Profiling the Risk Tolerance of Higher Education Students in Zambia

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ABSTRACT: There is overwhelming consensus among researchers that investment behaviour is anchored on tolerance towards risk. Therefore, all strategies and policies intended to promote investment behaviour should be anchored on understanding the Financial Risk Tolerance (FRT) profile of the target group. The current study sought to profile the FRT of higher education students as a key target group for future economic wellbeing and investment performance in Zambia. The FRT profile will help to understand the extent to which higher education students are willing to take on risk, thus, appropriate strategies and policies can be formulated to influence desirable investment behaviour. The study adopted the descriptive research design to systematically describe the FRT of higher education students. Data was collected from final year masters students at University of Lusaka using an electronic questionnaire.Descriptive statistics was used to analyse the data. The study established that higher education students have an aggressive attitude towards risk. This means that higher education students are predominantly willing to take on more risk. Coupled with appropriate motivation from policy makers and other stakeholders such as investment companies, higher education students are good agents for economic emancipation through active involvement in investment activities in Zambia. The study recommends that policy makers should create an enabling environment that promotes and enables the prospective investors to take on the desirable level of risk through investments. It is also recommended that other stakeholders such as investment companies should design financial products that exhibit ownership characteristics or stock like properties, if they are to have sufficient business relationships with this market segment.

Keywords: Risk Tolerance, Behavioural Finance, Investment behaviour.

I. INTRODUCTION

Financial crises fuelled by risk and uncertainty have shown that comprehensive risk appraisal is paramount in risk management (Hoffmann, 2018). Policy decisions and the subsequent resource allocation benefits from FRT measurement for financial market development (Heenkenda, 2014). Behavioural public policy is increasingly being utilized to model realistic public behaviour and perceptions into policies. Lack of investigations to understand the FRT profiles of Zambian investors limits the extent to which policies and strategies by government and financial entities can effectively be developed and implemented.

Few empirical studies have been carried out on the influence of demography on FRT in global south countries. Even more scarce are studies on the FRT of higher education students (Peng, 2020). The dynamic demographic influences on FRT means that individuals face new uncertainties that have no historical data for comparison or future prediction such as those faced during the COVID-19 pandemic. Several studies have noted that FRT is subject to change, especially in light of significant market disruptions (Guiso et al., 2013; Hoffmann et al., 2013; Yao & Curl, 2011). Rabbani et al. (2017) noted that changes in FRT, while present in their data, were modest and generally not large enough to warrant a change in portfolio holdings. Hoffmann et al. (2013), in a similar vein, argued that even when FRT appears to change, the variation is temporary. Studies carried out during the COVID-19 pandemic found that there was a general reduction in aggregate levels of FRT observed during the initial peak of COVID-19 period, with the most significant drop being exhibited by those who were 25 years of age or younger (Heo, Rabbani & Grable, 2020). However, it has been argued that any noticeable changes, either at the individual or aggregate level,

will rarely ever be large enough to matter in practice (Guillemette & Finke, 2014). The question in Zambian therefore is: where does this average lie regarding prospective student investors.

Regardless of the stability of FRT, risk tolerance of target groupsmust be constantly investigated (Holton, 2004), especially for purposes of investment engagements. Previous studies have focused on the global north with little empirical exploration into the global south. A multitude of global north studies have investigated demographic characteristics' influence on FRT. Consensus on income and education's positive influence on FRT has been concluded. Gender studies have shown men to exhibit more FRT than women, while marital status revealed mixed results. The risk tolerance of different target groups is unknown in the global south countries such as Zambia as no studies have been conducted to this effect. The effect of demographic characteristics on FRT also remains unclear and indeterminate in the global south countries. The current study soughtto profile the FRT of higher education students as a key target group for future economic wellbeing and investment performance in Zambia.An understanding of the risk tolerance profile of this target group will be an important input to policy development and investment strategy development for other stakeholders such as investment companies.

General Objective

The general objective of this study was to profile and understand the risk tolerance of higher education students in Zambia and determine the extent to which students are willing to take on financial risk.

II. LITERATURE REVIEW

Risk tolerance is the summation of all the fear and greed trade-offs available to an individual. FRT is defined as the maximum amount of uncertainty that an individual is willing to accept when undertaking a financial decision (Grable, 2000). It is an individual's willingness to engage in a financial behaviour where the outcomes of the decision are unknown and potentially costly (Grable et al, 2016). Basically, FRT wishes to know what is an individual's willingness and ability to endure uncertain financial outcomes in the anticipation of financial returns.

FRT definition has evolved from narrow to broad analysing real consequences (Aven, 2012). Behavioural policies have gained traction to attempt a multidimensional pluralistic approachwhere public behaviour is utilised to select the most appropriate policy.

The majority of FRT studies focus on demographics as these characteristics are of importance to financial planners, researchers and relevant policy makers (Evangelou, 2020). The consensus of studies has shown high risk tolerance to be associated with individuals who are younger, male, single, white ethnicity, self-employed and have attained high levels of formal education (Grable, 1999). Pioneering demographics and FRT studies utilised various theories from expected utility hypothesis, efficient market hypothesis and cognitive theory. The studies often had varying approaches, incomparability and subjectivity. One example is the 1974 study by Baker and Haslem. The researchers acknowledged the use of 'judgement' in their methodology and declaredtheir technique 'not exhaustive' (Baker & Haslem, 1974).

Propelled by its inclusion in the United States' national census, the Survey of Consumer Finances (SCF) FRT question became the scale of use by researchers and practitioners due to its simplicity, validity and comparability. However, critiques argued that it may not be a comprehensive FRT measure (Hanna et al, 2001). Rather, an individual's response is situational (Hanna & Chen, 1997) and therefore the SCF is a measure of an individual's financial situation. Despite the SCF's low reliability (Grable &Schumm, 2007) it still remains one of the most widely used in literature. The SCF question simply asks:

Which of the following statements comes closest to the amount of financial risk that you are willing to take when you save or make investments?

1. Take substantial financial risk expecting to earn substantial returns

2. Take above average financial risk expecting to earn above average returns

3. Take average financial risk expecting to earn average returns

4. Not willing to take any financial risk.

Given the challenges of the SCF, a more comprehensive multidimensional FRT measure, the Grable and Lytton 13-item risk tolerance scale (GL-RTS) is popularly utilised in empirical studies usually alongside the SCF measure. These two widely used measures of risk tolerance have been utilized as the standard measure of FRT. Validity and reliability testing (Yang, 2004; Gilliam et al, 2010; Grable &Schumm, 2010) of the GL-RTShas further propelled its use. A study of 160,000 individuals' responses to the GL-RTS spanning 2007 to 2013 showed the scale's robustness across the years (Kuzniak, 2015).

The sparse studies focusing on HEI respondents have varying conclusions. A few studies using respondentsfrom non-global north countries have been carried out. Shah et al., 2020 utilised the GL-RTS on 382 business students in 6 cities in Pakistan. This study tested the level of significance of demographic factors to FRT. Findings were similar to global north studies with 7 out of 8 demographic factors showing significance (Shah et al., 2000). Another study carried out utilizing a 20-item questionnaire on 1075 staff members of an HEI in the United States found higher FRT in men, older respondents, married and those with higher formal education (Grable, 2000). Evangelou (2020) utilised both the SCF and GL-RTS on 396 students from two Higher Education Institutes (HEIs) in South Africa. The study's GL-RTS measured the student's investment and speculative risk and found both to be of 'medium' FRT (Evangelou, 2000). The SCF finding of the students tallied with global north studies that utilised the GL-RTS.

The most studied demographic factor of age (Evangelou, 2020) has contradictory schools of thought. Pioneering studies found an inverse relationship between age and FRT (Vroom &Pahl, 1971). This first school of thought has received support throughout the decades in research (Baker &Haslem, 1974; Grable, 2000). This school of thought proposed the mechanism of a shorter time horizon leading to older individuals being cautious of risk (Cupples et al., 2013). A global south study carried out on 320 South African respondents agreed with the above inverse relationship between age and FRT (Strydom & Metherell, 2012). Another global south study of 330 South African HEI found no significance between age and FRT (Ramudzuli&Muzindutsi, 2015). Critiques of the above schools of thought claimed a positive relationship between age and FRT with older individuals above the age of 65 being less cautious (Riley & Chow, 1992).

The pioneering study by Wallach &Kogan in 1959 utilised choice dilemmas and found that women to be less thrill-seeking than men (Wallach &Kogan, 1959). Studies sincehave concluded the same findings (Grable &Roszkowski, 2007) and therefore the consensus in literature is that of men possessing a higher FRT (Cupples et al., 2013). Empirical studies utilising both the SCF regression methodology (Sung & Hanna, 1996) and the GL-RTS (Lytton & Grable, 1997) cemented this assertion that women possess lower risk-taking propensities. In the global south study by Ramudzuli and Muzindutsi (2015) no significance between gender and FRT was found accredited to the gender distribution of the 330 respondents.

Marital status and FRT studies have had mixed results. Married couples' pooled incomes suggest a higher FRT (Grable 2000; Chang et al., 2004). However, the FRT between single males and couples has been found to be indistinguishable (Chang et al., 2004; Sung & Hanna, 1996). Other studies have found that the dependency of another partner reduces one's FRT (Grable &Joo, 2004). The level to which an individual completes formal education is assumed to be correlated to the FRT of an individual. Consensus shows a positive relationship in which individuals with higher levels of formal education exhibit higher FRT (Grable &Joo, 2004). It is proposed this relationship is due to an individual's increased capacity to evaluate financial risks (Hallahan, Faff, & McKenzie, 2004). Another theory proposed education to change an individual's social dispositions (Cupples et al., 2013).

Some previous studies noted that FRT is subject to change, especially in light of significant market disruptions (Guiso et al., 2013; Hoffmann et al., 2013; Yao & Curl, 2011). Those who believe that FRT is subject to meaningful variability argue that market volatility drives how investors establish risk and return expectations. Market volatility and uncertain financial events cause investors to become less willing to take financial risk. The opinions of newsletter authors have been shown to sway investors FRT (Clarke & Statman (1998).

III.   RESEARCH METHODOLOGY

Research Design

This study adopted the descriptive research design to profile and understand the financial risk tolerance of higher education students in Zambian. This design allowed the researchers to accurately and systematically profile the risk tolerance of higher education students for policy and investment strategy formulation. This establishment will enable policy makers and investment companies to align business activities and policy to students' willingness to take on risk. The descriptive research design is most appropriate for this study because it is good for describing attitudes and behaviours on a particular subject matter (Vanderstoep & Johnston, 2009).

Population of the Study

The population for this study included all final year masters students at University of Lusaka. For any student to be included in the study, they needed to be 18 years and above and in stage three (3) or four (4) of their masters program. This was to ensure that the only respondents that are capable of making mature and informed investment decisions (Ferreira& Dickason-Koekemoer, 2020) were included in the study. This is also consistent with Virlics (2013) who adds that the quality of investment decisions is influenced by knowledge of the decision maker. The total population of Masters Students in final year at University of Lusaka was found to be 786.

Sampling and Sampling Procedures

Rather than a sample, this study considered a census so that sampling was not necessary. The study considered all the 786 students for recruitment to the study. This population was considered to be small to be analysed holistically but sufficient to generate reliable conclusions and recommendations based on statistical analysis (Bowerman et al, 2015). In line with the central limit theorem, the respondents should not be less than 30 in any statistical analysis for reliable results and conclusions (Newbold et al, 2013; Bowerman et al, 2015)

Data Collection

Data was collected by means of an electronic questionnaire that was sent to final year masters students at University of Lusaka. The questionnaire consisted of questions that sought to obtain demographic data from the respondents. The questionnaire also included the Survey of Consumer Finance (SCF) scale to measure financial risk tolerance of the respondents. Even though the scale explains financial risk tolerance to a limited extent, Grable and Lytton (2001) contend that the scalemeasures attitude and behaviour towards investments. Therefore, the questionnaire also included the Grable and Lytton 13-item risk tolerance scale (GL-RTS). The questionnaire was sent to a total of 786 potential investors and 448 respondents successfully answered and submitted the questionnaire.

Data Analysis

Descriptive statistics was used to describe the data collected in relation to the objective of the study. Data was summarised in statistical graphs, tables and numerical summary measures to reveal any underlyingpatterns in the study variables. A consolidated consideration of all explanatory variables was made to comprehensively describe the FRT of higher education students in Zambia. Berenson et al (2012) provide that descriptive statistics is effective in organising and describing data for informed decision making. Visualizing data through tables, graphs and other summary statistics enable researchers to have accurate understanding of the study variables and associated relationships (Groebner et al, 2011).

DATA ANALYSIS AND FINDINGS

Demographics

While Roszkowski et al (1993) identified 12 demographic factorsthis study considered six demographic factors as independent variables. As depicted in the pie chart in figure 1, the larger part of our sample consisted of the age group between 18 to 29 years of age with at least part being above 60 years of age. The large part of the sample had 45% followed by the age group between 30 to 39 and 40 to 49 years with 34% and 17% respectively. The sample consists of mature individuals that are capable of making informed decisions.
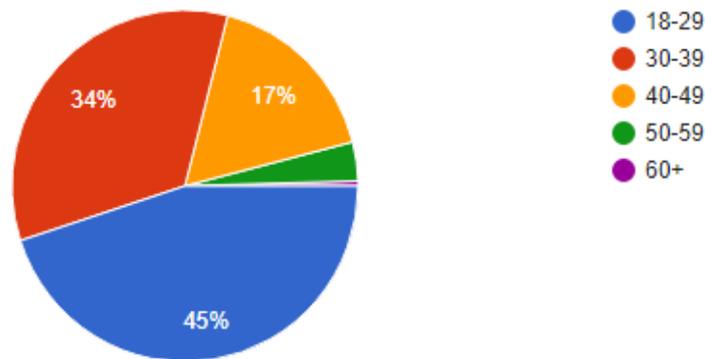

Figure 1: Age distribution of the respondents

The pie chart in figure 2 shows the ethnicity of the respondents. As can be seen, the respondents were predominantly of African origin with 97.3%. This accounted for a total of 435 responses. The least response of 0.7% was obtained from respondents of white origin with a total of 3 responses. It can be deduced that this study had a bias towards respondents of African origin in line with the objective of understanding the risk tolerance of Zambian investors. Therefore, the findings of this study may have a limited application to a population that have different behavioural characteristics toward risk from that of Africans, specifically of Zambian origin.
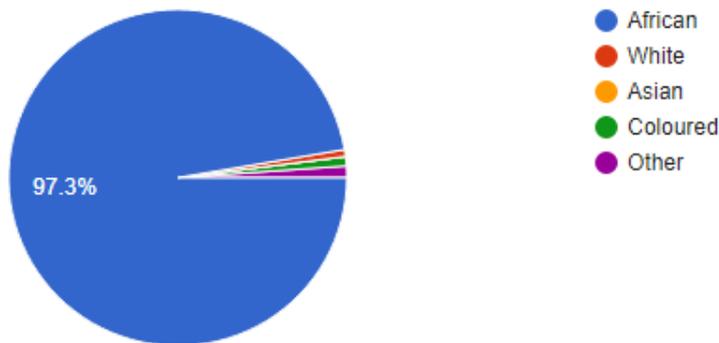

Figure 2: Ethnicity of Respondents

Out of the 447 respondents, 52.3% were male and 47.7% were female. This accounted for 234 male respondents and 213 female respondents. This is shown in figure 3 below.
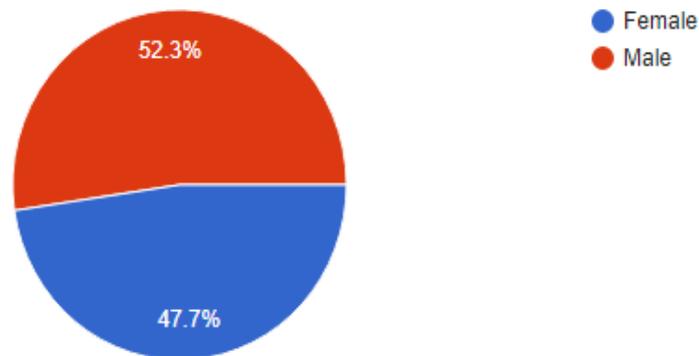

Figure 3: Gender of respondents

Out of 447 responses, 44.7% indicated that they were married, while 52.1% and 3.1% indicated that they were unmarried and divorced, respectively. This shows that a good size of our sample comprised of individuals that had responsibilities to provide for their families. A combined number of married and divorced, totalled 214 respondents, as individual that needed to make critical, conscious and informed decisions as far as investment is concerned. The pie chart in figure 4, shows the distribution of the respondents in terms of their marital statuses.
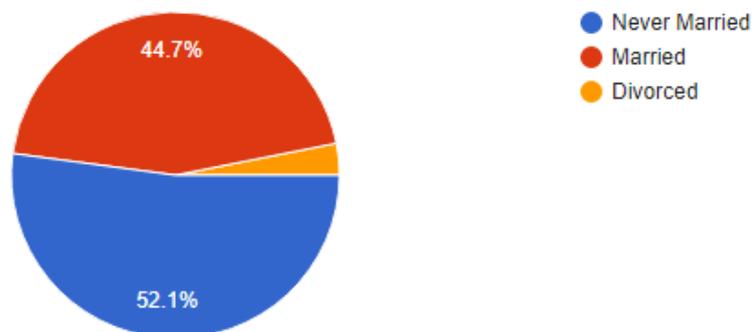

Figure 4: Marital Status

Risk Tolerance

Table 1 below shows the summary of responses on risk tolerance as defined by the survey of consumer finance aimed at determining attitude towards choice of investment.

Table 1: Risk Tolerance with SCF

Attribute	Responses	Average score	Risk attitude
Willingness to take risk in investment	447	2.081	Aggressive

According to the SCF model of investor risk tolerance, it can be deduced from Table 1 that university students have an aggressive attitude towards risk taking. This implies that they are expected to exhibit a risk seeking behaviour in making investment decisions.

Table 2 to Table 5 represent the findings of risk tolerance behaviour according to the 13 items of risk tolerance scale defined by Grable and Lytton Financial Risk Tolerance Scale (GL–RTS).

Table 2: Risk-Taking

Attribute	Responses	Average score	Risk attitude
Ability to win an Argument	447	2.92	Aggressive
Willingness when travelling to take new routes	447	2.34	Moderate
Willingness to follow traffic rules	447	1.58	Conservative
Willingness to try out new things and experiences	447	1.70	Aggressive

The results in Table 2 show that the respondents are predominantly aggressive financial risk takers. This is consistent with the results of the SCF model in Table 1. Similarly, university students are expected to exhibit risk seeking behaviour in making investment decisions.

Table 3: Financial Risk

Attribute	Responses	Average score	Risk attitude
Self-description of risk taking	447	2.185	Moderate
Determinants of financial decisions	447	2.405	Moderate
Risk taking and situational variation	447	2.59	Aggressive
Risk and financing options	447	1.305	Conservative

Table 3 reveals that the respondents predominantly exhibited moderate risk-taking behaviour when it comes to financial risk taking. This means that university students are likely to exhibit an indifferent risk-taking behaviour when it comes to it comes to making financial decisions.Thus, substantial justification will have to be made to the students if they are to be convinced to make either a risk or non-risk investments. This also means that students are more cautious in making financial decisions. Substantial marketing information from investments companies will have tobemade to influence financial risk-taking behaviour from the students.

Table 4: Speculative Risk

Attribute	Responses	Average score	Risk attitude
Presentation of inheritance	447	2.369	Aggressive
Remuneration conditions	447	2.492	Aggressive
Game options	447	2.479	Moderate
Closing down options	447	2.36	Moderate

Table 4 shows that prospective investors at the University of Lusaka are much likely to exhibit moderate investment risk attitudes as they are likely to exhibit aggressive behaviour. This implies that university students are more likely going to respond to speculative investment opportunities even through a good number will also be cautious about it. Even though a good number of university students are likely to respond positively to speculative risk-taking opportunities, substantial effort is supposed to be madefor the prospective risk takers to take the opportunity.

Table 5: Investment Risk

Attribute	Responses	Average score	Risk attitude
Managing investments	447	1.646	Conservative
Willingness to invest	447	3.645	Moderate
Appealing investments	447	2.013	Moderate
Investment choices	447	2.371	Aggressive
Willingness to lose money	447	3.295	Aggressive

Table 5 shows that the respondents are equally willing to commit financial resources in highly risk and moderately risk investment options and forgo current consumption to more consumption capability in the future. This means that university students are as much likely to exhibit risk taking behaviour as they are likely to be indifferent. Therefore, investment companies and policy makers may have to be more actively involved in influencing investment behaviour rather than taking a passive position in the whole process.

IV. CONCLUSIONS AND RECOMMENDATIONS

There is overwhelming consensus among various researchers that investment behaviour is anchored on behaviour towards risk. If the government is to influence economic activities through private sector involvement in economic activities, an understanding of risk tolerance of the target audience is inevitable. Entrepreneurship policies and other policies intended to influence private sector involvement in economic activities have to be rooted into risks tolerance of the target group of individuals. Correspondingly, if investment companies are to influence would be investors, it is inevitable that they understand the behaviour of their clients towards risk. If the financial products of investment companies are to be meaningful, they have to reflect the risk tolerance of the target group. Any mismatch between the two, will result into the financial products being irrelevant to the target audience. It is also important to understand the variability of risk tolerance behaviours over time and by situation in designing effective business strategies and economic policies.

The results show that students at University of Lusaka are generally aggressive towards risk. This is drawn from the combination of all risk attitudes exhibited in the various risk attitude measurements in the study. A combination of risk tolerance indicators, show that university students have a positive attitude towards risk. This means that university students are willing to take on more investment risk. Coupled with the appropriate motivation from key players such as investment companies and policy makers, university students are reliable agents of enhanced economic activity. Investment companies will also do well to design financial products that exhibit ownership characteristics or stock like properties, if they are to have sufficient business relationships with this market segment. Policy makers will have to create an enabling environment that promotes and enables the prospective investors to take on the desirable level of risk investments

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