



Is Demographic Information Influence Risk Tolerance/Aversion in Investment Decision? Evidences from Literature Review

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Abstract

Investment decisions are usually being complicated by emotional process, mental mistakes and individual personality traits. In almost every important economic decision, the concept of risk in one hand, and uncertainty on the other hand, play a major function. Consequently, the objective of having an understanding and at the same time predicting the behaviour of an economy is intimately linked to understanding individual attitudes towards risk. behavioural finance happens to be a contemporary field that tends to merge the theory of behavioural cognitive psychology with conventional economics and finance with a view to giving reasons on why individuals made financial decisions that are irrational. The focus of behavioural finance is to study the final decision-making process and risk judgement of investors taking into consideration the theories and concepts that influences them. During investment decision making, the behaviour of an investor is affected by several factors. One of such decision influencing factors among others is demographic profile of investors. Different attitudes towards decision making were exhibited by respondents with diverse occupation, marital status, family size, income level, age and gender. They were also grouped into adverse risk and risk seeker.

Key words

Financial Risk Tolerance, Financial Risk Aversion, Behavioural Finance, Investment Decision

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1. Introduction

In the present modern-day world of numerous financial crisis and economic turbulence, advisors and researchers are taking interest in human sentiments and emotions before investing money. A fairly new area such as Behavioural Finance seeks to elaborate why individuals make financial decisions that are illogical, by combining cognitive and behavioural psychological theory with conventional finance and economics.

It has been observed for many years that stockholders buy high then sell low. Wrong stocks were also repeatedly bought, in normal times incorrect stocks were also sold, and excessive purchasing and selling were frequently done. A value stock provides the chance of making sales and take business advantage of locking in, thus, the investors and stock brokers do this to get involved in the satisfaction derived from the gains. This is a positive and promising scenario for investment. A losing stock also includes the possibility of getting a loss. In order to avoid a negative investing sequences, stockholders hold on to such shares (Barberis and Xiong, 2012). This does not mean that the investors are not rational; rather, the investors are just being human.

Investing obviously involves risk. Investors have established that risk is what separates investment from saving. A person accepts the risk of losing his money when he invests (or at least, that he will not make money) in return for the potential of making more money if the capital is in a savings account building up. The well known risk-return trade-off states that: the riskier an investment is, the higher its potential return should be. Investments with very little risks typically offer lower returns. The amount of risk taken largely determines the amount to be expected from an investment. To some extent risk tolerance is an emotional issue. Investor is not likely to invest if he is petrified of losing his/her money. Thinking of risk tolerance in terms of the financial consequences of losing investment capital is however more useful, or of placing his/her capital in investments that are performing poorly.

Financial planning and investing that are successful are much more understanding than the latest market trends, listening to popular opinion and crunching numbers. People need to know about themselves as much as they know about financial markets and investments. Investor behaviour takes a large part of investment. Investment decisions are usually being complicated by emotional process, mental mistakes and individual personality traits.

The decisions of investors are actually being affected by greed and fear of others and instead of calculated reasons, they react with blind emotions. Asset pricing bubbles with related market behaviour can help explain emotions. Therefore, the psychology of financial planning and investing need to be understood by investors.

In almost every important economic decision, the concept of risk in one hand, and uncertainty on the other hand, play a major function. Consequently, the objective of having an understanding and at the same time predicting the behaviour of an economy is intimately linked to understanding individual attitudes towards risk.

The method of processing information by financial professionals and individual investors has two major viewpoints in finance literature:

1. Investors are guided by the assumptions of the efficient market hypothesis in their decision making process. This viewpoint is that of standard finance academic's.
2. Heuristics, cognitive factors, and affective (emotional) issues are factors that influences financial judgements made by individuals. This is the perspective of the behavioural finance literature.

Cognitive and emotional factors which are referred to as the major behavioural finance themes are factors that may directly influence the perception of an investor for series of financial investments and products. Perceived risk, otherwise called risk perception is a process of subjective decision making which are used by people when they are to measure risk and its associated degree of uncertainty. In regard to risky personal activities, the term is usually employed. The conventional financial theory stated that most part of the world and its participants are rational wealth maximizers. However, most of our decisions that make us to act in an irrational and unpredictable way on many occasions are being influenced by our psychology and emotion.

Contextually, behavioural finance happens to be a contemporary field that tends to merge the theory of behavioural cognitive psychology with conventional economics and finance with a view to giving reasons on why individuals made financial decisions that are irrational. The focus of behavioural finance is to study the final decision-making process and risk judgement of investors taking into consideration the theories and concepts that influences them. This also includes factors referred to as mental mistakes (errors) or cognitive bias (Ricciard, 2008). In our cognitive process of decision making as human beings, we make use of certain mental mechanisms in the process of problem solving. Cognitive process is the mental skill which makes an individual to understand and identify things in his immediate environment.

Investor's behaviour sometimes strays away from the normal logic and reasoning. Based on the perspective of the financial planner, the problems in understanding the judgements of the clients are usually increased by such factors. When people are taking decisions that are related to investments, they act rationally by choosing between alternatives (Von Neumann, & Morgenstern, 2007). Many researchers had explored that irrational decisions were usually made by individuals when it comes to personal investments (Barberis and Thaler, 2003). Financial planning clients, according to Yeske (2014) are, in fact, as susceptible to bias behaviourally as anyone. These tendencies have to be worked on and mitigated by advisers. Consequently, in order to ensure the commitment of the clients to a disciplined and dependable course of action and in guiding against these biases, suitable policies on financial planning will play a

significant role. Investment performance can be detrimentally influenced if this concept is ignored. Nevertheless, during investment decision making, the behaviour of an investor is affected by several factors. One of such decision influencing factors among others is demographic profile of investors.

In order to determine the influence of demographic factors on the risk tolerance level of an investor by the time he is making decision on investment, a lot of studies have been conducted in order to determine how demographic factors affects the level of risk tolerance of investors when making investment decisions. Different attitudes towards decision making were exhibited by respondents with diverse occupation, knowledge, marital status, income level, age and gender. They were also grouped into adverse risk and risk seeker. In this review, researchers had put together two distinct literatures that centred on economic/financial risk attitude. They are:

- i. Financial Risk Tolerance (FRT),
- ii. Financial Risk Aversion (FRA)

The two distinct literatures have been put together in order to accurately find out how they complement/reinforce one another. This is the first attempt of conducting this research, and this will give the opportunity of unique insights into literatures of infusing financial tolerance and risk aversion.

1.1. Problem of the study

Although FRT is very essential, the act of measuring someone's risk tolerance level is very difficult because FRT is a complex attitude. Behavioural economics as an emerging area that is centred on individual's psychology and individual's attributes which directs common financial and investments practices and factors influencing the risk attitudes of people are of much concern and interest. Individuals can be grouped into different levels of risk tolerance/aversion according to demographic factors as obtained from research data seen in literature review.

However, because the findings of research revealed inconsistent results which calls for further needs to evaluate the critical demographics factors which influence risk aversion/tolerance. The effects of individual and household characteristics have been included by many other studies. In recent studies there are inclusion of many control variables that were investigated to be influencing risk decision making. Characteristics that clearly affect one's status of aversion/risk tolerance are age, gender, family size, marital status, education, income, race and religion.

The main association between these qualities and risk aversion/tolerance is actually unclear. It can also be debated that these characteristics may influence individual's risk tolerance/aversion which will invariably affect one's making several lifestyle choices.

1.2. Study Objectives

This review is required to add to the contemporary literature in behavioural finance. Hence, the following objectives were framed from the present review:

- To develop an understanding on the relationship between financial risk tolerance/aversion and demographic characteristics.
- To establish a comprehensive review through literature appraisal on the subject of financial risk tolerance/aversion affected by demographic profiles (Education, Age, Occupation, Gender, Income level, Marital status, Family size, Race and Religion).

2. Methodology of research

The study is aimed at exploring the demographic effect of risk tolerance/aversion on investors during the process of making investment decisions. This study made use of secondary data. Data is collected from various financial behaviour risk literature that have consistency with the methodology for searching and collecting the expected literature. The author uses Google Scholar and EBSCO Business Source Premier which are electronic databases. Furthermore, the author compiled his collection by adding articles referred to in previously identified studies and separately screened for relevance of all the identified articles. The selection process was done by making use of demographic profiles as the main factors determining risk tolerance together with risk aversion. In the extant literature, three techniques had been identified for determining financial risk tolerance/risk aversion. They are:

- a. Observing the real investment behaviour.
- b. Evaluating choices in an experimental setting.
- c. Creating scores from survey questionnaires.

The study of Schooley and Worden (1996), for instance, infer risk aversion from two perspectives comprising portfolio allocations and structurally estimate risk aversion by making use of car insurance data. They explained risk aversion in relation to allocation of portfolio and also appraised risk aversion in the usage of car insurance data. An emerging literature also analysed behaviour of contestants on gameshows. Second, in an experimental setting, choices were also assessed and researchers give higher considerations to financial consequences or hypothetical scenarios (for example, Barsky et al., 1997; Harrison et al., 2007; Holt and Laury, 2002). Third, Hallahan *et al.* (2004) and Grable and Lytton (1998), in their financial risk tolerance scores, investigated demographic patterns. Adopting this type of methodology provides the opportunity to review literature beyond investment decision that covers many topics that have relationship with risk aversion and financial risk.

The sample used consisted of 57 articles published between 1975 and 2014. Second, the author reviewed the identified articles by categorising them based on demographic profiles findings to reveal the under-researched areas or gaps within the financial risk management framework. Furthermore, author completed his collection by separately screened for direct and indirect relevance of all the selected articles including articles that were referenced to in studies previously identified. While such review omitted inaccessible articles.

3. Literature review

3.1. Risk Tolerance

Financial Risk Tolerance (FRT) refers to the attitude which an investor shows to risk- the volume of volatility of investment return or uncertainty- which the person investing is ready to take at the time of creating a decision on financing (Grable and Joo, 2000). In practice, the risk aversion, based on the economists' notion, is indirectly linked to the word financial risk tolerance. This means that there is a lower (higher) financial risk tolerance for individuals who are more (less) risk averse. Whenever investment managers and investors are making decisions relating to investments, financial risk tolerance is, therefore, the main issue that should be considered.

FRT is not a topic that is simple, going by its importance, understanding and measurement. Hence, for years, researchers had undertaken a wide discussion on fashioning out the determining factors of financial risk perceptions of investors and how to measure FRT. The idea of it is playing a very vital role when it comes to taking decisions regarding financing and realizing optimal financial objectives. FRT is assumed to serve as a fundamental factor influencing the choice behaviour in investment circumstances like wealth accumulation, insurance, asset allocation and retirement plans. According to Grable and Lytton (1998), in fashioning a model required for the development of financial and investment plans, four important issues need to be considered. They include: (i) goals, (ii) time horizon, (iii) financial stability, and (iv) financial risk tolerance.

Risk tolerance is a psychological conception that is complicated and in investment principles, it happens to be one of the most misunderstood. Also, every investor has individual's attitude and tolerance towards risk. An investor might see an investment to be a high risk investment while another investor will see the same investment as a low risk investment. Investment managers as well as investment advisors are usually confronted with the enormous function of investors' categorization to their most relevant risk tolerance group and also giving them investment positions that suits those most. An investment manager that is well acquainted with the risk tolerance level of a client will use such information in the assignment of suitable portfolio to such a client (Roszkowski *et al.*, 2005; Yao *et al.*, 2004).

When managers of investments ignore risk tolerance, it will definitely bring about inability to implement plans or meet objectives. Therefore, investment managers and researchers in recent years have shown keen interest in measurement and understanding of financial risk tolerance (Faff *et al.*, 2008; Grable and Lytton, 1998; Hallahan *et al.*, 2004).

The mathematical inverse of financial risk tolerance is risk aversion. Risk aversion, according to Finke and Huston (2003), is the maintenance preference possessed for a specific consumption degree over an

uncertain consumption notwithstanding higher uncertain consumption expected value than the degree of the certain wealth. The unwillingness to run into a risk is what is called risk aversion. The risk averse investors will directly have a lower (higher) financial risk tolerance. Corter and Chen (2006) affirmed that in between risk aversion and expected return, a certain degree of positive relationship exists. This emanates from the idea of investors that for every risk taking there should be a higher return. Risk premium serves as the basis for risk aversion, it consists of an extra return that are unexpected which investors need to be rewarded for taking the risk of holding their financial assets. Generally, people are risk-averse according to an assumption. However, it is glaring that there is considerable difference in the extent to which every person tends and ready to take risk.

Risk aversion, in other words, can be described as a situation in which an investor is faced with two investment options that has similar expected returns but with different risks and he goes for the investment with the lowest risk. In investment decision, risk management, according to financial world perspective, is the process of identification, analysis and acceptance or mitigation of uncertainty.

3.2. Risk tolerance and risk aversion on demographic profiles

3.2.1. Risk tolerance/risk aversion based on gender

In examining the connection in between risk aversion and gender, majority of research such as (Bajtelsmit and Bernasek, 1996; Grable and Joo, 2000; Grable and Lytton, 1998; Palsson, 1996; Yao *et al.*, 2004) had established that women are more risk averse than men. In investment decisions, male investors are more confident because they have more wealth, knowledge of finance, and capability to venture into risky investments than women (Barber and Odean 2001). Greater risks are taken by men at the time of investing their wealth due to large income.

In contrast, some studies have shown that during financial decisions on risk tolerance, gender has no significant effect (Embrey and Fox, 1997; Grable and Lytton 1999; Harrison *et al.*, 2007; Jianakoplos and Bernasek, 1998; Schubert *et al.*, 1999; Sunden and Surette, 1998).

In researching for evidences for gender differences in taking financial risk, Jianakoplos and Bernasek (1998) took data obtained from the Federal Reserve's Survey of Consumer Finances and relative risk aversion by gender was estimated. The study revealed that single women were relatively more risk averse than men that were single and couples. In different contexts and cultural environments, the same results were found by other several studies when gender differences were studied.

The assumption is that women tend to be more conservative and risk averse than men. Arising from the evolutionary and biological factors of the important role of women as the bearer of children, this explains the gender differences in taking risk. In addition, women are more averse to ambiguous situations and less sensation seeking. Concentration of other argument is on social and economic factors such as level of financial knowledge, income, working career, and wealth (Chaulk *et al.*, 2003; Jianakoplos and Bernasek, 1998; Olsen, 1998).

The conclusion of most researches is that women are more risk averse than their men counterpart. Similarly, many laboratory experiments on empirical investigations and studies conducted on the field of research (Croson and Gneezy, 2009; Eckel and Grossman, 2008) affirmed the same position that women are more risk averse than men. Also when individual characteristics like wealth, family status, education and age are being controlled, this finding remains true (Outreville, 2014).

3.2.2. Risk Tolerance/Aversion and Age

Age is considered as a demographic factor that is usually hypothesized to have visible influence on individuals' degree of risk aversion in terms consideration for risk aversion. Risk aversion has been studied and found by many studies to be positive correlation with age (Morin and Suarez, 1983; Palsson, 1996). It has been investigated by many researchers that there is a relative decrease in risk aversion arising from people's age when other demographic variables are constant and risk aversion comes to a decreases when age is going up 65 years and afterwards significantly reduces (Harrison *et al.*, 2007).

As individuals are getting aged, they give preferences to investments that have little financial risks. This is premised on the ground that old age investors have inadequate period of recovery from possible losses that may arise from investments that are risky (Grable and Lytton, 1998; Jianakoplos and Bernasek,

2006). According to certain studies, changes in biological features such as enzymes because of old age tend to be a factor responsible for this (Hallahan *et al.*, 2004).

The associations existing between age and risk tolerance are inconclusive according to some results of empirical studies (Finke and Huston, 2003). Studies such as Palsson, (1996), Morin and Suarez (1983), and McInish (1982) explained that financial risk tolerance decreased with age (negative association). It is also found that non-linear negative association exists between risk tolerance and age (Faff *et al.*, 2008; Grable, and Joo, 2006; Hallahan, Faff and McKenzie, 2004).

Grable *et al.* (2000) disputed that risk tolerance increases as age also increases (positive relationship). So, a linear relationship may not likely occur between risk tolerance and age. Therefore, risk tolerance reduces with age, but at a particular time, risk tolerance again starts to increase with age.

Invariably, other studies have established that no association existed between the concepts of risk tolerance and age (Al-Ajmi, 2008; Grable and Lytton, 1998; Grable and Lytton, 1999; Gumede, 2009). Moreover, decision making process or investment performance of every investor can also be based on their age. Investors who are older in age have higher tendencies to tolerate more risk compared to the investors who are still young (Grable and Lytton, 1999). Similarly, Jianakoplos and Bernasek (1998) finds out those investors who are middle-aged are less risk averse than the investors who are young in their examination of the impact of the spreading of wealth over age cohorts. Nevertheless, Halek and Eisenhauer, (2001) affirms that after age 65, risk aversion significantly increases. Also, many other research findings confirmed that a non-linear association exists between risk aversion and age (Jianakoplos and Bernasek, 1998; Lin, 2009).

Investors who are still very young are usually unable to accurately measure their performance at work compared to older investors. Investors who are older had gain investment experience and knowledge overtime, and are almost accurate and good in making prospective and better choices for investment.

3.2.3. Risk Tolerance/Aversion and Marital Status

Single individuals have been observed to have higher risk tolerance than married individuals. The main reason behind this is the fact that singles have lesser responsibilities than the married. Especially in the area of responsibilities to dependants, social risk which is seen in the eyes of colleagues as potential loss of esteem when risky investments are being done (Grable and Lytton, 1998). In view of this, Yao *et al.* (2004); Hallahan *et al.* (2004), Barber and Odean (2001), and Grable and Joo (2000) were corroborated that people who are single are found to be more risk tolerant than those that are married. Similarly, Jianakoplos and Bernasek (1998) also stated that women who are married are probable going to invest in non-risky assets than single women.

In contrast, it was found that married investors have higher risk taking tendencies than single investors for the fact that married people are involved in shared income and double human capital, which motivates them to go for assets that are risky. Conversely, Grable (2000), Hallahan *et al.*, (2003) and Watson and McNaughton (2007) researchers observed that married individuals are more risk tolerant than single persons. Cohn *et al.* (1975) in his research that centred on risk aversion determinants in which a survey was carried out that covers customers of a brokerage firm. Variables like marital status, occupation, gender, age, and family size were discovered to have significant effect on risk aversion of individuals. Surprisingly, in some research, marital status has no significant influence on the attitude of investors to risk (Grable *et al.*, 2006; Hallahan *et al.*, 2003; Sunden and Surette, 1998).

3.2.4. Risk tolerance/aversion and Family size

Like marital status, the investor's number of children that an investor has impact on FRT. By logic, an investor that has a small family is keen to taking more risk than an investor with a large family. Chaulk *et al.* (2003) posit that investors that have children are prone to lower risk tolerant than those without children. The reason for this is that investors that have children will need more resources to cater for the family's basic needs and will avoid put their resources into risky investments.

Furthermore, certainty of investment return is a major concern of investors who have children; this makes them to look for financial security. Therefore, family size encourages lower risk investments. It is also found that as the family size increases in term of number of children, financial risk tolerance decreases (Chaulk *et al.*, 2003; Jianakoplos and Bernasek, 1998; Riley and Chow, 1992). In the other way, Faff *et al.*

(2008) found out that the more and more the dependants' number in a family increases, financial risk tolerance also increases. Cohn *et al.* (1975) also found that increase in family size causes risk aversion. While, in a study by Hallahan *et al.* (2004) submitted that neither the number of children nor that of the dependents has any significant impact on risk tolerance.

3.2.5. Risk Tolerance/Aversion and Education

Formal education or academic training is a factor that causes a much higher financial risk tolerance at the time of making critical financial decisions (Sung and Hanna, 1996). There exists a positive association between obtained educational level and financial risk tolerance (Haliassos and Bertaut, 1995).

Higher level of educational attainment is assumed to cause increase in the level of risk tolerance. This is due to the fact that having a good education helps in understanding the risks associated with financial investments. Therefore, higher education helps in taking financial risks. Furthermore, it has been discovered that the investors having higher educational attainment have a high risk tolerance than those with poor or low educational level (Al-Ajmi, 2008; Christiansen *et al.*, 2006; Grable, 2000; Grable and Joo, 2004).

Additionally, some researchers have looked into the aftermath of education on risk aversion. Majority of interpretations of the studies tends to show a higher correlation for education (Halek and Eisenhauer, 2001). In the same vein, we may submit that individuals with a higher educational attainment have a low level of risk aversion and it may be argued that people with low risk aversion usually go for higher educational attainment (Riley and Chow, 1992).

Bayer *et al.* (2009) investigated the association between participating in and contributing to voluntary savings plans and financial education in the workplace. The result showed that when employers provide retirement seminars for their employee, measures of savings activity are higher significantly. It was also discovered that lower-paid employees are more affected than higher-paid employees (Bajtelsmit and Bernasek, 2001).

According to Dohmen *et al.* (2011), willingness or zeal to take risks is significantly impacted by higher parental education. Whereas, Jianakoplos and Bernasek (1998) opined that single men and women that have lower than sixth grade results successfully hold positions that have higher percentages of risky assets while those that have higher grades could not. In the contrary, Hersch (1996) found that when risky consumer choices are being considered, risk aversion increases with education, while, Hallahan *et al.* (2004) and Gumedé (2009), reported in contrary that there is no significant association between level of education and risk tolerance.

3.2.6. Risk tolerance/aversion and income

Wealth and income are crucial elements that have great effects on degree of risk tolerance. Financial risk tolerance is ordinarily expected to increase with increase in income and wealth. This is because wealthy investors with higher income may easily be ready to incur losses emanating from investments that are risky (Hallahan *et al.*, 2004; Watson and McNaughton, 2007).

Cohn *et al.* (1975) also pointed out that there exists a negative association between wealth/income and FRT because low income individuals in order to become wealthy can be enthusiastic in taking more risk. Likewise, Faff (2008) also concluded that there exist a negative association between income (wealth) and risk tolerance. Henceforth, individuals' level of income also dictates their level of investment behaviour. Taking greater risk is an act associated with individuals with a lot of wealth. People with higher income level and millionaires usually take greater risks than people with low income (MacCrimmon and Wehrung, 1986).

Studies done in the past reported that the more and more the income of people increases, the level of risk tolerance also increases (Friend and Blume, 1975). When investors have a high income, they easily make investment in portfolio that is volatile and containing more volatile shares. Investors with higher income can easily bear the losses than emanates from risky investments (Barber and Odean, 2001).

3.2.7. Risk tolerance/aversion related to occupation

Occupation is the term used for activity that people do for a pay. People who receive direct salary or work to obtain salaries are prone to less risk tolerance compared to their counterparts who generates income from personal businesses, profession or trade (MacCrimmon and Wehrung, 1986).

Risk taking ability is highly affected by occupational status of individuals; people with low ranking occupation are lower in taking financial risk compared to people with higher status of occupation. Low rank professions are usually flooded by people who are low in risk taking.

Apart from Cohn *et al.* (1975), only few researchers have dwelled into examining the relationship occupation type, self-employment, unemployment and risk aversion (Halek and Eisenhauer, 2001; Hartog *et al.*, 2002; Lin, 2009). The researcher concluded that self-employed people exhibited the least measure of risk aversion when compared to salaried professional and clerical officers. Finance, Insurance, and Real Estate industries were found to have the highest risk aversion while service and trade industries were established to have less risk aversion.

4. Discussions

Financial risk tolerance assists organizations to map out a way forward for progress and the best path to take in achieving organizational objectives and how best to have a broad understanding of their new situation. Strategic risk management concept starts with the arrangement of strategic goals of the organization in line with the activities and duties of the risk manager. That is:

- a. The amount of risk that a company is able to take;
- b. The amount of risk an organisation is willing to take and;
- c. The amount of risk an organisation desires to take.

Risk managers may not be able to execute certain decisions that are fundamental and related to their positions within the organization with all confidence if they don't have an in-depth information of the organizations' risk needs as stated above. For example:

- How will a risk manager be informed if the organization is putting in place the desired protection level?
- Does the intended risk transfer programme of the organization in support and alignment with the organizational goals?
- Effective measurement and communication of the trade-off between risk transfer and mitigation tasks with the related costs.
- Proper reflection of risk across the business processes and functions of the organisation.

It has been extensively discussed and documented that investors must assess their ability to take risk, that is their risk tolerance ability prior to investment in equity or stock market linked products. This will go a long way in knowing if an investor is risk tolerant or risk averse. Investors who are risk averse can be grouped into individuals who may not be interested in taking risk beyond a particular level even if they will end up losing higher potential returns. However, risk tolerant investors refer to those who are determined to undergo some risks in the trade-off for greater returns on investment.

Investment products that are safe are usually the preference of risk averse investors, while the latter would be more interested in having equities as the portion of their investment. In the context of this framework, the investor optimizes lifetime utility and many variables are applied in representing the likely outcome of the decision being represented. Demand is a function of expected income, wealth (or total assets), subjective discounting functions, and expected rate of returns on alternative choices to assess these choices.

The response of different individuals to similar risky circumstances differs. Many experiments and studies have been conducted by psychologists and different others in an effort to describe the profiles of risk-averse and risk-taker individuals. The behavioural differences in the persons confronted with related risky circumstances could be somewhat explained by the person's education, family background, prior experience, geographical location, and position (Kogan and Wallach, 1964). In line with this, the core determining factors of risk attitudes of people are of much concern in the growing field of behavioural finance that concentrates on the person attributes, psychological or otherwise, that shape common investment and financial practices (Outreville, 2014).

Correspondingly, the most commonly examined factor influencing the FRT is the demographic characteristics. Also, the universal consensus among researchers and investment managers is that demographics is applicable in differentiating the levels of investor risk tolerance, and at the same time in categorizing investors into risk tolerance classes. However, there still exist some unanswered questions in relation to the risk tolerance/aversion determinants.

This review concluded that there is inconsistent finding for the relationship between demographic qualities and the risk tolerance/aversion level of investors. Result indicates that demographic factors such as the age of the investor, his level of income, academic qualification, knowledge and experience on investment have significant influence on his investing behaviour. Positive correlation exists between the academic qualification and the level of income of investors with their risk tolerance level when making investment choice. However, increasing in age at a particular point lead to a negative influence on the investors' risk taking behaviour. Notwithstanding, for something so important to the function of risk management, risk tolerance is occasionally entrenched in risk management structure and processes. This is mainly because the risk tolerance concept is challenging, and the nomenclature is not really and consistently applied across the industry.

The first active classifying and differentiating factor among demographic factors is gender (Bernasek *et al.*, 1998). This is due to the fact that the function of emotional variables risk attitudes is different between women and men. Investors who are females have wider risk aversion in different activities like financial decision making compared to male investor (Graham *et al.*, 2002).

Though, it can be claimed that these characteristics can influence the risk aversion of an individual, it can also be that the risk aversion of a person influences these choices of lifestyle. For instance, marriage leads to an increase in the risk aversion of a person, notwithstanding, individuals who are more risk averse choose to marry (Halek and Eisenhauer, 2001). As revealed in various other studies, the association between risk aversion and family size or marital status is yet to be clear (Outreville, 2014).

Additionally, the literature review on the association between risk aversion and the educational level seems to agree with the opinion that people who are more risk averse have a lesser probability of pursuing a tertiary education particularly university (Outreville, 2015).

Risk tolerance deliberations in companies are insightful, nonetheless challenging. Often, the major problem is the different reference frames for the different stakeholders who are internal. The two major problems are associated with personal perceptions of risk. Having a price technique quantify and analyse risk tolerance will naturally close the gap between various perceptions of stakeholders on risk tolerance application. The firm is, therefore, puts on a track for the engagement and adoption. Rubaltelli *et al.* (2010) revealed that the affective reactions of people assist in explaining decision assessment when people have little information regarding the outcome.

5. Implications and Recommendations

Henceforth, critical appraisal of the literature has outlined the existence of a strong association between risk tolerance/aversion and investment decisions. Likewise, the review has also highlighted how demographic variables can play an important role in defining these links. Prior empirical evidences have outlined that economy that aims to help their people to manage risk in investments in a more responsive manner, offer awareness sessions. Thus, training and development can play an important role to further facilitate. Accordingly, there is a need for economies to have a strategic look at risk factors and their linkage with investment in order to formulate policies to help people make well versed decisions in this regard.

In parallel, there is a strong need for people to look at individual family backgrounds, status, and position and wellbeing prospects to facilitate themselves with responsive investment decisions. Accordingly, there is also a need for people to understand investment criticalities, prior to engaging in any such activities. At the societal level, investment based institutions, financial enterprises and other seasoned entities in the feature can be approached to help in making effective investment decisions. Moreover, such prospects can also provide a considerable support in terms of educating and providing experience through overcoming demographic limitations with regards to effective investment decision making.

The findings of this review have a great tendency of being useful to the financial advisors and investment managers. They can apply some demographic characteristics for differentiating and

categorizing investors into various type of risk-tolerance. Also, the research would add to the general understanding and knowledge in the area of behavioural finance through the provision of relevant results regarding the relationship between demographics and financial risk tolerance/aversion.

Furthermore, financial executives in the same firm often have different opinions on the degree of risk the firm should be ready and willing to take. The environment, which is unsettled, provides a great chance for a real strategic risk manager to lead. However, a risk manager firstly requires being able to exhibit the value accretion that a well-defined view of risk tolerance can contribute to decision making.

6. Conclusions

Series of difficulties were encountered in an attempt to carry out the measurement of risk preferences in a real world setting. Also attention has been centred on the possibility of recovering the risk preference of individuals from their request for assets or by making an observation of the demand for portfolio by individuals. As stated earlier, financial risk tolerance is a multi-faceted concept. Numerous factors can influence the attitude of individual to several choices of taking risk. Researchers and managers of investments have shown much interest in providing answers to the question “what are the factors influencing the perception of individuals’ financial risk?” Related literatures maintained that individuals’ socioeconomic and demographic profile, psychological constructs, and personality type are greatly essential when this question is to be answered.

References

1. Al-Ajmi, J. Y. (2008). Risk tolerance of individual investors in an emerging market. *International Research Journal of Finance and Economics*, 17(1), 15-26.
2. Bajtelsmit, V. L., & Bernasek, A. (2001). *Risk preferences and the investment decisions of older Americans*. AARP, Public Policy Institute.
3. Bajtelsmit, V., & Bernasek, A. (1996). Why do women invest differently than men? *Financial Counselling and Planning*, 7(1): 1-10.
4. Barber, B. M., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *The quarterly journal of economics*, 116(1), 261-292.
5. Barberis, N., & Xiong, W. (2012). Realization utility. *Journal of Financial Economics*, 104(2), 251–271. <https://doi.org/10.1016/j.jfineco.2011.10.005>
6. Barberis, N., & Thaler, R. (2003). A survey of behavioral finance. *Handbook of the Economics of Finance*, 1, 1053-1128.
7. Barsky, R. B., Juster, F. T., Kimball, M. S., & Shapiro, M. D. (1997). Preference parameters and behavioral heterogeneity: An experimental approach in the health and retirement study. *The Quarterly Journal of Economics*, 112(2), 537-579.
8. Bayer, P. J., Bernheim, B. D., & Scholz, J. K. (2009). The effects of financial education in the workplace: Evidence from a survey of employers. *Economic Inquiry*, 47(4), 605-624.
9. Bellante, D., & Green, C. A. (2004). Relative risk aversion among the elderly. *Review of Financial Economics*, 13(3), 269-281.
10. Chaulk, B., Johnson, P. J., & Bulcroft, R. (2003). Effects of marriage and children on financial risk tolerance: A synthesis of family development and prospect theory. *Journal of Family and Economic Issues*, 24(3), 257-279.
11. Christiansen, C., Joensen, J.S. & Rangvid, J. (2006). Gender, Marriage, and the Decision to Invest in Stocks and Bonds: Do Single Women Invest More in Less Risky Assets? *D-CAF working paper*, (18).
12. Cohn, R. A., Lewellen, W. G., Lease, R. C., & Schlarbaum, G. G. (1975). Individual investor risk aversion and investment portfolio composition. *The Journal of Finance*, 30(2), 605-620.
13. Corter, J. E., & Chen, Y. J. (2006). Do investment risk tolerance attitudes predict portfolio risk? *Journal of Business and Psychology*, 20(3), 369.
14. Croson, R., & Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic literature*, 47(2), 448-74.

15. Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association*, 9(3), 522-550.
16. Eckel, C. C., & Grossman, P. J. (2008). Forecasting risk attitudes: An experimental study using actual and forecast gamble choices. *Journal of Economic Behavior & Organization*, 68(1), 1-17.
17. Embrey, L. L., & Fox, J. J. (1997). Gender differences in the investment decision-making process. *Financial Counseling and Planning*, 8(2), 33-40.
18. Faff, R., Mulino, D., & Chai, D. (2008). On the linkage between financial risk tolerance and risk aversion. *Journal of financial research*, 31(1), 1-23.
19. Finke, M. S., & Huston, S. J. (2003). The brighter side of financial risk: Financial risk tolerance and wealth. *Journal of Family and Economic Issues*, 24(3), 233-256.
20. Friend, I. & Blume, M. E. (1975). The Demand for Risky Assets. *American Economic Review* 65(5): 900–922.
21. Grable, J. and R. Lytton, (1998). Investor risk tolerance: Testing the efficacy of demographics as differentiating and classifying factors. *Financial Counselling and Planning*, 9(1): 61-73.
22. Grable, J. E., & Joo, S. H. (2000). A cross-disciplinary examination of financial risk tolerance. *Consumer Interests Annual*, 46, 151-157.
23. Grable, J. E., & Joo, S. H. (2006). Student racial differences in credit card debt and financial behaviors and stress. *College Student Journal*, 40(2).
24. Grable, J., & Lytton, R. (1999). Assessing Risk Tolerance: Do Demographic, Socioeconomic, and Attitudinal Factors Work? *Journal of Family Relations and Human Development/Family Economics and Resource Management*.
25. Graham, J. F., Stendardi Jr, E. J., Myers, J. K., & Graham, M. J. (2002). Gender differences in investment strategies: an information processing perspective. *International journal of bank marketing*, 20(1), 17-26.
26. Gumede, V., 2009. Demographic determinants of financial risk tolerance: A South African perspective. Unpublished B.Com. Hon. Thesis. University of KwaZulu-Natal, Pietermaritzburg.
27. Halek, M. and J. G. Eisenhauer (2001). Demography of Risk Aversion. *Journal of Risk and Insurance* 68(1): 1–24.
28. Haliassos, M. and C.C. Bertaut, (1995). Why do so few hold stocks? *The Economic Journal*, 105(432): 1110- 1129.
29. Hallahan, T. A., Faff, R. W., & McKenzie, M. D. (2004). An empirical investigation of personal financial risk tolerance. *FINANCIAL SERVICES REVIEW-GREENWICH*, 13(1), 57-78.
30. Hallahan, T., Faff, R., & McKenzie, M. (2003). An exploratory investigation of the relation between risk tolerance scores and demographic characteristics. *Journal of Multinational Financial Management*, 13(4-5), 483-502.
31. Harrison, G. W., Lau, M. I., & Rutström, E. E. (2007). Estimating risk attitudes in Denmark: A field experiment. *Scandinavian Journal of Economics*, 109(2), 341-368.
32. Hartog, J., Ferrer-i-Carbonell, A., & Jonker, N. (2002). Linking measured risk aversion to individual characteristics. *Kyklos*, 55(1), 3-26.
33. Hersch, J. (1996). Smoking, seat belts, and other risky consumer decisions: Differences by gender and race. *Managerial and decision economics*, 17(5), 471-481.
34. Holt, C. A., & Laury, S. K. (2002). Risk aversion and incentive effects. *American economic review*, 92(5), 1644-1655.
35. Jianakoplos, N. A., & Bernasek, A. (1998). Are women more risk averse? *Economic inquiry*, 36(4), 620-630.
36. Jianakoplos, N. A., & Bernasek, A. (2006). Financial risk taking by age and birth cohort. *Southern Economic Journal*, 981-1001.
37. Kogan, N. and M. A. Wallach (1964). *Risk Taking: A Study of Cognition and Personality*, Holt, Rinehart & Winston.
38. Lin, F. T. (2009). Does the risk aversion vary with different background risk of households? *International Research Journal of Finance and Economics*, 34(34), 69-82.

39. MacCrimmon, K.R. and D.A. Wehrung (1986). Taking risks: The management of uncertainty. New York and London: The Free Press.
40. McInish, T. H. (1982). Individual investors and risk-taking. *Journal of economic psychology*, 2(2), 125-136.
41. Morin, R. A., & Suarez, A. F. (1983). Risk aversion revisited. *The Journal of Finance*, 38(4), 1201-1216.
42. Olsen, R. A. (1998). Behavioral finance and its implications for stock-price volatility. *Financial analysts journal*, 10-18.
43. Outreville, J. F. (2014). Risk aversion, risk behavior, and demand for insurance: A survey. *Journal of Insurance Issues*, 158-186.
44. Outreville, J. F. (2015). The relationship between relative risk aversion and the level of education: a survey and implications for the demand for life insurance. *Journal of Economic Surveys*, 29(1), 97-111.
45. Palsson, A. M. (1996). Does the degree of relative risk aversion vary with household characteristics? *Journal of economic psychology*, 17(6), 771-787.
46. Ricciard, V. (2008). The Psychology of Risk: The Behavioral Finance Perspective. *The Handbook of Finance*, 85–111. <https://doi.org/10.1111/j.1539-6924.2008.01185.x>
47. Riley, W. B. and K. V. Chow (1992). Asset Allocation and Individual Risk Aversion. *Financial Analysts Journal* 48(6): 32–37.
48. Roszkowski, M. J., Davey, G., & Grable, J. E. (2005). Insights from psychology and psychometrics on measuring risk tolerance. *Journal of Financial Planning*, 18(4), 66.
49. Rubaltelli, E., Pasini, G., Rumiati, R., Olsen, R. A., & Slovic, P. (2010). The influence of affective reactions on investment decisions. *Journal of Behavioral Finance*, 11(3), 168-176.
50. Schooley, D. K., & Worden, D. D. (1996). Risk aversion measures: Comparing attitudes and asset allocation. *Financial services review*, 5(2), 87-99.
51. Schubert, R., Brown, M., Gysler, M., & Brachinger, H. W. (1999). Financial decision-making: are women really more risk-averse? *American Economic Review*, 89(2), 381-385.
52. Sunden, A. E., & Surette, B. J. (1998). Gender differences in the allocation of assets in retirement savings plans. *The American Economic Review*, 88(2), 207-211.
53. Sung, J., & Hanna, S. (1996). Factors related to risk tolerance. *Journal of Financial Counselling and Planning*, 7, 11.
54. Von Neumann, J., & Morgenstern, O. (2007). *Theory of games and economic behavior (commemorative edition)*. Princeton university press.
55. Watson, J. and McNaughton, M. (2007). Gender Differences in Risk Aversion and Expected Retirement Benefits, *Financial Analysts Journal*, 63(4), 52-62.
56. Yao, R., S.D. Hanna & Lindamood. (2004). Changes in financial risk tolerance 1983-2001. *Financial Services Review*, 13, pp. 249-266.
57. Yeske, D. (2014). Policy-Based Financial Planning as Decision Architecture. *Journal of Financial Planning*, 27(12), 38.