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Effect of Financial Literacy and Risk Perception on Investment Choice

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ABSTRACT

The objective of this study was to assess the effect of financial literacy, and risk perception on investment choice. A quantitative design with a survey as a strategy was adopted, with a sample of 172 respondents. Data was analysed using one-way analysis of Variance (ANOVA) and Multi logistic regression. The results from the ANOVA tests shows that although the differences in means were observed among investment choses, they were not statistically significant at 0.05% as the observed P-values were more than 0.05 (0.847, 0.889 and 0.263), indicating that that Risk perception and financial literacy do not significantly affect investment choice. Further the findings show that 56% of the respondents chose real estate compared to 44% who chose financial assets an indication that individual investors in Zambia prefer real estate to financial assets. Unlike other studies, this study is unique in that it included real estate as part of the investment options and found that real assets are more preferred to financial assets in Zambia.

Keywords: Financial literacy, risk perception and investment choice

INTRODUCTION

Increasing one's wealth and preparing for one's future income are concerns many people face today. One way of dealing with such problems is by investing. Investment incurs an immediate cost in the expectation of future rewards (Dixit and Pindyck 1994). However, making an investment decision is complicated as many investment choices are available, and each has risks. Fahmi and Hadi (2011) identify two broad forms of investment; the first one is real Investment, which is an investment in real assets that generally involves investing in tangible assets such as land, machinery, gold and buildings, while the second is a financial investment which requires investment in the form of written contract assets, such as common stock, bonds, savings and deposits. Financial assets offer convenience, liquidity, and efficiency compared to tangible assets. On the other hand, tangible assets are safer because they do not rely on a public marketplace to derive value for the owner and are more inflation-resistant. With this in mind, one would expect individuals to diversify their portfolios and combine financial and tangible assets.

The Prospect Theory by Kahnemann and Tversky (1979) assert that people do not

always act according to standard finance theory under risk and uncertainty; they include psychological factors and random behaviours to rational choices. Furthermore, people care more about avoiding possible loss than possible gain. Sentimental and cognitive factors, which are put into action by prejudices, can also affect the investment choices of individuals under specific circumstances (Ricciardi (2004)).

Globally, Researchers have investigated the factors that influence investment decisions. Al-Tamimi (2009) found a significant relationship between financial literacy and investment decisions. Similarly, Mugo (2016) and Kumari (2020) found that financial literacy positively affects investment decisions. Mwathi (2017) revealed that financial knowledge and skills are significant in determining personal financial decisions.

Aren and Zengin (2016) add demographics and risk perception as other factors influencing financial decisions. Hasanuh (2020) also concluded that financial literacy and attitude significantly affect personal investment decisions. Investment decisions are significantly influenced by financial literacy and certain behavioural factors (Alaaraj and Bakri 2020); Harsoyo (2021) revealed that investor awareness has a positive effect on investment decisions. Further (Mushafiq et al. (2023) indicate that risk aversion negatively relates to investment choices.

In Zambia, the rate of investment in financial assets is meagre. According to the National Strategy on Financial Education for Zambia 2019–2024, only about 0.3% of Zambians use investment products like bonds and shares. This raises the question of why so few people invest in Zambia's financial assets. Investment behaviour is affected by many psychological, socio-cultural, and environmental factors. However, in Zambia's case, what has contributed to the low investment rate in financial assets is unclear. Therefore, the aim of this study is to assess the effect of financial literacy and risk perception on investment choice. Further, a critical review of the existing literature has shown that previous studies looked at investment with a focus on financial assets only. This study, however, includes tangible assets as part of the investment choice options. Including tangible assets is essential to assess if they are a preferred investment option to financial assets.

LITERATURE REVIEW

Researchers have expressed several definitions of financial literacy, including those of Servon and Kaestner (2008), who stated that financial literacy is a person's ability to understand and utilise financial concepts. Furthermore, Lusardi and Mitchell (2011) found that individuals with high levels of financial literacy understand compound interest rates. Agarwalla (2013) stated that individuals with financial literacy will realise the time value of money and participate in the formal financial and stock markets. Financial literacy refers to events that increase or enhance the participant's knowledge, skills and confidence in managing finances or making financial decisions (Arianti, 2017). Quite a few studies have revealed financial literacy interventions in an individual's financial decision-making processes (Abdeldayem, 2016; Janor *et al.*, 2016; Hassan Al-Tamimi and Anood Bin Kalli, 2009). Lack of financial knowledge is the most significant factor influencing a person not to invest in financial asserts (Jureviciene and Jermakova, 2012). The study by Saputro and Lestari (2019) found that financial literacy significantly affected investment decisions among the students in Jakarta. However, a recent Arianti (2017) survey reported an inverse relationship between investment choice and financial literacy.

The term risk has been used in several disciplines and defined differently. In behavioural finance, risk refers to the likelihood of the business losing a client; from the client's perspective, it's a likelihood of losing the principal investment (Shafi, 2011). Risk tolerance is not only related to the amount of individual wealth, but other life experiences and differences in social and cultural backgrounds (Olsen and Cox, 2001).

Additionally, Shafi (2011) explains that individual risk perception is directly associated with investment behaviour, and the association level is very high. From the review, it can be noticed that researchers have found mixed results on the effect of financial literacy and risk perception on investment.

DESIGN/METHODOLOGY/APPROACH

This study aims to assess the effect of financial literacy and risk perception on investment choice. Under methodology, we discuss the Research design, sample and Research variables.

Research Design and Sample

This paper adopted a quantitative design with a survey as a strategy. The study population consisted of 279 university students already working but advancing their business and social science studies at Mulungushi University. The sample of 172 was obtained using a sample formula =. Stratified random sampling was employed to pick the respondents. The groups were divided into two: those doing business studies and those doing social sciences. This sample was believed to be representative of potential individual investors as these students come from all parts of Zambia. In similar studies, Arianti (2018) and Aren and Zengin (2016) have used such a population. Since the investment choice variable was categorical, data was analysed using one-way analysis of Variance (ANOVA) and Multi-logistic regression.

Research Variables

The research variables were investment choice as the dependent variable, while financial literacy and risk perception were independent variables. Investment decision generally means the decisions investors make regarding where, how, and how much resources will be invested in various financial assets (Sindhu and Kumar (2014). Similarly, Fitra et al. (2018) defined investment decisions as the decisions taken by individual investors when investing in shares. Hence, in this study, investment choice was defined as the decisions the individual investors make when given the option to invest in stocks, bonds, fixed deposits, and real estate. This was measured by asking respondents to state what they could invest in among the investment options (stocks, bonds, fixed deposits and real estate (farm or buildings)) given a certain amount of money. Similar studies, such as Aren and Zengin (2016), measured investment choice similarly.

The independent variable, financial literacy, was measured using a two-dimensional set of questions (simple and advanced) developed by Rooji and Lusardi (2011) scale.

Risk is linked with how much investors care about the likely result of actions occurring in the future and how this will move the investment outcome (Renn (1998)). This study measured risk perception based on the Grable and Lytton Risk Tolerance Scale (Grable. and Lytton 1999). This measure of risk perception is a reliable measure (with a Cronbach's reliability coefficient (alpha) of above 0.70), which is extensively used by many financial consultants and scholars to evaluate a person's readiness to participate in risky financial behaviour (Kuzniak et. Al. (2015).

DATA ANALYSIS

This section gives the Sample statistics, scale validity and reliability and the Findings.

Data and Sample Statistics

Data were collected using the survey method, through the questionnaire, from 172 respondents. Table 1 gives a summary of the sample statistics.

Table 1: sample statistic

Gender	38% female	62 %Male
Marital status	71% Married	29% Single
Age	45% Between 18 and 35	55% above 35
Study orientation	63 % Business	37% Social science

Out of the respondents surveyed in the study, 38% were female, while 62% were male. 71% were married, and 29% were single. 45% were between 18 and 35 years old, while 55% were above 35. One hundred nine were from the school of business studies, while 63 were from social sciences (non-business). Those from the school of business studies were analysed separately from those from the social sciences to avoid bias. Business students might better understand finance and investment than those from social science.

Scale Validity and Reliability

The variables in this study included financial literacy, Risk perception, and Investment choice. Financial literacy was measured by the number of accurate responses to the related questions using a two-dimensional set of questions (simple and advanced) developed by Rooji and Lusardi (2011). Risk perception was measured based on the Grable and Lytton Risk Tolerance Scale (Grable. and Lytton 1999). Although the Grable and Lytton Risk Tolerance Scale is a reliable measure (with a Cronbach's reliability coefficient (alpha) of above 0.70 and extensively used by many financial consultants and scholars, Confirmatory factor analysis was done, which gave a Cronbach's Alpha of 0.72, which is considered to be good. Table 2 shows the reliability Statistics for Risk.

Table 2: Reliability Statistics Risk

Cronbach's Alpha	Mean	Variance	N of Items
0.722	26.9128	30.653	12

RESULTS

To investigate whether investment choices are affected by finance literacy and risk, a one-way analysis of Variance (ANOVA) test was performed. Further post hoc tests were performed where the ANOVA showed significant mean differences. However, descriptive statistics were performed before the ANOVA.

Descriptive statistics

Investment choices were measured as a dependent variable by asking respondents to choose their investment preference among stocks, bonds, fixed bank deposits, Houses, and Farms. Stocks, bonds, and fixed bank deposits were grouped as financial assets, while Houses and farms were grouped as Real estate. Table 3 shows the descriptive results for investment choice.

Table 3: Descriptive statistics

		Business group		Non-Business group	
		Frequency	Percent	Frequency	Percent
Investment choice	Bank deposit	13	12%	6	10%
	Stocks	20	18%	12	19%
	Bonds	23	21%	5	8%
	House/farm	53	49%	40	63%
	Total	109		63	
Basic Financial Literacy		Score/5	Percent	Score/5	Percent
	Bank deposit	2.7	54%	2.1	24%
	Stocks	2.4	48%	2.1	24%
	Bonds	2.4	48%	1.8	36%
	House/farm	2.6	52%	2.4	48%
	Mean score	2.53	51%	2.1	33%
Advance Financial Literacy		Score/12	Percent	Score/12	Percent
	Bank deposit	4.8	40%	4.1	34%
	Stocks	4.7	39%	3.9	32%
	Bonds	4.9	41%	1.4	12%
	House/farm	4.8	40%	4	33%
	Mean score	4.8	40%	3.3	28%
Risk		Score/47	Percent	Score/47	Percent
	Bank deposit	25.4	54%	26.9	57%
	Stocks	26.9	57%	27.9	59%
	Bonds	25.6	54%	27.4	58%
	House/farm	26.3	56%	27.9	59%
	Mean score	**26.1**	**55%**	**27.5**	**58%**

As can be observed, 49% of the respondents in the business group chose house and farm (real estate), while 51% chose financial assets (12% deposit,18% stocks, and 21% bonds). In the non-business group, 63% of the respondents chose a house and farm (real estate), compared to 37% who decided on financial assets (10% deposit, 19% stocks, and 8% bonds). 56% chose real estate, while 44% chose financial assets.

The results for financial literacy indicate that in the business group, on average, participants got 2.55 out of 5 (51%) of basic questions correctly. The average results for advanced literacy were 4.8 out of 12(40%). In the non-business group, the results indicate that, on average, participants got 2.1 out of 5 (33%) of basic questions correctly, while the average results for advanced literacy were 3.3 out of 12(28%).

Under Risk perception, the mean score for the business respondents was 26.1, representing 55%, while non-business had 27.8, representing 58%. The mean score for both groups was 26.8, representing a 57% score.

Analysis of Variance (ANOVA)

Both samples were subjected to a one-way ANOVA test to investigate whether investment choices are affected by finance literacy and risk. The results are shown in Table 4.

Table 4: ANOVA test results

	Business group		Non-Business group	
Variable	F	Significance (0.05)	F	Significance (0.05)
Basic Financial Literacy	0.345	0.847	0.480	0.750
Advanced financial Literacy	0.283	0.889	0.541	0.707
Risk	1.33	0.263	0.42	0.996

The results show that although the differences in means are observed, they are not statistically significant at 0.05% as the observed P-values for all three variables are more than 0.05(0.847, 0.889, and 0.263 for Basic financial literacy, advanced financial literacy, and Risk perception, respectively). Since the ANOVA test results showed no significant difference in means, no further post hoc tests were necessary.

Further tests were done to examine the effect of demographic factors like gender, marital status and age on financial literacy and risk perception. For this, independent sample t-tests were conducted for gender and marital status, and one-way ANOVA was performed on the different age groups. The result is shown in Table 5.

Table 5: Results for Effect of Gender, Marital status and Age on Financial literacy and Risk

		Business group			Non-Business group		
Variable	**Gender**	**Mean**	**T test**	**Sig**	**Mean**	**T test**	**Sig**
Basic Financial Literacy	Male	2.6324	-.102	.919	1.9286	-1.258	.213
	Female	2.4516			2.3878		
Advanced Financial Literacy	Male	2.2118	1.686	.095	1.5234	-1.393	.169
	Female	1.9161			1.7742		
Risk	Male	25.99	-1.867	.065	28.298	.622	.537
	Female	27.99			27.516		
	Marital Status	**Mean**	**T test**	**Sig**	**Mean**	**T test**	**Sig**
Basic Financial Literacy	Married	2.5915	-.102	.919	1.9286	-1.258	.213
	Single	2.5667			2.3878		
Advanced Financial Literacy	Married	2.0775	.558	.578	1.4583	-1.114	.270
	Single	2.1767			1.7007		
Risk	Married	26.37	-.392	065	29.868	1.638	.107
	Single	26.78			27.334		
	Age	**Mean**	**F-Test**	**Sig**	**Mean**	**F-Test**	**Sig**
Basic Financial Literacy	18-35	2.7600	1.563	.214	1.8929	2.816	.068
	36-41	2.4103			2.6190		
	Above42	2.3333			2.5714		
Advanced Financial Literacy	18-35	2.0583	3.744	**.027***	1.4286	2.458	094
	36-41	1.8269			1.8452		
	Above42	2.4206			1.7857		
Risk	18-35	28.1544	3.775	**.026***	2.4368	3.290	**0.044***
	36-41	26.276			2.3333		
	Above42	24.7908			2.0879		

*The mean difference is significant. Ant is at the 0.05 level.

The results showed no significant difference in means for males and

females, married and single, in financial literacy and risk perception for both business and non-business groups. However, there was a significant difference among the age groups in advanced financial literacy and risk for the business group at the 0.05 significance level. Among the non-business group, a significant difference in means among the age groups was observed in risk.

To further determine which age group the differences were coming from, the LSD post hoc tests were performed. Table 6 shows the results.

Table 6: LSD- Multiple Comparisons results

	Business group			Non-Business group	
	Age	Mean difference	Sig	Mean difference	Sig
Advanced Financial Literacy	36-41 Above42	-.59371*	.007		
Risk	18-35 Above42	-.28022*	.011		
Risk	18-35 Above42			-.34890	0.013

*The mean difference is significant at the 0.05 level.

The results show a mean difference in Advanced Financial literacy between those within the range of 36 to 42 and those above 42 from the business group and a mean difference in risk perception between those from 18 to 35 and those above 42 for the other group.

Multi Logistic Regression

Since the dependent variable (investment choices) was categorical with five choices (stocks, bonds, fixed bank deposits, House, and Farm), a multi-logistic regression was performed to validate the ANOVA results. Four models were run. The first was related to non-business students' data; investment choice was the dependent variable, while risk perception and basic financial literacy were independent variables. The second related to non-business students' data, with Investment choice as the dependent variable, while Risk perception and advanced financial literacy were independent variables. The third related to business students' data, with Investment choice as the dependent variable, while Risk perception and basic financial literacy were independent variables. The fourth related to business students' data, with Investment choice as the dependent variable, while Risk perception and advanced financial literacy were independent variables. Table 7 shows the results of logistic regression.

Table 7: Multi-logistic regression Model Fitting results

Model Fitting Information: Investment choice, Risk, basic financial literacy (Non-Business)

	-2 Log Likelihood	Chi-Square	Sig.
Intercept Only	126.869		
Final	124.617	2.252	.972

Model Fitting Information: Investment choice, Risk, Advanced financial literacy (None Business)

	-2 Log Likeliho	Chi-Square	Sig.

	od		
Intercept Only	133.671		
Final	130.971	2.700	.952

Model Fitting Information: Investment choice, Risk, Basic financial literacy (Business)

	-2 Log Likelihood	Chi-Square	Sig.
Intercept Only	237.013		
Final	229.874	7.139	.522

Model Fitting Information: Investment choice, Risk, Basic financial literacy (Business)

	-2 Log Likelihood	Chi-Square	Sig.
Intercept Only	245.406		
Final	239.562	5.844	.665

Statistical significance for all four models indicates no significant improvement in the fit over the null models. This confirms the ANOVA results that Financial Literacy and Risk Perception do not significantly influence Investment Choice.

DISCUSSION

The fact that 56% chose real estate compared to 44% who decided on financial assets indicates that individual investors in Zambia prefer real estate to economic assets. This may be one of the reasons why Zambia has a low investment rate in financial assets.

Financial literacy was represented by several correct answers to the related questions using a two-dimensional set of questions (simple and advanced) developed by Rooji and Lusardi (2011). The results were average participants got 2.55 out of 5 (51%) basic questions correctly, 4.8 out of 12(40%) from business students and an average of 2.1 out of 5 (33%) basic questions correctly, and 3.3 out of 12(28%) for non-business may indicate low levels of financial literacy. This is especially so considering that questions on simple literacy were fundamental and the respondents were university students; answering less than half of them correctly reflects a low financial literacy that may exist in the country. These results are comparable to those of Al-Tamimi (2009), who found a similar lower level of financial literacy among individual investors in the United Arab Emirates.

Risk perception was measured based on the Grable and Lytton Risk Tolerance Scale (Grable. and Lytton 1999). The scale has 13 questions relating to risk. Scores on the scale can range from 13 to 47. Higher scores are descriptive of increased financial risk tolerance. The mean score for the business respondents was 26.1, representing 55%, while non-business had 27.8, representing 58%. The mean score for both groups was 26.8, representing a 57% score. This indicates that the respondents have a slightly above-average financial risk tolerance. The results show that those who chose equity are more risk-tolerant and willing to take financial risk than those who chose other investment types. Other studies have observed similar results (Kuzniak et al. (2015)).

The ANOVA test results show that the observed mean differences among all three variables (Basic financial literacy, advanced financial literacy and Risk perception, respectively) are not statistically significant. This implies that financial literacy and risk do not significantly affect investment choice for this data. These results are further

validated by Multi Logistic Regression, which shows that Financial literacy and risk perception have not affected investment choices considerably. Other researchers like Arianti (2017), Al-Tamimi (2009), and Akims and Jagongo (2017) observed similar results.

CONCLUSION AND IMPLICATIONS

This study aimed to assess the effect of financial Literacy and risk Perception on Investment Choice. Financial literacy was measured by the number of correct answers to the related questions using a two-dimensional set of questions (simple and advanced) developed by Rooji and Lusardi (2011). Risk perception was measured based on the Grable and Lytton Risk Tolerance Scale (Grable. and Lytton 1999). Investment options included stocks, bonds, fixed deposits and real estate. A survey research design with a sample of 172 respondents was adopted.

The results from the ANOVA tests show that although the differences in means were observed among the investment choices, they were not statistically significant at 0.05% as the observed P-values for all three variables(Basic financial literacy, advanced financial literacy and Risk perception, respectively), were more than 0.05 P values (0.847, 0.889 and 0.263). This shows that Risk perception and financial literacy do not significantly affect investment choice. Secondly, individual investors prefer real estate to financial assets as 56% of the respondents chose real estate compared to 44% who decided on Financial Assets, indicating that individual investors in Zambia prefer real estate to financial assets. This may be one of the reasons why Zambia's financial assets have a low investment rate. Thirdly, financial literacy levels are low; hence, there is a need for more financial education. The risk perception is above average.

Unlike other studies, this study Is unique in that it included real estate as part of the investment options and found that tangible assets are preferred to financial assets in Zambia. This may imply that the Lusaka securities exchange does not widely market financial assets. However, this cannot be conclusive. Considering that risk perception and financial literacy do not significantly affect investment choice, there is a need for further empirical research to establish why individual investors in Zambia prefer real estate to financial asset investment.

As with any study, this one has some limitations. When evaluating the study results, it would be reasonable to consider the population type and sample size. A vast population and sample would enable more general results.

Declaration of interest statement

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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