The Determinants of Stock Market Participation: Evidence from Individual Investors in Zimbabwe

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Abstract: The participation of individual investors at the Zimbabwe Stock Exchange (ZSE) is very low. The reasons for the low participation rate are not well known. It is from this background that this study sought to understand the impact of selected factors namely trust, awareness, transaction costs, perceptions, cognitive skills, and access to internet on individual participation at the stock market. The study also sought to establish if there are statistical differences of opinion among respondents of different age and educational backgrounds about the effect of the stated factors on stock market participation. Using data collected from stock broking managers, asset managers, fund/investment managers, regulators, and investment/research analysts, the regression analysis results show that with the exception of trust the remaining five factors are significant predictors of stock market participation by individual investors. The results further reveal that no significant differences are found among male and female respondents' views that trust, transaction costs, cognitive skills and perceptions are important factors in influencing their stock market participation but for awareness and access to internet a significant difference is found in their perceptions. Further analysis finds that there are no statistical differences in the effect of awareness, transaction costs and cognitive skills whatever the educational background of a respondent but respondents perceive that trust, access to internet and perceptions differ in their effects on respondents with different academic qualifications. The study adds to the literature of stock market participation in developing countries. It provides useful insights to stock market practitioners to devise strategies that enforce an improved participation

Keywords: stock market participation, trust, awareness, transaction costs, perceptions, cognitive skills.

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1. Introduction

The principal objective of the study was to identify factors that determine participation of individual investors on the Zimbabwe stock market and to determine if there are statistical and significant differences of perceptions among consumers of different gender and educational categories about the effects of stock market

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participation. The participation of individual investors at the Zimbabwe Stock Exchange (ZSE) is very low. For instance, according to FinScope (2011), in Zimbabwe 40% of the population are financially excluded, and 22% rely only on informal financial products or services. While 38% of Zimbabweans are formally served, 24% have or use bank products or services such as the stock market and 14% have or use non-bank formal products or services but not commercial banking products (FinScope, 2011). The reasons for the low participation rate are not well known. It is from this background that this study aimed to understand the major drivers of individual participation at the stock market with a view to devise strategies that enforce an improved participation.

To achieve the purpose of the study, the following are the specific objectives of the study:

- To establish the impact of trust, transaction costs, cognitive skills, perception, awareness and access to internet on individual customers' participation at the stock exchange.

- To establish if there are statistical differences of opinion among respondents of different age and educational backgrounds about the effect of the stated factors on stock market participation.

To our knowledge the study is one of the first seeking to infer on stock market participation determinants of individual investors in Zimbabwe as most of previous studies have concentrated on the corporate investors. For example, Chowa, Nyanhete and Mhlanga (2014) examined the Zimbabwean Stock Exchange participation by corporates post-dollarisation and found that insider trading information, high costs of trading and market undervaluation are important factors in stock market participation. Acquaah's (2015) study of the determinants of corporate listing on stock market in Southern Africa revealed that knowledge about stock market dynamics and financial institutions support do encourage listing on the stock market. The study will equip broking houses and asset management firms with information useful in crafting strategies to tap into individual's client's base and diversify the brokerage base. Moreover, the findings of the study will provide some insights to stock market managers and policy makers in both Zimbabwe and other developing countries to stimulate participation at the stock market. The results will also provide insights into policy formulation in terms of addressing the barriers to participation and making the stock market attractive to investors.

2. Literature Review

2.1. Awareness and Stock Market Participation

The degree to which individuals are aware of available financial assets depends on the aggressiveness of asset suppliers to spread the information about the instruments they issue. (Guiso, Jappelli, 2005) Guiso and Jappelli, (2005) argue that lack of awareness affect stock market participation amongst individual clients. Guiso and Jappelli (2005) establishes that individuals often learn about investment opportunities from peers who are already informed about equities. From the arguments above, awareness encourages participation because the probability of becoming informed is an increasing function of the probability of buying stock. Therefore it can be argued that awareness is a strong determinant of individual's investor's stock market participation.

2.2. Trust and Stock Market Participation

Trust in the context of stock market participation is the subjective probability that individuals attribute to the possibility of being cheated in executing a transaction (Guiso & Sapienza, 2005) Trust plays a vital role in the way in which financial. institution present themselves to potential clients this is particularly evident in the stock market. Trust induces investors to participate in the stock market by profligate expectation of returns. It also explains why rich people may decide to stay out of the market even though they can afford to pay participation cost. There is a distinction between two different types of trust. There is generalized trust and personalized trust. Generalized trust is about the fixed ideas people of one group have for people from another group while the later concerns the evolving relationship between two specific agents. (Ennew, Kharouf & Sekhon, 2008) In business much of discussion is about the meaning of trust have its origins in literature relating to organization and organizational analysis (Ennew et al., 2008). According to Ennew et al. (2008),a client will only accept vulnerabilities associated with stock market in the presence of strong expectations of the positive future .Some of trust is likely to be inherent in most relationships. Few relationships are or can be characterized by complete certainty of complete contracting. It is apparent that a common view of trust would suggest that it is concerned with an individual's willingness to accept vulnerability on the grounds of positive expectations about the intentions or behavior of another in a situation characterized by interdependence and risks associated with investing in the stock market can be complex because of the variety of investment products.

2.3. Transaction Costs and Stock Market Participation

Costs that deter entry in the stock market may take several forms. Vissing-Jorgensen (2002) categorizes participation costs as fixed entry costs, fixed and variable transaction costs and per period trading costs. Using panel data on family indirect stockholding the study finds that transactional costs associated with stock market

participation is a very significant determinant of current participation levels by individuals. Another related study by Guiso *et al*. (2002) presents cross-country evidence on the presence of participation costs. The study conclude that the cross-country differences in participation rates can be better justified by different institutional and informational barriers to entry across countries than differences in stock returns per say.

Faria (2000) argues that the transaction costs are not necessarily costs in monetary value, however it can be thought of as the value of time spent by the potential investor to understand the basic functioning of stock markets, the time costs to learn how to follow price movements, how to trade, how to assess risk and return relationship for an optimal portfolio choice among other activities. According to Alan (2006) such consideration alone has a direct negative relationship with individual's stock market participation patterns. Even though educated and the wealthier are more likely to participate in the stock market but information and transaction costs remain the most important variable quantitatively. (Vissing-Jørgensen, 2002; Haliassons & Michaelides, 2003) However, research by Favilukis (2007) differs from the findings above suggesting that the reduction of participation costs increases the stock market participation rate but it reduces the equity premium due to higher demand for equity.

2.4. Access to Internet and Stock Market Participation

Although there is lack of literature regarding the use of internet and stock market participation, internet has already has an impact and is expected to have an enormous effect in transforming stock market participation patterns. The research by Barber and Odean, (2002) found that people of young ages who are active traders with high incomes are more likely to trade online. They have an appetite for small growth stocks with high market risk this ordinarily increases the stock market participation levels.

The internet facilitates multi-point information flows and all the processes that are based on information flows. Financial intermediation and financial exchanges are purely based on the exchange of information electronically. (Economides, 2001) As a result switching to online trading results in strong individuals stock market participation as compared to the period before online trading. (Bogan, 2008) It can be argued however that trading online makes participants trade more and actively embarking mainly in speculative deals which were less profitable than before. Individuals who regularly use internet have a higher probability of investing in stocks. (Bogan, 2008)

2.5. Cognitive Skills and Stock Market Participation

Making financial decisions is complicated let alone managing equities portfolios and it involves a specific human investment in time and effort from the individual

investor thus to familiarise in stocks concepts to make justifiable decisions. Low cognitive skills are likely to increase participation cost. (Fredrick, 2005)Through his finding Fredrick, (2005) studies of the relationship between cognitive reflection and time and risk preferences. From his studies individuals with high scores in the Cognitive Reflection Test (CRT) are on average more patient and appear to have lower discount rates based on questions asked on delayed monetary rewards. Individuals with high CRT scores are more willing to take risks in the domain of gains but less willing to take risks in the domain of losses compared to their peers with lower CRT score.

Financial decisions are often complicated. Managing a portfolio involves a specific human capital investment in terms of effort and time from the investor to first familiarize himself or herself with the concepts involved in investing and later on to follow the market development to make justifiable financial decisions. As mentioned above, information costs can be a significant barrier of entry in the stock markets and low cognitive abilities are likely to further increase these costs. Benjamin, Brown and Shapiro (2006) find that more cognitively able individuals are more risk neutral over small stakes and more patient over short time horizons. Accordingly, cognitively gifted individuals are less likely to display behaviors associated with high risk aversion or impatience, such as low levels of asset accumulation, obesity, smoking and low levels of financial market participation. (Benjamin et al., 2006)

Counter arguing the fact that greater cognitive skills lead to improved reasoned financial choices and higher likelihood of stock market participation, it may be also conceivable that low cognitive skills increase stock market participation. Korniotis and Kumar (2010) find a relationship between low cognitive ability and overconfidence.

2.6. Perception of Investors and Stock Market Participation

Investors who perceive high levels of uncertainty are more likely not to participate on the stock market, this uncertainty is brewed from negative perceptions. (Makarov & Schornick, 2010) Stock market participation is an important economic outcome. There can be a substantial welfare loss from not participating in the stock market, as exposure to equities, and hence to the equity premium, may be an important determinant of the long-run return to individual savings. (Cocco & Gomes, 2012) Behavioral finance studies have found that investors are roughly twice as sensitive to losses as they are to gains. (Jain, Jain & Jain, 2015) People tend to evaluate gains and losses over a relatively short time horizon that may not be in sync with the longer horizon over which investment goals are expected to be realized.

3. Methodology

A quantitative approach was employed. The study sought to establish the determinants of participation by individuals on the stock market making the quantitative approach ideal to establish the cause and effect relationship between independent variables and dependent variable. (Saunders et al., 2009) The target population comprised the stock brokers, asset managers, fund/ investment managers, and investment/research analysts. Stratified random sampling was employed by dividing the population into three strata that is stockbrokers, asset managers, and investment advisors. Random sampling was then performed within each of the three strata. A total of 120 questionnaires were administered to the aforementioned respondents. Data were collected over a period of six months. The questions were indicated on a 5-point Likert-type scale anchored by 1= strongly disagree, 2= disagree, 3= undecided, 4= agree, and 5= strongly agree). The Likert-type summated scales were selected as they are extensively used in situations where it is possible to compare respondents' scores in some defined sample. Of the 120 questionnaires, 108 were returned, yielding a 90% response rate.

The overall Cronbach alpha coefficient for the scale was 0.876 and this proved that the scale met the internal consistency threshold of 0.7. (Bryman & Bell, 2015) The factors namely Awareness, Trust, Cognitive Skills, Perceptions, Access to Internet and Transaction Costs were used as determinants while individual participation was the dependent variable. These factors were drawn from prior studies on similar studies. Most of the factors were extracted from Cole and Shastry (2008) and awareness and transaction costs. (Guiso & Shastry, 2005) On the other hand, stock market participation by individuals was measured by considering individual holding any shares in publicly held corporations, mutual funds, or investment trusts in a given year. An adapted version of Gianetti and Wang (2015) was used to provide information about individuals' participation on the stock market.

4. Results

The variables in the study consisted of six determinants awareness, access to internet, cognitive skills, transaction costs and trust. In order to understand the characteristics of the variables in respect of minimum, maximum, mean and standard deviations, the descriptive statistics are presented in Table 1 below.

Table 1. Descriptive Statistics

	Minimum	Maximum	Mean	St deviation	
Perceptions	3.50	5.00	4.45	.48	
Awareness	2.50	5.00	4.05	.58	
Access to Internet	2.50	5.00	3.90	.74	.73641
Cognitive Skills	2.00	5.00	3.60	.85	
Transaction costs	1.50	5.00	3.21	.82	
Trust	1.00	4.00	2.43	.77	.6.77175

Based on Table 1 above, the perceptions factor is 4.45 with the lowest value being 3.50 and the highest 5.00. The Standard deviation of the 0.48, lower than the mean value and thus it can be said that the deviations in the data are relatively small. The awareness of the individual investors about stock market with lowest number (minimum) is 2.50 and a maximum value of 5.00. From the above data, it can be seen that the awareness factor has an average value (mean) of 4.05, meaning that the average awareness of individual investors in the country's stock market is very high. The standard deviation of awareness was 0.58, lower than the mean value and thus it can be said that the deviations of the data are relatively small. The access to internet in the study with the lowest value (minimum) is 2.50 and the maximum value is 5.00. From the above data, it can be seen that the access to internet has an average value (mean) of 3.90, meaning that on average a relatively fair number of individual investors have access to internet. The standard deviation of 0.74 is smaller than the mean value, and thus it can be said that the deviations in the data are relatively small. Cognitive skills with the lowest value (minimum) is 2.00 while the maximum value was is 5.00. The mean value is 3.60 which means that on average individual investors have moderate cognitive skills. The standard deviation of cognitive skills 0.85 which is lower the mean value and thus it can be said that the deviations in the data are relatively small.

The transaction costs with the lowest value (minimum) is 1.50 with a maximum value of 5.00. The mean value of 3.21 means that investors moderately consider transaction cost as factor that influences stock market participation. The standard deviation was 0.82 which is lower than the mean value which shows that deviations were small. The trust of stock market with lowest number (minimum) is 1.00 and a maximum value of 4.00. As shown by the data in the table, trust of stock market has an average value (mean) of 2.43 meaning individual investors have lack of trust in the stock market. The standard deviation of trust was 0.77, lower than the mean value and thus it can be said that the deviations of the data are relatively small.

To ascertain the extent of impact of each the above factors, stepwise regression analysis was conducted as depicted in Table 2

Table 2. Regression test results

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	4.774	.093		51.253	.000
Awareness	.686	.022	.832	31.638	.000
Trust	-.135	.014	-.038	-2.739	.072
Transaction Costs	.242	.017	.418	14.079	.000
Access to Internet	.176	.018	.270	9.651	.002
Cognitive Skills	.053	.013	.094	4.209	.000
Perceptions	-.535	.021	-.538	-24.901	.000

a. Dependent Variable: participation of individuals on the stock market

b. F = 513, 09; p = 0.00; R = 0.652; adjusted R^2 = 0.61.38

Table 2 shows an adjusted R^2 of 0.61.38 with an F value of 513.09 and p value of 0.000 which indicates that the model is statistically significant and explains approximately 61% of variance in stock market participation.

Based on the results of multiple regression analysis in the above table, the regression equation model obtained is as follows:

Y= 4.774+0.832X1 -0.038X2+0.418X3+0.270X4+0.094X5-0.538X6+e

Considering the standardized coefficients in awareness (β = .832), transaction costs (β= .418), access to internet (β= .270), cognitive skills (β= .094), perceptions β= -.538), had significant coefficients, with p-values less than 0.05. However, trust (β = -.038 an exhibits a statistically insignificant impact on stock market participation as the p value is greater than 0.05.

Table 3. Mann-Whitney U Test for comparisons of stock market participation determinants by gender

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Awareness is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.000	Reject the null hypothesis.
2	The distribution of Trust is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.641	Retain the null hypothesis.
3	The distribution of Transaction costs is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.135	Retain the null hypothesis.
4	The distribution of Access to Internet is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.001	Reject the null hypothesis.
5	The distribution of Cognitive Skills is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.148	Retain the null hypothesis.
6	The distribution of Perceptions is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.101	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 3 shows the differences of opinion among male and female respondents about the determinants of individual stock market participation. The significance level for trust is 0.641, transaction costs is 0.135, cognitive skills is 0.148 and perceptions is 0.101 which demonstrates that there is no significant difference of opinion in terms of gender of individual investors about the four determinants. However, significant differences of opinion are found between male and female investors in respect of awareness and access to internet as the p-values for both determinants are less than 0.05.

Krustal Wallis 4. Test for comparisons of stock market participation determinants by level of education

Determinant	Level of education	N	Mean	Df	Chi-square	Sig.
Awareness	Diploma	13	31.92	2	9.480	0.009
	Undergraduate	44	54.11			
	Masters	51	60.59			
Trust	Diploma	13	39.92	2	4.169	.124
	Undergraduate	44	58.99			
	Masters	51	54.34			
Transaction cost	Diploma	13	32.15	2	38.543	0.000
	Undergraduate	44	38.75			
	Masters	51	73.78			
Access to internet	Diploma	13	30.69	2	9.044	0.11
	Undergraduate	44	58.00			
	Masters	51	57.55			
Cognitive skills	Diploma	13	21.62	2	17.293	0.000
	Undergraduate	44	57.88			
	Masters	51	59.97			
Perceptions	Diploma	13	54.81	2	1.411	0.494
	Undergraduate	44	50.57			
	Masters	51	57.81			

a. Kruskal Wallis Test

b. Grouping Variable: Highest Level of Education

Table 4 indicates through Krustal Wallis significant difference test for stock market participation factors across educational categories that there is there is no statistical differences of perceptions among individual investors about the influence of trust, access to capital and perceptions as the p-values are greater than 0.05. This shows that individual investors perceive these factors the same way regardless the educational background of a respondent. Whereas awareness, transaction cost and cognitive skills have p-values less than 0.05 implying that investors of different educational backgrounds perceive these factors differently.

5. Discussion of Results

This study advances our understanding of the factors that determine the participation of individual investors on the stock market. From this study, with the exception of trust, all the remaining five factors namely awareness, transaction costs, access to internet, cognitive skills, and perceptions are significant factors that influence individuals' participation on the stock exchange. This shows that these factors can be used to ensure an improved participation by individuals on the stock market. For the Zimbabwean and other developing countries stock markets to have active

individual participation, for example, financial literacy is important as it helps them to know the importance of investing in shares (Atia, 2012), awareness is important because information availability helps in decision making (Guiso and Jappelli, (2005) and transaction costs are also a serious consideration as the costs have a bearing on investment returns. (Vissing-Jorgensen, 2002) Of interest to note is that of these factors, awareness (β= 0.832) emerged as the most significant factor, followed by transaction cost (β = 0.418). This demonstrate that there more individuals are aware of the stock market and the less are investment transaction costs, the more they are likely to participate. However, trust showed a statistically insignificant relationship with individual participation. This finding implies that individuals do not regard trust as an important factor in making decisions to participate at the stock market. The study results also reveal that no significant differences are found among male and female respondents' views that trust, transaction costs, cognitive skills and perceptions are important factors in influencing their stock market participation but for awareness and access to internet a significant difference is found in their perceptions. It is therefore concluded that trust, transaction costs, cognitive skills and perceptions have the same effect whether a respondent is a male or female. Whereas awareness and access to internet have different influence on male and female respondents. Further analysis finds that there are no statistical differences in the effect of awareness, transaction costs and cognitive skills whatever the educational background of a respondent but respondents perceive that trust, access to internet and perceptions differ in their effects on respondents with different academic qualifications. The finding demonstrates that stock market customers holding diplomas, undergraduate and Post graduate degrees are influenced in the same way by awareness, transaction costs and cognitive skills but trust, access to internet and perceptions have different influence on them due to their educational backgrounds. The findings are important to Zimbabwe in particular and to developing countries in general because the business environments of these countries are characterized by low income levels, lack of awareness, low financial literacy, and liquidity problems. To encourage more individual participation and hence the development of the stock market, the transaction costs need to be set at reasonable levels, awareness must be created and financial education be provided especially among low income groups. The government should on a regular basis come up with policy mechanisms that are aimed at increasing savings and easing liquidity, for example cutting taxes and lowering interest rates in order to leave households with reasonably high levels on liquid income. With massive campaigns by the ZSE about the product offerings of the stock market, in the long run individuals would be better positioned to understand stock market basics and possibly participate on the stock market. Government through the ministry finance should arrange for investor education symposiums to demystify wrong perceptions about the stock market and to educate people on how holding stocks can be beneficial to household and to the nation at large.

6. Limitations and Directions for Future Research

The fact that the research focused on the authorities' side alone may perhaps be a limiting factor. The researcher under took this research in one context of the supply side without the individuals investors themselves. In the Zimbabwean context this implies that there is scope for further research on behavioral finance patterns to incorporate both individual's investors and potential investors who do not hold stocks. Future research along this direction should improve this model.

7. Conclusion

The study showed that awareness, transaction costs, access to internet, cognitive skills, and perceptions are significant predictors of stock market participation by individual investors. However, trust is an insignificant predictor. The results also show that awareness, cognitive skills, perceptions, and transaction costs and trust are perceived the same by both male and female respondents with the exception of access to internet and awareness. Education wise perceived difference tests revealed that there are no significant differences shown about awareness, cognitive skills, and transaction cost but respondents have different ideas in terms of access to internet, trust and perceptions. Managers and policy makers can develop the stock market through individual participation by considering these important factors when they make and formulate management decisions and policies.

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