Assessing Financial Risk Tolerance Level of Individual Investors: Do Demographic Factors Matter?

By

AIGBOVO-OMORUYI Osariemen
Department of Insurance
University of Benin,
Benin City, Edo State,
irabor.osariemen@uniben.edu
Nigeria; +2347037491449;

&

AIGBOVO Omoruyi
Department of Banking and Finance,
University of Benin,
Benin City, Edo State, Nigeria
omoruyi.aigbovo@uniben.edu
+2348027364552

Abstract

The paper investigates the influence of demographic factors such as gender, age, marital status, level of education, occupation, and income on the financial risk tolerance of individual investors in Nigeria. A survey research design was adopted and all the staff, students, and owners of business centers in the University of Benin who have invested in shares in the Nigerian Stock Market constitute the population of the study. The study targeted a convenient sample of 70 respondents through a snowball sampling technique (i.e., the first respondent was asked to recommend a colleague or friend who has invested in shares in the Nigerian Stock Market until the required sample is gotten). Out of the 70 questionnaires administered 60 were found usable. Analysis of data was carried out using a t-test, Analysis of variance (ANOVA), and regression. Statistical Package for Social Sciences (SPSS) version 22 was used to conduct all the analyses. The study found that the majority of respondents (investors) belong to the average/moderate risk tolerance group. Results of the t-Test and ANOVA analyses indicated that while there was a significant difference in financial risk tolerance levels according to gender and income, there were not meaningfully different in financial risk tolerance levels as to the age, marital status, educational level, and occupation. The regression analysis reveals that three demographic variables (gender, marital status, and income) significantly affect the financial risk tolerance level of individual investors. The study, therefore, recommends among others that financial service providers need to frame their products according to investors' risk-taking capacity which definitely will increase market efficiency as well as investors' confidence.

Keywords: *Financial Risk Tolerance, Demographic Factors, Individual Investor, Regression, Nigeria*

Introduction

Theories of traditional finance are founded on the conviction that individuals behave rationally and that all prevailing information is entrenched in the investment process. This conjecture is the foundation of the efficient market hypothesis. But scholars questioning this conjecture have proof that rational behavior is not at all times true. Behavioral finance tries to comprehend and clarify exactly how human emotions impact investors process of decision-making. Investors have diverse behaviors in making calculations regarding investment decisions. This investor behavior plays a great role in investing. Investor behavior itself is closely related to Financial Risk Tolerance (FRT) which is one of the most essential factors which affects the decision-making process of investors.

Financial risk tolerance refers to an investor's inclination towards risk and it can also be described as the extent of doubt or volatility on return on investment that an investor is prepared to take when investing (Grable & Lytton, 1999; Grable, 2000; Hallahan, Faff & McKenzie, 2003; Faff, 2008). FRT is the reciprocal of risk aversion. Risk aversion is an inclination for upholding a specific level of consumption over uncertain consumption even if the expected value of the uncertain consumption exceeds that of the level of certain wealth (Finke & Huston, 2003).

Investors who are less (more) risk-averse will have a higher (lower) financial risk tolerance. There is a direct nexus between anticipated return and risk aversion since investors anticipate a greater return for incurring risk. Consequently, risk aversion is mirrored on a risk premium, which comprises of an anticipated additional return that investors need to be rewarded for the risk of investing in financial assets. The general assumption is that people are largely risk-averse; nevertheless, it is also obvious that individuals differ greatly in the level of financial risk that they are prepared to take (Corter & Chen, 2006).

Risk tolerance is one of the most misconstrued ethics of investing and it is a complicated psychological concept. Every investor has his or her tolerance of and predisposition toward risk, thus an investment viewed as "high risk" by one investor may be viewed as "low risk" by another investor. Allocating investors to their proper risk tolerance group and thus proposing the most appropriate investment portfolios to them is an important assignment of investment advisors and managers. If an investment advisors know their customers' risk tolerance level, he/she can integrate this information into the selection of the appropriate portfolio (Hanna & Lindamood,

2004; Roszkowski & Grable, 2005a). An investment advisor who disregards risk tolerance is not likely to meet objectives or implement plans. Therefore, understanding and measurement of FRT are very vital to investment managers and advisors.

All investment choice conveys a definite level of risk, linked with its return. Risk in finance means the fluctuation in future returns that an investor has to endure to earn a return. Hence, the risk-taking capacity of the investors is directly linked with the return, which suggests that the higher the risk-taking capacity the higher will be the return. Therefore, some investors take high risks while some try to avoid the risk. Since financial risk tolerance is a complex attitude, different factors can influence one's attitude towards risk-taking choices. Researchers and investment advisors/managers and have long been concerned in answering the question "what factors influence the financial risk perception of individuals?" Extant literature proposes that an individual's psychological constructs and personality type, demographic and social-economic profile, and biological makeup are of prime importance when proffering solution to this question (Cesarini, Johannesson, Lichtenstein, Sandewall & Wallace, 2008; Filbeck, Hatfield & Horvath, 2005; Grable & Joo, 2000; Mayfield, Perdue & Wooten, 2008; Schooley & Worden, 1996).

Demographic factors are the most commonly studied FRT determinant. However, previous studies that have investigated the effect of demographic factors on the FRT of individual investors are mainly foreign bases and have documented mixed results. For instance, the study conducted by Sulaiman (2012); Kannadhasam (2015); Chattopadhyay and Dasgupta (2015); Rahmawati, Meyland, Farhan & Saqib (2015); Prabha (2016) and Ansari and Phatak (2017) confirmed that demographic variables such as occupation, gender, age, income, and education meaningfully affects FRT of investors. In contrast, the study carried out by Morin and Suarez (1983) reveals that age is negatively correlated with investors' financial risk tolerance. Similarly, the study conducted by McInish, (1982) Gehrels, (1991) Grable and Joo, (1999, 2000, and 2004), and Gibson, Michayluk & Van de Venter, (2013) show that gender, age, and marital status were not meaningfully linked with financial risk tolerance. To the best of researcher knowledge few or limited studies have investigated the effect of demographic factors on the financial risk tolerance of individual investors in Nigeria. Therefore, this study seeks to fill this void in knowledge.

In light of the above, the objectives of this paper are to empirically determine the financial risk tolerance level of investors and investigate the effect of demographic factors (gender, age,

marital status, educational level, occupation, and income) on the financial risk tolerance of individual investors in Nigeria.

The remainder of this paper is arranged as follows. Section two reviews the literature. This is accompanying by an explanation of methodology in section three. Afterward, the findings are presented in section four. Finally, section five concludes the paper.

Literature Review

Conceptual Literature

Risk Tolerance: According to Schaefer, (1978), the maximum amount of investment risk an investor is contented taking is known as investor risk tolerance. Schaefer (1978) further stated that two persons can decide on the riskiness of a set of gambles, but may however prefer gambles that are different, ranking them differently based on their risk tolerance. Grable (2017) define risk tolerance as the willingness to engage in risky behavior in which possible outcomes can be negative. According to Investopedia (2020), risk tolerance is the degree of variability in investment returns that an investor is willing to withstand in their financial planning.

Financial Risk Tolerance: Financial risk tolerance refers to the willingness of individual investors to take investment decisions where there is a desirable goal but achievement of the goal is doubtful along with the likelihood of losses (Kogan & Wallach, 1964). Cordell (2001) defines financial risk tolerance as the maximum degree of uncertainty someone is willing to accept when making a financial decision that entails the possibility of a loss. The International Organization for Standardization (2006) define financial risk tolerance as the extent to which someone is willing to experience a less favorable outcome in the pursuit of an outcome with more favorable attributes. According to Grable (2008), financial risk tolerance is the willingness of a person to engage in a financial transaction in which the outcomes are uncertain. In other words, it is the maximum amount of volatility one person is willing to accept when making a financial decision. Investor's financial risk tolerance is commonly defined as the maximum amount of volatility one is willing to accept when making a financial decision. It is important to note that risk tolerance is a complex attitude. It has four facets - financial, physical, social, and ethical (Sulaiman, 2012).

Individual Investor: Individual who acquires shares directly for themselves to gain from the progression of the stock market and improve their wealth is referred to as Individual investors. Individual investors play a key role in providing liquidity in the stock market. Share trading decisions of individuals comprise of three processes: buy, sell, and hold. Of these three processes, the buying decision process is given more attention. The buying decision is the process of selecting a specific alternative after appraising numerous alternatives than deciding to buy (MacCrimmon & Wehrung, 1986; Munthiu, 2005). An individual investor is a person that allocates capital with the expectation of a future financial return or to gain an advantage (Lin, 2015). PayrollHeaven (2020) defines an individual investor as a person who manages his/her own money to achieve personal financial goals. Therefore, an individual investor needs to know the stock market thoroughly, inside and out.

Investor Demographic Characteristics: Personal features utilized to gather and gauge data on people in a certain population are known as demographic factors and these factors include occupation, race, age, marital status, gender, education, and income. Investor demographic factors influenced risk tolerance and risk tolerance in turn influence the investment choice. People with the different occupation, race, age, marital status, gender, education, and income display different dispositions towards decision making, some seek risk and some are averse to risk (Grable & Lytton, 1998).

Gender: gender is the first active distinguishing and categorizing factor amongst the demographic factors. It is generally assumed that females tend to be more conservative and more averse to risk than males. The justification for these gender dissimilarities in risk-taking is centered on evolutionary and biological features. Given women's special role as mothers and child-bearers having a greater amount of the enzyme monoamine oxidase which impedes sensation seeking, women are less sensation seeking and more averse to ambiguous circumstances (Parker & Terry 2002). In comparison to a male investor, female investors have broader risk aversion in different events like financial decision-making (Stendardi et al. 2002). Male investors have more financial knowledge and wealth and the ability to take risks and they are more confident in their investment decisions (Bruce, 1995; Barber & Odean, 2001).

Age: age is used as a measure of time by investment advisors/managers. That is, it is used as a measure of the time remaining until a customer’s financial assets are considered to meet

objectives and goals by investment advisors/managers. It is also used by investment managers to measure of client's ability to recover financial losses. It is commonly anticipated that individuals prefer to take fewer financial risks as they get old. The assumption behind this view is that older investors have fewer times to recover from prospective losses sustained in risky investments (Grable & Lytton, 1998; Jianakoplos & Bernasek, 2006). It is also assumed that biological changes in enzymes owing to the aging process may be the cause (Hallahan et al., 2004). It is generally presumed that older persons have fewer times to recoup losses than do younger persons, and therefore, older persons will have lower risk tolerance suggesting that investors suffer from the disposition effect (Razek, 2011).

Education: education (that is, formal attained academic training) is another demographic factor that triggered a higher financial risk tolerance in the process of decision-making (sung, Hanna, 1996). It is presumed that greater levels of attained education are linked with higher levels of risk tolerance because education plays a vital role in the level of understanding of risks inherent in the financial investment and therefore higher education encourages taking more financial risk (Grable and Lytton, 1998 and Venter, 2006).

Marital Status: Another effective demographic factor influencing the decision making of investors is marital status. According to Roszkowski et al. (1993) individuals that are not married are more risk-taker than married because married individuals have responsibilities for dependents and themselves and. It is presumed that individuals that are not married are more tolerant to risk than individuals that are married, because the responsibility of a single individual is less than that of the married people, specifically in respect to dependents, and faceless social risk, which is described as the likely loss of esteem in the eyes of peers and colleagues when investing in risky investments (Grable and Lytton, 1998).

Income Level: Investor levels of income influences its behavior toward investment. A wealthy individual takes a higher risk (Terry & Parker, 2002). People in the upper-income level have a propensity of taking a greater risk than persons in the lower-income level (MacCrimmon, and Wehrung, 1986). A higher income level enables an individual to bear higher losses, so rich people preferred a higher level of risk. MacCrimmon and Wehrung (1986), posits that upper-income people especially the financially literate, are more likely to take higher risks than people with lesser incomes as higher income levels are linked with access to more urgent resources, and

this has made some researchers conclude that improved levels of income result to higher of risk tolerance levels.

Occupation: MacCrimmon & Wehrung, (1985) define occupation as the activity in which individuals are involved for pay. Individuals, who receive their income directly from their profession, business, or trade, take a greater risk than salary earners working for others. The risk-taking ability of an individual is also influenced by their occupational status; hence, persons with higher ranking occupational status are more risk seeker as compare to low ranking occupational status (Roszkowski et al., 1993). The risk-taking ability of persons in low ranked occupations tends to be low (Barnewall, 1988).

Theoretical Literature

Prospect Theory

Kahneman and Tversky (1979) propounded the prospect theory to serve as a psychologically realistic alternative to expected utility theory. The theory enables one to explain how choices are made by people in conditions where they have to decide between choices that involve risk. It explains how individuals value and frame a decision containing uncertainty and hence they look at choices concerning the possible losses or gains about a particular reference point, which is usually the buying price. Prospect theory posits that people strongly feel more about the pain from a loss than the pleasure from an equal amount of gain. There is the tendency for people to under-weigh outcomes that are uncertain compared with certain ones and people's reactions to similar situations are different depending on the situation of gains or losses they are in which they happen (Kahneman & Perttunen, 2004). Prospect theory might result in mental accounting where individuals share their money into several mental accounts and treat a dollar in one account in a different way concerning a dollar in another because each account has a different importance to them. Mental accounting tends to manifest in financial markets through the tendency of investors to ride the losers as they are reluctant to realize losses since psychologically, they take the unrealized paper loss and realized loss differently even though from a rational economic perspective they are not different.

Generally, the prospect theory deal with how and why individuals make decisions under uncertainty in real day-to-day life while the traditional classical utility theory emphasizes how decisions should be made in a rational environment. Prospect theory may be used to explain the irrationality that is constantly seen in financial markets that goes contrarily to the assumptions of the EMH that prices reflect the intrinsic value of securities. Investors usually have an irrational penchant for high dividends paying stocks as they do not care about spending the dividend income but are not prone to sell a few stocks despite when the fundamentals demand they sell since they see shares to be their hard-earned investment.

Since people are loss-averse, the prospect theory may lead to narrow framing which leads to myopic risk aversion creating a disposition effect. When investors dispose of shares, they usually dispose of stocks that have increased in value instead of those that have a decrease in value. The implication of this is that investors are scared to close their losing positions not until they see a slight shed of hope that there would be a turnaround in prices, whereas in winning positions they are quick to take the first chance to sell their stocks (Kahneman & Tversky, 1979). Thus, prospect theory implies that the manner investors (economic agents) subjectively frame a transaction or an outcome in their mind influences the satisfaction (utility) they expect or receive. Prospect theory has been critiqued for not being able to explain why people are attracted to both gambling and insurance. The theory does not also explain how behavior affects the total returns of individual investors.

Heuristic Theory

The heuristics theory recognizes that people employ imperfect rules of thumb to process data, come to judgments, and solve complex tasks in conditions of uncertainty and imperfect information. Heuristics may produce good results in some circumstances but may also encourage biases in people's beliefs and predispose them to make mistakes. According to Ritter (2003), heuristics make decision making less stressful, particularly in difficult and uncertain situations by decreasing the difficulty of measuring probabilities and forecasting values to simpler judgments that are built on stereotypes and trial and error.

The truth is that the decision-making process of investors is not firmly rational but is often affected by emotional and mental factors even when the investors have gathered the appropriate

information and factually evaluated it. Investors may become excessively hopeful about previous winners and excessively doubtful about previous losers and they generally assume that stocks that are good come from a good company, though the reverse is usually the case most of the time. Heuristics may make investors overconfident as they overlook risks causing security prices to move away from fundamentals. People are usually overconfident and therefore overvalue the accuracy of their projections owing to an illusion of knowledge and illusion control.

The mind of humans is possibly premeditated to get as much information as possible from what is obtainable, but may not be conscious that the existing information is not sufficient to develop a correct projection in uncertain conditions. When people have distinct information or experience despite how trivial, they may be persuaded to contemplate that they have an investment advantage. There is also the tendency for people to think that they impact future results in an uncertain situation particularly when they have been actively involved in decisions that have yielded positive earlier outcomes. Studies in human behavior in financial markets find overconfidence among trading participants to be a major contributor factor to overtrading. Barber and Odean (1999) attribute the huge amount of trading to investors' overconfidence which makes them assume that their judgment was superior and pay no attention to the assessment of others. Grinblatt and Keloharju (2006) also posit that overconfident investors tend to trade more often in stock markets as they overestimate the precision of their information signal rather than the received publicly information signals. The heuristics theory is based on rules of thumb that lead to irrational behavior that could be costly to the investor. Rational behavior requires a combination of sound intellect with emotional discipline (Parikh, 2011).

Empirical Literature

Botwinick (1966) studied cautiousness concerning age, gender, and financial literacy in the perspective of twenty-four life circumstances utilizing Wallach and Kogan's (1961) experimental choice-dilemma test to carry out the research. Volunteers used in the experiment comprised ninety old adults and one hundred and eleven young adults who registered at Duke University psychology course. The researcher found that older adults were more careful in their decisions than younger adults. Vroom and Pahl (1971) also using Wallach and Kogan's (1971) model carry out a choice dilemmas test to 1,484 directors from over 200 firms and found that older directors display a significant inverse relationship to risk-taking and the value given to risk.

In a study carried out by McInish (1982) to find out if gender was an important factor in explaining the risk tolerances of 3,000 investors. The researcher utilizes beta as a proxy for specific personality characteristics and locus of control concerning portfolio risk. The multiple regressions result reveals that gender was not a significant factor in explaining the risk tolerance of investors. Gehrels (1991), utilizing German micro-census data, found no meaningful nexus between age and risk tolerance in his investigation of the life-cycle proposition. Lee and Hanna (1991), investigate the level of share ownership among households in the U.S. and found that age was not a meaningful factor influencing ownership of risky assets.

In a summary of the research that explored the risk-taking variations between male and female investors by Bajtelsmit and Bernasek (1996), they found that the literature supports the argument, both through experiments and field data, that female make more conservative decisions than male and that they make more conservative decisions concerning investments. Also, Jianakoplos and Bernasek (1998) in their study found that single women exhibit relatively and moderately more risk aversion in financial and monetary decision making than single men.

Lytton and Grable (1997) examined the differences between males and females regarding their financial attitudes from a sample of 592 taxpayers from a mid-Atlantic state and found that males expressed more confidence in their financial decisions and higher risk-taking propensities about financial management strategies than women. Grable and Lytton (1999) research to find out if demographic factors would be better predictors of financial tolerance using a sample of both teachers and staff of universities. The result reveals that financial education plays a key role in determining risk-taking ability. Thus, investors that are more financially educated take more risk.

Kim and Nofsinger (2007) utilize market-level data to investigate the behavior of investors in the Japanese stock market. They discover that investors own risky and high book-to-market stocks, frequent trading activity, do not make good investing decisions, and buy current winners. Further, these features seem to vary based on the fluctuation in the market. They found that in a bull market, investors are generally inclined to hold high book-to-market stocks, while in a bear market investors show a preference to shares that the beta high.

In Turkey, Anbar & Eker (2010) explored the nexus between demographic factors and financial risk tolerance using a sample of 1,100 university students using logistic regression analysis, t-

test, and ANOVA as methods of analysis. The result of the regression reveals that gender, department, and working in a job were found to be a strong predictor of financial risk tolerance while the outcome of ANOVA and t-test revealed that department, gender, working in a job, total net assets, monthly personal income, and monthly family's total income were significant in distinguishing individuals into risk tolerance levels, however, marital status, the number of children and age had no meaningful influence on financial risk tolerance.

Sulaiman (2012) explored the nexus between demographic features and the risk tolerance level of investors. The researcher found that marital status, income, and education have a significant link with the risk-taking ability of investors. The result reveals that investor marital status and income level significantly linked with their risk-taking ability while the level of education was found to be positively related to risk tolerance.

Suganya and Parvathi (2014) studied the risk tolerance level of individual investors in the Indian stock bourse and found that risk tolerance was an important factor which influences investment decision. The researcher also found that investors are medium risk tolerance that implies that investors are neither high-risk takers nor risk-averse. They invest in a portfolio that consisted of both risky as well as non-risky securities.

Kannadhasam (2015) explored the level of risk tolerance of retail investors by taking demographic factors as one of the key variables. The result shows that the risk tolerance level has a meaningful effect on investment decision making. Rahmawati, Meyland, Farhan, and Saqib (2015) explored the determinants of the risk tolerance of individual investors and also assess the link between financial risk tolerance and investment decisions. Gender, education, age, wealth were the demographic factors. All these factors were found to have a significant impact on the financial risk tolerance of investors and it affects investment decisions also. Their main findings include that male investors were more risk-taker than females hence they possess a higher risk tolerance level than female investors. In Indian, Chattopadhyay and Dasgupta (2015) studied the effect of demographic and socio-economic factors on the risk attitude of investors. They also investigate the role of various factors like age, gender, the number of dependents, marital status, income, employment, educations, saving patterns, investment amount, monetary planning, and returns on the risk tolerance of investors. The result reveals that age, gender, marital status, and income of investors were significantly linked to the financial risk tolerance of investors.

Chavali and Mohanraj (2016) examined the influence of risk tolerance on investment decisions using the Grable and Lytton scale. The result shows that investors are by default risk-averse in nature and do not want to take risks and always try to avoid risk while investing. The perception of risk of investors depends on different demographic factors like age, gender, and income, etc. They found that the investors have a habit of thinking of losses first than gaining from investment and these behavioral features occasionally lead the investors to make biased decisions which lead to loss and thus risks tolerance of investors affects the decision to invest by investors. Prabha (2016) examined the influence of socio-demographic features of retail investors on their financial risk tolerance as well as classify investors into different classes. The researcher found that maximum investors whose age lying under 25 years fall under average risk profile and investors between 26 years to 30 years of age were between high-risk tolerance profiles. He also found that there is a meaningful link between gender and risk tolerance level. The result also shows that females investors were more risk-averse than male investors. His study also shows that high-income investors take more risk than the low-income group of investors while married investors take less risky asset investment as compared to single investors.

Ansari and Phatak (2017) assess the financial risk tolerance and preferred investment avenues of individual investors in Indian. The outcome of the study shows that most of the investors belong to the average risk tolerance category. The result also shows that Insurance was the most preferred investment avenue was the most preferred investment alternatives. Van Dorresteijn (2017) explores the socio-demographic factors that influence investor risk-taking In Netherland. The result shows that education and wealth are the most influential variables, followed by gender and age. The variables culture, race, occupation, religion, and height have a minor impact on investor risk tolerance. The effect of marital status and dependents is unclear.

Leon and Aprilia (2018) studied the influence of the demography factor in distinguishing and classifying Financial Risk Tolerance (FRT) and Financial Risk-Taking Behavior (FRB) among individual investors. Data was collected from 642 respondents in Jakarta. The result of the logistic indicates that gender, marital status, education, and income level influence the financial risk tolerance and financial risk-taking behavior of individual investors.

Raheja and Dhiman (2019) studied the nexus between the behavioral biases and risk tolerance of investors and the relationship between the behavioral biases and the investment decisions of the

investors. Data was collected from 500 investors in Punjab using a structured questionnaire. The outcome of the multiple regression revealed that the relationship between risk tolerance, behavioral biases, and investment decisions was statistically significant. Raveendranath, Reddy, and Ahammad (2019) studied the influence of demographic factors on the risk tolerance level of investors in Kurnool city. The outcome of the study shows that demographic factors such as age, education, occupation, income, and place of the investors are associated with their risk tolerance level while gender and marital status are not related to the risk tolerance level of investors

Methodology

In this study, the survey research design was adopted. The use of the survey research design will allow the researcher to clarify the relationship between the study's variables. The population of the study is made up of all staff, students, and owners of business centers in the University of Benin who have invested in shares in the Nigerian Stock Market. The study targeted a convenient sample of 70 respondents through a snowball sampling technique (i.e., the first respondent was asked to recommend a colleague or friend who has invested in shares in the Nigerian Stock Market until the required sample is gotten). Out of the 70 questionnaires administered 60 were found usable. Before the actual study, the questionnaire was pre-tested to a selected sample (ten respondents). The technique used in pre-testing the questionnaire was similar to the one used in the study.

The constructed questionnaire has two parts A and B. Part A consisted of demographic features like Gender, Age, Income, Occupation, and Education. Part B contained a 13 item risk tolerance scale design by Grable and Lytton (1999). A structured questionnaire or self-completion questionnaire seems to be one of the most common methods of quantitative research. With a self-completion questionnaire, respondents answer questions by completing the questionnaire themselves. This method is chosen because the questionnaire is the best choice to have standardized data, which is easily processed, and analyzed. There are different techniques used to compute internal consistency and the most commonly utilized technique is Cronbach‘s Alpha. Cronbach’s alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another. The closer the Cronbach‘s Alpha is to 1 the higher the

reliability. According to Nunnally (1978), Cronbach's Alpha of 0.7 and above is acceptable. In this study, the reliability test has been carried out for both the pilot study and the actual study. However, we will report only the result of the actual study. This study used the frequency table, t-test, and One Way ANOVA methods to carry out the data analysis. The frequency table displays a simple average percentage and is used to illustrate the proportion of respondents concerning sample size and is normally taken in hundreds. The t-test and One Way ANOVA analysis provided the generalization of the findings on the effect of demographic factors on the financial risk tolerance of individual investors. Statistical Package for Social Sciences (SPSS) version 22 was used to carry out the necessary statistical analysis.

Analysis of Results and Discussion

Distribution and Retrieval of Questionnaire

Table 4.1: Questionnaire Distribution and Retrieval

Questionnaire	Frequency	Percent (%)
Distributed	70	100.00
Retrieved and usable	60	85.71
Not retrieved and retrieved but not usable	10	14.33

Source: SPSS Output of Author's Field Survey, 2020

A total of 70 questionnaires were administered. Out of the 70 questionnaires distributed 60 representing 85.71% were successfully filled and returned while those not returned were 10 representing 14.29%. The result of the questionnaire distribution and retrieval are shown in Table 4.1.

Demographic Profile of the respondents

In the first section of the questionnaire, information about the respondent's background was asked. Respondents' personal information collected and the results are presented and analyzed in the following tables and sections. The data are shown in frequencies and percentages.

Table 4.2: Respondents' Demographic Profile

S/N	Variable	Metrics	Frequency	Percentage (%)
1	Gender:			
		Male	36	60.0
		Female	24	40.0
		Total	60	100.0
2	Age:			
		18 - 30 Years	16	26.7
		31 – 50 Year	26	43.3
		51 – 70 Years	15	25.0
		71 Years and above	3	5.0
	Total		60	100.0
3	Marital Status			
		Single	22	36.7
		Married	30	50.0
		Divorced	6	10.0
		Widowed	2	3.3
	Total		60	100.0
4	Highest level of education:			
		Below Secondary School	7	11.7
		Tertiary (Bachelor Degree, Diploma, etc.)	40	66.7
		Post Graduate	13	21.7
	Total		60	100.0
5	Occupation:			
		Government Employee	13	21.7
		Private Sector Employee	16	26.7
		Self-Employed	21	35.0
		Student	7	11.7
		Retired	3	5.0
	Total		60	100.0
6	Income Level:			
	₦20,000 – ₦59,000		21	35.0
	₦60,000 – ₦99,000		25	41.7
	₦99,000 and above		14	23.3
	Total		60	100.0
7	Investment Experience:			
	Less than 5 years		25	41.7
	10 to 15 years		22	36.7
	More than 20 years		13	21.7
	Total		60	100.0
8	Time Preference for Investment:			
	Short Term (less than 5 years)		29	48.3
	Medium-term (5 – 10 years)		23	38.3
	Long Term (10 years and above)		8	13.3
	Total		60	100.0

Source: SPSS Output of Author's Field Survey, 2020

Table 4.2 shows that the majority of the respondents, i.e., 36 representing 60.0% were male, while 24 respondents representing 40.0%, were females. In terms of age of respondents, table 4.2 shows that 16 respondents representing 26.7% were between the age group of 18 – 30 years, while 26 respondents representing 43.3% were between the age group 31 – 50 years. 15 respondents representing 25.0% were between the age group 51 – 70 years and 3 of the respondents representing 5.0% were above the age of 70 years. This means that people between the ages group of 31 – 50 years were in the majority. For the educational status of respondents, 7(11.7%) of the respondents had below secondary school education, 40(66.7%) had tertiary level of education and 13(21.7%) had post-graduate education. Frequency distribution of the income level of the respondents shows that 21(35.0%) of the respondents indicates that they receive ₦20,0000 – ₦59,000 whereas 25(41.7%) of the respondents indicates that they receive ₦60,0000 – ₦99,000 while 14(23.3%) of the respondent receive ₦100,0000 and above. In terms of investment experience, most of the respondents i.e., 25 representing 41.7% had less than 5 years of investment experience while 22(36.7%) had 10 to 15 years of investment experience whereas 13(21.7%) had more than 20 years of investment experience. In terms of time preference of investment, most of the respondents i.e., 29 representing 48.3% prefer short term investment while 23(38.3%) prefer medium-term investment whereas 8(13.3%) prefer long term investment.

Financial Risk Tolerance Level

Section two of the questionnaire contains the financial risk tolerance scale constructed by Grable and Lytton (1999) to assess the risk tolerance level of respondents. Thus, the financial risk tolerance of investors was measured through a scale that contained 13 items that measure the risk tolerance level of investors. The scale measured the financial risk tolerance of investors and based on the score obtained from the result, investors were classified into five categories i.e., Low-risk tolerance (i.e., conservative investor), Below-average risk tolerance, Average/moderate risk tolerance, Above-average risk tolerance, High-risk tolerance (i.e., aggressive investor). All respondents were requested to specify the degree of their risk tolerance by circling a number on the scale for each of the items. Thus, answers to the financial risk assessment questions for each respondent were summed. A higher score showed a riskier choice, while a lower score showed a less risky choice. According to Grable and Lytton (1999), the score received on the Financial Risk Tolerance scale can be interpreted as follows:

Low-risk tolerance (i.e., conservative investor) = **18 or below;** Below-average risk tolerance **= 19 to 22**; Average/moderate risk tolerance **= 23 to 28**; Above-average risk tolerance **= 29 to 32**; High-risk tolerance (i.e., aggressive investor) **= 29 to 32** and High-risk tolerance (i.e., aggressive investors) **= 33 and above**

Table 4.3: Result of Financial Risk Tolerance

S/N	Scores	Risk Tolerance Category	No. of Respondents	No. of Respondents (%)
1	18 or below	Low-risk tolerance (i.e., conservative investors)	7	11.6
2	19 to 22	Below-average risk tolerance	9	15.1
3	23 to 28	Average/moderate risk tolerance	24	39.9
4	29 to 32	Above-average risk tolerance	11	18.4
5	33 and above	High-risk tolerance(i.e., aggressive investors)	9	15.1

Source: SPSS Output of Author's Field Survey, 2020

Based on score respondents were categorized into five classes namely: Low-risk tolerance (i.e., conservative investor), Below-average risk tolerance, Average/moderate risk tolerance, Above-average risk tolerance, High-risk tolerance (i.e., aggressive investor). It was found that the majority of investors belong to average or moderate risk tolerance, that is, 39.9% followed by the Above Average Risk Tolerance Level i.e. 18.4%, Below Average Risk Tolerance was 15.1%, Also, High-Risk Tolerance were 15.1% and Low-Risk Tolerance was only 11.6%.

Reliability Analysis

Table 4.4: Result of Reliability Test

Reliability Statistics

Cronbach's Alpha	N of Items
.793	13

Source: SPSS Output of Author's Field Survey, 2020

To determine the reliability of the scale, Cronbach's alpha (α) was used. The overall Cronbach's' alpha for the 13 items scale was 0.793 which showed an acceptable reliability level. Consequently, the validity of the instrument was deemed sufficient and satisfactory since the

Cronbach's Alpha ($\alpha = 0.793$) surpassed the least acceptable level. Hence the scale was found to be reliable for further analysis.

Inferential Analysis

The inferential analysis of this study comprises of a t-test, one-way Analysis of Variance (ANOVA) test, and regression analysis. An independent-samples t-test will reveal whether there is a statistically significant difference in the mean scores for the two groups, while One-way ANOVA tells whether there are significant differences in the mean scores on the dependent variable across the three or more groups, that is, Analysis of Variance (ANOVA) is carried out when there are more than two levels of the independent variable (when there are more than two groups, and we would like to compare their performance across a dependent variable) ANOVA is used.

Results of t-Test and ANOVA

t-Test and ANOVA analysis were used to establish if there were differences between demographic factors (gender, age, marital status, educational level, occupation, and income) and financial risk tolerance levels of individual investors in Nigeria, the results of the t-Test and ANOVA analysis are shown in Table 4.5.

Table 4.5: Results of t-Test and ANOVA

Variables						
Gender:	**N**	**Mean**	**Standard Deviation**	**T**	**F**	**Sig.**
Male	36	28.6667	4.5857	5.516		
Female	24	22.0833	4.4421	5.551	0.052	0.000
Age:						
18 - 30 Years	16	24.2500	5.8822			
31 – 50 Year	26	26.7692	5.0857		1.144	0.339
51 – 70 Years	15	25.9333	5.8489			
71 Years and above	3	29.6667	5.6862			
Marital Status						
Single	22	23.6364	5.0384			
Married	30	27.6667	4.8447		2.429	0.075
Divorced	6	26.3333	6.7725			
Widowed	2	27.0000	12.7279			
Highest level of education:						
Below Secondary School	7	23.1429	4.6701			
Tertiary	40	25.8750	5.8362		1.907	0.158
Post Graduate	13	28.0769	4.4807			
Occupation:						
Government Employee	13	26.1538	5.5204			
Private Sector Employee	16	26.5000	5.7735			
Self-Employed	21	26.5238	5.6799		1.505	0.214
Student	7	21.7143	3.1472			
Retired	3	29.6667	5.6862			
Income Level:						
₦20,000 – ₦59,000	21	22.4286	4.0320			
₦60,000 – ₦99,000	25	27.0400	5.2081		10.273	0.000
₦99,000 and above	14	29.6429	5.2419			

Source: SPSS Output of Author's Field Survey, 2019

Regarding the gender of respondents, the t-Test results in Table 4.5 reveals that there was a significant difference between financial risk tolerance levels of male and female. This is because, at a 5% level of significance, the Asymptotic (2 sided) Significance is 0.000, which is less than the critical level of 0.05. It was also found that mean of male investors (28.66) was higher than that of female investors (22.08) which suggests that male investors display more risk-taking ability than their female counterparts.

The ANOVA results in Table 4.4 revealed that while there were no significant differences in financial risk tolerance levels as to age, marital status, level of education, and occupation, there

was a significant difference in the level of financial risk tolerance according to income. Furthermore, in terms of age, the financial risk tolerance level of respondents in 71 years and above was higher than the other age groups. For marital status, respondents that are married exhibit higher financial risk tolerance. In terms of the level of education, respondents with post-graduate qualifications exhibit higher financial risk tolerance levels. Concerning occupation, surprisingly respondents that are retired exhibits higher financial risk tolerance levels. In terms of income, respondents that earn N99, 000 and above, exhibits higher financial risk tolerance.

Therefore, the result of the t-Test showed that there was a significant difference between the financial risk tolerance levels of males and females. Also, the results of ANOVA showed that there were significant differences in financial risk tolerance levels according to income. However, as to the age, marital status, level of education, and occupation, there were no meaningful differences in financial risk tolerance levels.

Influence of Demographic Factors on Financial Risk Tolerance of Individual Investors

A regression analysis of the effect of demographic factors on the Financial Risk Tolerance of individual investors was carried out to ascertain the degree to which each demographic factor explained financial risk tolerance. It will also reveal the relationship that subsists between each of the demographic factors and financial risk tolerance.

Table 4.6 indicates that the model summary reveals that the six (6) independent variables have a moderate R-square of 0.518. Adjusting for the degree of freedom resulted in an adjusted R-squared of 0.464. These suggest that all the explanatory variables (gender, age, marital status, educational level, occupation, and income) jointly account for about 46% of the systematic variations in the independent variable (financial risk tolerance). It also indicates that about 54% of this variation is captured by other variables not captured in the model. Thus, demographic factors may not be the main factors that impact the financial risk tolerance level of individual investors. The F-statistics of 9.500 and associated probability of 0.000 shows that the explanatory power of the model is sound. These statistics show that the overall model is significant in explaining the dependent variable since the associated probability is less than 0.05.

It also suggests that a linear relationship subsists between the dependent variable and independent variables.

Table 4.6: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.720[a]	.518	.464	4.06087

a. Predictors: (Constant), INCOME, OCCUPATION, EDUCATION, MARITALSTATUS, GENDER, AGE

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	939.927	6	156.654	9.500	.000[b]
	Residual	874.007	53	16.491		
	Total	1813.933	59			

a. Dependent Variable: FINANCIALRISKTOLERANCE
b. Predictors: (Constant), INCOME, OCCUPATION, EDUCATION, MARITALSTATUS, GENDER, AGE

Source: Author's field survey, 2020; SPSS output

Table 4.7 displays the estimated regression coefficients, standard errors of the estimates, t-values, and significant levels.

Table 4.7: Coefficients (a)

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.761	3.831		6.985	.000
	GENDER	-5.278	1.191	-.470	-4.433	.000
	AGE	-1.462	.962	-.224	-1.520	.135
	MARITALSTATUS	1.826	.920	.249	1.985	.052
	EDUCATION	1.137	.957	.118	1.189	.240
	OCCUPATION	-.431	.510	-.086	-.845	.402
	INCOME	2.716	.917	.373	2.963	.005

a. Dependent Variable: FINANCIALRISKTOLERANCE

Source: Author's field survey, 2020; SPSS output

The following is the regression equation:

$$FINANCIALRISKTOLERANCE = \alpha + \beta_1 GENDER + \beta_2 AGE + \beta_3 MARITALSTATUS + \beta_4 EDUCATION + \beta_5 OCCUPATION + \beta_6 INCOME + \varepsilon \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

FINANCIALRISKTOLERANCE = 26.761 - 5.278 GENDER – 1.462AGE + 1.826 MARITALSTATUS + 1.837 EDUCATION - 0.431 OCCUPATION + 2.716INCOME …….. (2)

The regression result will be used to explain the direction and significant levels of the relationships that subsist between each of the demographic factors and financial risk tolerance level. The regression results presented in Table 4.7 above show that at a 5% level of significance, the p-values for age (-0.520), education (1.189), and occupation (0.402) of respondents do not have any significant relationship with their risk tolerance level. This result is further corroborated by the t-value obtained for these variables; they were all less than an absolute value of 2 (age -1.135, education 0.926, and occupation -0.845). Furthermore, age though not significant negatively influences the financial risk tolerance level. This implies that an increase in age decreases the financial risk tolerance of individual investors. The level of Education positively influences the financial risk tolerance level. This means that greater levels of attained educational levels are associated with the increased financial risk tolerance of individual investors. This might be because literate investors understand the market situation very well as compared to less educated. Thus, the higher the education level the higher will be the risk-taking capacity. Occupation negatively influences individual investor financial risk tolerance levels. This finding implies that people with higher ranking occupational status are less risk seeker as compare to low ranking occupational status.

However, at 5% level of significance gender, marital status, and income were found to be significant with a p-value of 0.000, 0.052, and 0.005 respectively and an absolute t-statistic value of –4.233, 1.985, and 2.963 respectively, meaning there is a significant relationship between respondent's gender, marital status, income, and financial risk tolerance level. This statistically significant relationship suggests that this dimension of the demographic factor influences individual investors' financial risk tolerance. A cursory look at the t-statistic value of –4.433, obtained for the relationship between gender and individual investor financial risk tolerance reveals a negative relationship. This implies that the financial risk tolerance level decrease with an increase in age. However, the t-statistic value of 1.985, obtained for the relationship between marital status and individual investor financial risk tolerance reveals a positive relationship. Thus, it is to be concluded that marital status is associated with the financial risk tolerance of individual investors. Also, the t-statistic value of 2.963, obtained for the relationship between

income and individual investor financial risk tolerance reveals a positive relationship. This implies that increased levels of income lead to increased levels of risk tolerance.

Discussion of Findings

The study found that the majority of investors belong to the average/moderate risk tolerance class. This finding is in tandem with the study conducted by Grable (1997); Suganya & Parvathi (2014) and Ansari & Phatak (2017) who found that majority of investors belong to the average/moderate risk tolerance category. The study also established that the level of financial risk tolerance differs between men and women in their financial investment decision making. Also, the level of financial risk tolerance differs among the different income groups regarding their financial decisions. This outcome is in tandem with that of Anbar & Eker (2010) and Chavali & Mohanraj (2016) whose result also shows that the level of financial risk tolerance differs between men and women and also among the different income groups.

The result of the multiple regression reveals that three demographic variables i.e., gender, marital status, and income significantly affect the financial risk tolerance of investors. These findings are in tandem with that of Grable and Lytton (1999); Sulaiman (2012); Anbar & Eker (2010); Kannadhasam (2015); Chattopadhyay and Dasgupta (2015); Rahmawati, Meyland, Farhan & Saqib (2015); Prabha (2016) and Ansari and Phatak (2017) whose result also show that demographic variables such as gender, marital status, and income significantly affects financial risk tolerance of individual investors.

Conclusion and Recommendations

Conclusion

The focus of the study has been to investigate the financial risk tolerance level and the effect of demographic characteristics on the financial risk tolerance level of individual investors in Nigeria. A 95.71% response rate was achieved in the survey. Convenient sampling was used and the sample size was 60 individual investors. A questionnaire was constructed having two sections A and B. Section A consisted of demographic characteristics like Gender, Age, Marital Status, Education, Occupation, and Income. Section B consisted of a 13 item risk tolerance scale developed by Grable and Lytton (1999). To analyze the data, t-Test, ANOVA, and multiple regression was applied. The study found that the majority of investors belong to the

average/moderate risk tolerance class and that the level of financial risk tolerance differs from men and women in their financial investment decision making. Also, the level of financial risk tolerance differs among the different income groups regarding their financial decisions. The result of the multiple regression reveals that three demographic variables i.e., gender, marital status, and income significantly affect the financial risk tolerance of individual investors. Thus, the outcome of this study established that demographic factors play a vital role in the risk-taking ability of individual investors.

Recommendations

Below are the recommendations of the study based on the findings and conclusions arrived at by the researcher:

i. Financial service providers need to frame the products according to investors' risk-taking capacity which definitely will increase market efficiency as well as investors' confidence.
ii. Firms going public can make use of the outcomes of this study to understand how investor risk-taking influences the securities price and therefore be able to set realistic prices that will appeal to the investors they target without distorting the market.

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