile of real estate investors in Lower Dir, as presented in Table 2, reveals several key trends. The majority of respondents are male (70.1%), indicating a male-dominated society where women's participation in investment is limited, possibly due to traditional familial responsibilities. Nevertheless, the study acknowledges a noteworthy 29.9% female investor representation. The age distribution of investors highlights a concentration in the 20-45 age group (76.4%), reflecting an economically active population. Married individuals constitute 56% of respondents, suggesting a correlation between familial responsibilities and economic participation. Education levels also play a role, with 39.4% holding master's or higher degrees, emphasizing the connection between education and investment awareness. Lastly, the income distribution indicates that a significant portion of respondents (44.7%) have a monthly income less than or equal to Rs. 50,000, while 74.4% report adequate monthly income, creating favorable conditions for investment.

Table 2
Respondents' Demographic Characteristics

Variables	Category	Frequency	Percent	Cumulative
Sex	Male	199	70.1	70.1
	Female	85	29.9	100.0
	Total	284	100	
Age	Less than 30	115	40.5	40.5
	31-45	102	35.9	76.4
	46-60	51	18	94.4
	60 and above	16	5.6	100.0
	Total	284	100.0	
	Single	114	40.1	40.1
	Married	159	56	96.1
Marital status	Divorced	11	3.9	100.0
	Total	284	100.0	
Education level	Master and above	112	39.4	39.4
	Bachelor	114	40.1	79.6
	Intermediate	37	13	92.6
	Matriculate	21	7.4	100
	Total	284	100.0	
	50000 and less	127	44.7	44.7
	51000-100000	83	29.2	73.9
Monthly Income	101000- 150000	46	16.2	90.1
	151000-200000	28	9.9	100
	Total	200	100.0	

4.2. Descriptive Statistics About Personality Traits

This section includes descriptive statistics of personality dimensions. The responses of the participants to each personality dimension's question have been tabulated below. The normality assumption was violated hence we computed the Median from all the questions about each personality dimension.

4.2.1. Descriptive Statistics of Extroversion

Table 3 presents the descriptive statistics related to the extroversion dimension of the respondents' personalities. The median approach was employed to gauge extroversion across different statements. The findings reveal that a small proportion, 7.4%, strongly disagree with extroversion, while 14.8% express disagreement. Conversely, a substantial portion, 43.3%, agrees, and an additional 16.2% strongly agree with the extroversion dimension. This suggests that investors in Lower Dir exhibit a sociable and warm attitude, emphasizing their capacity to build and maintain relationships. Notably, these individuals seem less influenced by rationality

principles, indicative of a social orientation that values connections over strict rationality. The data also indicates that these investors actively engage in expanding their social circles, finding it easy to forge and sustain relationships, thereby accumulating diverse information from a variety of sources.

Table 3.
Descriptive Statistics of Extroversion

Responses	Frequency	Percent	Cumulative
Strongly Disagree	21	7.4	7.4
Disagree	42	14.8	22.2
Neutral	46	16.2	38.4
Agree	123	43.3	81.7
Strongly Agree	52	18.3	100
Total	284	100	

4.2.2. Descriptive Statistics of Openness to Experience

Table 4. provides descriptive statistics on the openness to experience dimension of the personality traits of respondents in Lower Dir. The data reveals that 7.4% strongly disagree and 20.4% disagree with this personality trait. In contrast, a significant portion, 17.3%, remains neutral, while 35.9% and 26.4% agree and strongly agree, respectively, with the openness to experience dimension. The overall pattern indicates that more than half of the investors in Lower Dir express agreement with or strong agreement to this personality trait. The conclusion drawn from the results suggests that investors in the region have a propensity for embracing new experiences, exuding confidence, and possessing a self-assured demeanor. Furthermore, they demonstrate an unconventional approach, relying on creative ideas rather than conforming to conventional wisdom or relying solely on a wealth of information.

Table 4.
Descriptive Statistics of Openness to Experience

Responses	Frequency	Percent	Cumulative
Strongly Disagree	21	7.4	7.40
Disagree	37	13	20.4
Neutral	49	17.3	37.7
Agree	102	35.9	73.6
Strongly Agree	75	26.4	100
Total	284	100	

4.2.3. Descriptive Statistic of Agreeableness

Table 5. presents the descriptive analysis of the agreeableness trait of personality among investors in Lower Dir. On average, 4.9% strongly disagree and 8.8% disagree with agreeableness, while 23.9% remain neutral. A noteworthy 41.5% agree, and 20.8% strongly agree with this dimension.

Table 5
Descriptive Statistic of Agreeableness.

Responses	Frequency	Percent	Cumulative
Strongly Disagree	14	4.9	4.9
Disagree	25	8.8	13.7
Neutral	68	23.9	37.7
Agree	118	41.5	79.2
Strongly Agree	59	20.8	100
Total	284	100	

The data indicates that slightly more than half of the investors in Lower Dir express agreement with or strong agreement to the agreeableness trait. This suggests that a significant

portion of individuals in the region are characterized by agreeableness, demonstrating a willingness to listen to others and consider alternative opinions in their decision-making processes. The prevalence of this personality trait may play a role in shaping the collaborative and cooperative aspects of their financial decision-making, influencing their overall financial risk tolerance and investment strategies.

4.2.4.Descriptive Statistic of Conscientiousness

Table 6 provides a descriptive analysis of the conscientiousness trait among investors in Lower Dir. The data shows that 4.2% strongly disagree, 7.7% disagree, and 22.2% remain neutral on conscientiousness. On the positive side, 41.9% agree, and 23.9% strongly agree with this personality trait. These results suggest that a substantial majority of investors in Lower Dir exhibit conscientiousness, emphasizing a calculated and strategic approach to decision-making. This trait indicates a tendency for self-control, careful planning, and organized resource management in their investment strategies. The prevalence of conscientiousness among these investors may significantly shape their financial risk tolerance and contribute to a methodical and disciplined approach to managing their investments in the region.

Table 6.
Descriptive Statistic of Conscientiousness

Responses	Frequency	Percent	cumulative
Strongly Disagree	12	4.2	4.2
Disagree	22	7.7	12
Neutral	63	22.2	34.2
Agree	119	41.9	76.1
Strongly Agree	68	23.9	100
Total	284	100	

4.2.5.Descriptive statistic of Neuroticism

Table 7 provides descriptive statistics on the neuroticism trait among investors in Lower Dir. The data reveals that 12% strongly disagree and 23.6% disagree with this trait, while 27.5% remain neutral. On the positive side, 28.5% agree, and 8.5% strongly agree with neuroticism. The results suggest that a significant majority of individuals in the study exhibit a tendency toward emotional stability, as indicated by their responses of strongly disagree, disagree, or neutral regarding neuroticism. This emotional stability may play a crucial role in shaping their overall financial risk tolerance, as demonstrated in Table 4.8, where a notable portion of investors in Lower Dir displays an inclination towards higher levels of financial risk-taking, potentially influenced by their emotional resilience and stability.

Table 7
Descriptive statistic of Neuroticism

Responses	Frequency	Percent	Cumulative
Strongly Disagree	34	12	12
Disagree	67	23.6	35.6
Neutral	78	27.5	63.5
Agree	81	28.5	91.5
Strongly Agree	24	8.5	100
Total	284	100	

The relationship amid dependent and explanatory variables was measured through weighted least square (WLS), an analysis method based on multiple regression. Multi variate analysis method describes the relationship of dependent variable with many explanatory variables (Babbie, 2020). Its ranks the links amid variables (Babbie, 2020).

4.3. Empirical Results

In this section we analyzed the data gathered, descriptive as well as inferential statics were applied in order to check the trends and result of the data collected. OLS was opted to check the relationship between the dependent and explanatory variables although due to heteroscedasticity in data set WLS were used instead of OLS.

4.3.1. Diagnostic Test

Before applying the data were checked through following diagnostic statics to check whether the applied model will provide consistent result.

4.3.2. Test of Homoscedasticity and Heteroscedasticity

Bartlett's test was used to diagnose if the variance of the two or more groups are equal (homoscedastic) or unequal (heteroscedastic). The P value in our case is greater than threshold value hence the data is pointing heteroscedasticity. Hence, the assumption of homogeneity is violated. Similarly, Breusch-Pagan test was used to measure the degree of heteroscedasticity the P-Value of the provided test is very low and justify the Null hypothesis of the test.

Table 8.
Bartlett Test of Homoscedasticity and Breusch-Pagan Test Results.

Bartlett Statistic		Breusch-Pagan Test	
Test statistics	1.259	Test statistic	138.77
P-value	0.739	P-value	1.813e-27

4.3.3. Collinearity Diagnosis

For multicollinearity VIF was used the value of the test for each variable is less than threshold value of 5, indicating weak multicollinearity.

Table 9.
Variance Inflation Factor

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Extroversion	.807	1.239
Openness To Experience	.762	1.312
Agreeableness	.876	1.142
Conscientiousness	.763	1.310
Neuroticism	.983	1.017
Gender	.947	1.056
Marital status	.897	1.046
Education Level	.934	1.070
Monthly Income	.940	1.064

4.3.4. Regression Model Fit

The upper part of the regression table represents the fit of the regression model. The value of R square is 0.193 suggesting 19% variance is explained in predictor variables by explanatory variables. The probability of the test is very low explaining the model fitness and suggest good fitness of the model. Similarly, the lower part of the table also provides information about the model fitness. The data shown in the table. This portion consist of Durbin Watson test used to measure the autocorrelation in the data set, the value of the test is 1.9940 close to 2 pointing no auto correlation in the data. Similarly, Jarque Bera test is used to

guage normality of the data set the result of the test is 15 with P-Value .00043 suggesting abnormally distributed residuals. Moreover, the Omni-Bus test was also conducted to check model fitness the statistic and its concern P-Value suggest the model fit the data. Similarly, Kurtosis of the model which is greater than 3 shows that data does not have a perfect bell shape and possess a heavy tail.

Table 10.
WLS Regression Results with Non-robust Covariance

Dep. Variable:	Risk tolerance	R-squared:	0.193
		Adj.squared	0.164
Method:	Least Squares	F-statistic:	6.547
Prob (F-statistic)	4.46e-09		
Log-Likelihood:	460.54		
No. Observations:	284	AIC:	943
Df Residuals:	273	BIC:	983

	Coef.	std err	t	P> t	LCL	UCL
Age	-0.2184	0.073	-2.976	0.003	-0.363	-0.074
Gender	-0.0466	0.100	-0.465	0.642	-0.244	0.151
Marital status	0.1944	0.100	1.944	0.050	-0.002	0.391
Education level	0.1276	0.066	1.930	0.047	-0.003	0.258
monthly income	0.0314	0.068	0.463	0.644	-0.102	0.165
Extroversion	-0.2940	0.59	-4.953	0.000	-0.411	-0.177
openness to experience	0.0147	0.065	0.227	0.821	-0.113	0.142
Agreeableness	0.0926	0.065	1.432	0.153	-0.035	0.220
Conscientiousness	0.2411	0.069	3.494	0.001	0.105	0.377
Neuroticism	0.1336	0.059	2.263	0.024	0.017	0.250

The statistical condition of the model were			
Omnibus:	14.665	Durbin-Watson:	1.9940
Prob(Omnibus)	0.001	Jarque-Bera (JB):	15.635
Skew:	0.516	Prob(JB):	0.000403
Kurtosis:	3.507		

And UCL= Upper confidence level, LCL= Lower confidence level

The regression result show that three demographic variables such as age, marital status, and education level has significant relationship with financial risk tolerance and the rest of demographic like gender and monthly income variable have insignificant relationship with financial risk tolerance. Similarly, among personality traits three dimensions including Neuroticisms, Conscientiousness and extroversion have positive significant relation with predicted variable while the rest of the two-variable including agreeableness and openness to experiences have insignificant relationship with financial risk tolerance.

4.4. Results Discussion

According to analysis presented in Table number 4, age has a negative significant relationship with financial risk tolerance, it reveals that financial risk tolerance decrease with aging. The finding of this research that age and financial risk tolerance has a negative significant relationship is consistent with numerous studies. For instance, Lichtenstein and Slovic (1971) reported that younger individuals are more aggressive in risk-taking dilemmas, while older investors are risk-averse. According to the findings of this research, older investors are less likely to take substantial risks due to life expectancy as well as familial responsibilities. They take less risk due to the fear that will lose all their saving at once. Moreover, this declining trend in financial risk tolerance due to aging could be attributed that younger individual has more life expectancy and includes risky assets in their portfolio. The findings of this study about age and financial risk tolerance are also in line with many recent studies such as (Furnham & Cheng, 2017; Kable & Glimcher, 2007). Contrary to age gender has no

relationship with financial risk tolerance as indicated by the its coefficient and concern P-Value. The same result has also been reported by Raveendranath, Reddy, and Ahammad (2019). One possible reason for gender differences having no influence on financial risk tolerance could cultural and social norms. This trend of gender attitude toward financial risk tolerance can also be confirmed through various recent studies such as (Booth, Cardona-Sosa, & Nolen, 2014). While moving on to marital status the table 4 show that marital status has a marginal positive significant relationship with financial risk tolerance. The finding of this research regarding marital status and financial risk tolerance is consistent with numerous studies. For instance, according to AIGBOVO-OMORUYI and AIGBOVO (2020)' findings married individuals have had more comfortability with investment risk and financial knowledge. The finding regarding education level suggests that individual with higher education are more risk tolerant than those who are less educated. The finding of this study is consistent with studies carried out by (Bhattacharya, Dutta, & Kar, 2022; Nosita, Pirzada, Lestari, & Cahyono, 2020). One reason for these findings is that a higher level of education enhances one's financial literacy as well as knowledge which can enhance one's investment decisions. Additionally, individuals with a higher degree may have better job opportunities as well as higher income levels, which can provide greater financial security and makes them able to take significant financial risk. Monthly income on the other hand has no significant relationship with financial risk tolerance. One possible reason for this could be one's financial obligations which limit his/her freedom to think out of the box and take risky financial decisions. This can be affirmed by a study of (Owusu, Korankye, Yankah, & Donkor, 2023). Who reported that an individual's debt-to-income ratio is negatively associated with financial risk-taking. The author found that individuals with higher levels of debt relative to their income were less likely to take financial risks. The authors suggest that individuals' financial obligations constrained them to take substantial financial risks. Another possible reason for the insignificant result between financial risk tolerance and monthly income could be an individual lifestyle and their mates.

Personality plays a vital role in financial decision making. According to the finding of this study more extrovert have lower level of financial risk tolerance, and the relationship is significant. The finding of this study regarding extroversion and financial risk tolerance is consistent with (Mehregan, Hosseinzadeh, & Emadi, 2019). Conversely, openness to experiences does not significantly impact financial risk tolerance. There is a weak in significant relationship between openness to experiences and financial risk tolerance. The finding is consistent with several previous studies. The study by Furnham and Cheng (2017) is an excellent example of how there may not always be a clear correlation between openness to experience and financial risk tolerance. According to them, people who have high openness to experience tend to be more open to new ideas and experiences, this does not necessarily mean that they will take more financial risks. Similarly, agreeableness has a weak insignificant relationship with financial risk tolerance. Which is consistent with various previous studies performed by Mukhtar and Jan (2023). Finally, neuroticism has a positive significant relationship with financial risk tolerance. The result of this research regarding neuroticism and financial risk tolerance is consistent with various studies for example a study by Hanoch and Vitouch (2004) reported that individuals with high levels of neuroticism are more likely to engage in risky financial behavior. This may seem surprising given that neuroticism is typically linked to unfavorable feelings, anxiety, and a propensity to shun risks. There are, however, several interpretations that could apply to these findings. Firstly, it is probable that some people with high levels of neuroticism will practice risky financial behavior to deal with their worries or other unpleasant feelings. Finally, conscientiousness, has also positive significant relationship with financial risk tolerance. This means that individuals with a higher level of conscientiousness, are more willing to tolerate financial risk. Various previous studies are in line with the finding of this research regarding conscientiousness and financial risk tolerance. For example, a study by Furnham and Cheng (2017) reported that individuals who score high on conscientiousness tend to exhibit risky financial behavior. Similarly, Mukhtar and Jan (2023) Mukhtar and Jan, (2023) reported that individuals who are rich with conscientiousness were more likely to save for retirement and invest in long-term financial planning. Moreover, Boyce,

Wood, and Ferguson (2016) meta-analysis reported a positive significant relationship between financial risk tolerance and conscientiousness. One reason for this could be conscientious individuals are more organized, goal-oriented, and self-disciplined due to which they forecast the consequences of their actions and take a substantial amount of risk on their investments to achieve their financial goals.

5. Conclusion

The aim of this study was to investigate the relationship between financial risk tolerance, demographic characteristics and personality traits. 284 active real-estate investors were chosen as a sample of this study. The findings of this study is age, education, conscientiousness, and neuroticism have significant associations with financial risk tolerance, while gender, monthly income, openness to experience, and agreeableness do not have strong or significant relationships with it. These findings provide valuable insights into the factors influencing individuals' financial risk-taking behavior and can inform financial planning and investment strategies.

5.1. Implication of the Study

Understanding how demographic factors and personality traits influence financial risk tolerance has practical implications across various domains. Financial advisors can offer personalized advice, institutions can design targeted products, and policymakers can shape regulations to suit diverse risk profiles. Employers and educators can benefit from tailoring programs to specific groups, and marketers can refine strategies based on demographic and personality segments. Overall, this knowledge enhances decision-making in finance, product development, education, and regulation.

5.2. Future Recommendations

This study is cross-sectional future studies can apply longitudinal research to see how these relationships in detail. Similarly, the same findings can also be verified by experimental method. Moreover, this study has a small sample size one can proceed with large sample size.

Authors' Contribution:

Waqar: Write the introduction and data and methodology section.

Mukamil Shah: Contributed refining the research idea and scope and development of the study's research methodology.

Manzar Zia: Focused on reviewing the existing literature related to intellectual capital disclosure.

Conflict of Interest/Disclosures:

The authors declared that there is no potential conflicts of interest regarding the research, authorship, and/or publication of this paper.

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