

The Impact of Individual Investors Behaviour on Investment Decision on the Nigerian Stock Market: A Study on Kano Trading Floor

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Introduction

The rationale behind any investment is to create wealth. Investment decision involves when, where, how and how much capital or debt needed to make profit. Investors, in their quest for an optimal investment decision, are faced with complex finance models such as the capital asset pricing model (CAPM) and most importantly cognitive psychology (Kengatharan, 2014). Inrecognizing these difficult tasks, as well as efforts to reduce or avoid them, the impact of psychology on investment decisions was recognized.

The impact of financial meltdown of 2008 was felt world-wide. Despite the availability of information and the assumption by the classical finance that investors are rational; the crash of the stock market could not be prevented. Investors sentiment due to the role played by emotions like fear, greed and anticipation, contributed immensely in shaping up investment decisions

(Subash, 2012). Thus, the volatility of stock and these sentiments became the major determinants of market movement. This makes the study of behavioural finance more eminent than ever.

This study deals with the behaviour of investors and the irrationality of individuals when making investment decision on the Nigerian Stock Market. Behavioural finance is the study of the influence of psychology on the behaviour of financial technocrats; the impact it has on the stock market, as well as the study of how psychology affects financial decision making and financial markets (Aduda, Oduor&Onwonga, 2012). Behavioural finance recognizes that our financial decisions are associated with human psychology, and the term "quasirational" was used to explain how, when and why we act irrationally (Babajide&Adetiloye, 2012). According to Iqbal, Ahmad, Maira and

Aisha (2014), behavioural finance focuses on irrational behaviour that can affect investment decision and stock prices. Kicia (2013) is of the opinion that behavioural finance deals with perception and judgment on how emotion and cognitive factors affect investors and investment decision making. He further argued that behavioural finance considers the study of psychology and other social biases to have significant impact on the activities of financial markets. This explains to some extent the stock market volatility and other anomalies.

The work of behavioural finance is not to denounce the study conducted by the advocates of efficient market hypothesis, but to study the effect of irrational behaviour and its impact on the stock market (Iqbal et al, 2014). Behavioural finance is aimed at improving on the assumption of classical finance theory by incorporating psychological and emotional factors when making investment decision.

Behavioural finance classifies and explains why investors make investments at the wrong time in line with their instincts, which is contrary to the belief of classical economist. While, classical economic theories explain what investors do in an ideal situation (rational behaviour), behavioural finance on the other hand examines the reality of investors behaviour (irrational behaviour), (Babajide&Adetiloye, 2012).

According to Amedu (2010) the Nigerian Stock market recorded its greatest boom ever between the period of 10 ten years (1999-2008). However, within the first quarter of 2009 the Nigerian stock market became unpredictable, very much vulnerable to unexpected shock and news that affected the market negatively. The role and significance of individual investors and their trading behaviour in the Nigerian stock market became essential, due to the fact that with all the information about the market the value of stocks were declining as such human behaviour and emotions could be the explanation. Individual investors are believed to be less familiar with the intrigues of the market and also seen as noise traders; as such psychological biases will impact more on them than professional and institutional investors. The main aim of the study is to examine the impact of individual investors' behaviour such as over confidence, regret aversion, herding and anchoring on the Nigerian stock market.

Classical economics are of the opinion that people are rational, self-interested and self-controlled (Mitroi, 2014). Thus, after the global melt down of 2008 one can argue that classical financial theory became unrealistic and provides no explanation to the anomalies of the financial markets. These financial market anomalies make us question if the classical financial theory is not just an unrealistic and unfinished explanation to a complex and constantly changing problem,

which financial market shortcomings cannot be explained using traditional models (Birau, 2012). The belief by the advocates of classical finance that changes in price occur as a result of fundamental factors will no longer hold because of the effect of mass psychological factors (Shiller, 2003). Thus, for the purpose of this research, psychological factors such as overconfidence, anchoring, regret aversion and herding were considered. These factors are selected for the fact that they are more peculiar to the area of the study. In view of the foregoing statement of problem, the following research objectives were highlighted:

- i. Determine the individuals' investors over confident behaviour on investment decision
- ii. Ascertain the impact of investors herding behaviour on investment decision.
- iii. Determine the extent to which anchoring affects investment decision on the Nigerian stock market.
- iv. Determine the extent of regret aversion bias on individual investors' investment decision.

Literature Review

This deals with presentation of empirical findings from other academic studies related to the variables of the study namely herding, overconfidence, anchoring and regret aversion as independent variables in relation with investment decision as dependent variable.

Herding and Investors' Decision

In a study to investigate the effect of 'Herd Behavior' on 100 domestic individual investor who made transactions in Borsa Istanbul popularly known as BIST and also to examine the impact of socio-economic and demographical factors on the individual investors as it relates to herd behaviour in the period of 2009-2011 in Turkey by IC and Kahyaoglu(2013), it was discovered using Univariate and Multivariate Regression analysis that male investors show evidence of herd behaviour at higher rates than women investors, herd behaviour is more pronounce among single investors than the married investors. Also as income increases, the tendency to exhibit herd behaviour increases. As the level of education increases, the tendency to exhibit herd behaviour increases. Self-employed persons exhibit herd behaviour at higher rates when compared to workers and civil servants.

According to Choi (2013) in a study to examine Herding among local individual investors conducted in Korean market from February 1999 and December 2005 using 1000 individual investors it was discovered that herding behaviour is more pronounced among offline investors in the same local area than among online investor. Individual investors herding behaviour is common with stocks that are traded in large volume. Using OLS regressions, it was discovered locale trades by individual investors who are geographically close, are stronger

compared to investors in another region. Surprisingly, wealthy male investors that are less concerned with religious beliefs tend to invest more in the stock market compared to their investors who are female counterparts that are more religious. In another study conducted in Pacific Basin market, it was discovered using Kalman-filter-based model that allows us to determine the time varying nature of herding behaviour. The findings are; herding varies with time and herding is positively associated with stock returns which explain the trading behaviour of the investors. Herding estimates across markets are positively correlated, signifying co-movement of investor behaviour in the region (Chiang et al, 2011).Based on the discussion above, the following hypothesis is formulated.

H₀₁ There is no significant relationship between individual investors over confidence behaviour and investment decision.

Overconfidence and Investors' Decision

In a study to analyze the determinants of individual investor behaviour in Pakistani stock market by Iqbal, et al (2010), it was discovered that overconfidence has significant impact on the overall behaviour of investors trading on Pakistan stock market. Over confidence was more pronounced with investors that belief to have adequate knowledge of the market. The study used questionnaire to source for information related to investors profile and determinants of investor behaviour which was done using a five point

scale. SPSS, a statistical software for analysis was used for analysing the data and Analytic Hierarchy Process (AHP), which is one of the multi Criteria decision making technique that enables the use of ratio scales to make comparison. AHP is one of multi Criteria decision making method to derive ratio scales from paired comparisons.

Similarly, in a study to examine the role of behavioural finance in portfolio investment decisions in India by Subash (2012), it was concluded that young investors mostly with less than 7 years' experience are more prone to over confidence than the old investors with more than 7 years investing experience. Questionnaire was distributed to 101 investors making 46 young and inexperienced investors and 55 old and experienced investors selected by applying judgment sampling technique and also trading on the brokerage floor via the internet. Analysis was done using SPSS Software and Microsoft Excel. Scaling technique such as 3-point and 5-point Likert Scales and arithmetic mean were used. An overall analysis of these variables was conducted by performing various Multicollinearity Checks and the Discriminant Analysis, which checks if the behavioural pattern of young investors is different from that of the experienced ones.

In a study conducted in Lagos, Nigeria by Babajide and Adetiloye (2012) using over confidence as one of their variables, it was discovered that over

confidence affects the market and as such drops the Nigerian stock market by 5.95%. Questionnaires were administered to 300 randomly selected investors of the Nigerian stock market and the technique of correlation with Pearson Product Moment Coefficient was used to analyze the data. A correlation coefficient of -0.244 , was obtained which means that the more the investors display a high level of overconfidence the lower the market performs. A low negative correlation between overconfidence and market capitalization, suggest a weak relationship. Therefore, following the thesis and anti-thesis, the study hypothesized that:

H₀₂ There is no significant relationship between individual investors herding behaviour and investment decision.

Anchoring and Investors' Decision

According to Kudryavtseva and Cohen (2011) in a study in Israel titled Behavioral biases in economic and financial knowledge: Are They the Same for Men and Women? He concluded that women are more affected by anchoring. Experimental questionnaires were distributed to 102 MBA students from University of Haifa and Israel Institute of Technology. The study discovered that women are more prone to anchoring not because there are less rational but because they anchor to information easily than their male counterparts.

In another study by Babajide and Adetiloye (2012) using questionnaire and the technique of correlation with Pearson Product Moment Coefficient on 300 randomly selected investors in the Nigerian security market to investigate the effects of behavioural biases on security market performance in Nigeria, statistical test to check the variable anchoring in the Nigeria security market, with the null hypothesis to be 'I do not rely on the high rates of return achieved in the market only to estimate the future outcome of my investment.' The alternative hypothesis is: high rate of return achieved on the market in the past, is the benchmark used in estimating return on my future investment. From this study null hypothesis was accepted, which implies that investors in the Nigeria security market do not rely on high rate of return achieved in the market only to judge the future outcome of an investment in the Nigeria security market. Following the pattern of augment and counter argument, the study hypothesized as stated below.

H₀₃ There is no significant relationship between individual investors regret aversion bias and investment decision.

Regret Aversion and Investors' Decision

In a study to investigate the behaviour of small equity investors in Pakistani stock exchanges by Anwar et al (2013), it was discovered that regret aversion exists among equity investors

in Pakistan. Survey research technique was used. Questionnaires were administered to equity investors in Pakistan stock exchanges which comprises of three stock exchanges namely: Karachi Stock Exchange (KSE), Lahore Stock Exchange (LSE) and Islamabad Stock Exchange (ISE). Out of 248 Questionnaire distributed and returned, 152 making 61.29% of the respondents believed that regret aversion has impact on investment decision and the amount or pain of regret is higher when compared with gratification pleasure.

According to Hsiao and Chuan (2014) in a study to examine the influence of investors' psychology on disposition effect in Taiwan, it was discovered that regret aversion has impact on investors' behaviour with regards to investment decision. Survey questionnaires were conducted and five-point scales were anchored from strongly disagree to strongly agree. Questionnaires were distributed to 302 students from the University of Taipei and 290 were returned and used for the study.

Based on the existing literature reviewed, this study seeks to equip practitioners not just to recognize other mistakes made by individual investors but their own individual mistakes as well. It facilitates financial advisors to become more effective by understanding their clients' psychology. It helps investment bankers in understanding the market sentiments as they make public issues

for their companies. It assists the financial strategists in making better forecasts and security analysts for recommending stocks. Behavioural finance is a rapidly growing field, but it is still at its early stage in the developing countries, like Nigeria as such the knowledge of behavioural biases is required for individual investors in the pursuit of making sensible and effective investment decisions. Based on the argument above, the study hypothesized as follows.

H₀₄ There is no significant relationship between anchoring and investment decision on the Nigerian stock market.

Research Methodology

Cross sectional survey was adopted since a sampled opinion was needed to warrant generalization of findings concerning individual investors' behaviour on investment decision in Nigeria. The population of this study consist of all individual investors trading on the Nigerian Stock market. However, the study focused on Kano state due to the fact that presently, Kano state has the largest concentration of investors' in the northern part of the country. Furthermore, the state is considered as the commercial hub of Nigeria. Thus, the population of the study was drawn from the only two stock broking firms trading on the floor of the Nigerian Stock Market in Kano. The firms are Kundila finance services limited and Gidauniya securities and investment limited. The total individual investors

from Kundila finance services limited and Gidauniya securities and investment limited are 18,233 and 51,236 respectively making a total of 69,469 clients.

Using Krejcie and Morgan (1970), with the sample frame of 69,469 customers from the two stock broking firms, the sample of 381 was considered by the study as described in the table using the table for determining sample size

for a finite population. At the initial stage, the two stock broking firms were stratified into two strata. Then, the proportionate sampling technique was adopted in allocating sample size to the strata on the basis of the population in each stratum while the simple random sampling technique was used from each strata so as to give individual investors of the two stock broking firms an equal chance of selection.

Table3. 1: Sample Distribution

Stock Broking Firms	Clients	Formula % of clients from strata x 381	Sample Size
Kundila finance services limited	18,233	0.26×381	99
Gidauniya securities and investment limited.	51,236	0.74×381	282

Source: field survey, May 2015

Questionnaire was used to collect data from the respondents. The study adopted the questionnaire from the existing literature on the impact of individual investors' behaviour on investment decision. A 5 point likert scale was also used for this study. The variables used in the study are the independent variables consisting of over confidence, regret aversion, herding and anchoring and the dependent variable is investment decision. The following instruments as measured by other researchers were adopted in the study.

Reliability of a study or research is necessary to minimize errors. The main aim of reliability is to make a study in a way that if someone else makes the

same research, under the same situation, then he/she will find the same results. Cronbach's alpha was used to measure the internal consistency of the items after administration on respondents. The validity of the work was subjected to scrutiny, beside the adoption of instruments from the work of other researchers in related field all items were reviewed by academics and professionals, who have deep knowledge on the area under study.

For the purpose of data analysis, percentages and tables were used to describe the data. Regression model was adopted by the study to conduct inferential analysis. The study used SPSS as the statistical software for the

analysis. Regression was employed to test the data. The model was defined based on the equation as follows:

$$Y_i = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e_i$$

Y_i = is the dependent variable

b_0 = is the intercept, it will measure investment decision when overconfidence, anchoring, regret aversion and herding are constant.

b_n = are the coefficients of the independent variables and are as follows:

X_1 = overconfidence

X_2 = anchoring

X_3 = regret aversion

X_4 = herding

e_i = is the error term, it ranges from X_1 to X_4 based on the number of regressors (independent variables)

Result and Discussion

To check the internal reliability of the instrument, Cronbach' Alpha was run. To ensure that the items are reliable all, comprising of a total of 24 items were tested. Below is a table of the reliability statistics for the items.

Table 4.1 Showing Reliability Statistics

Variables	Cronbach' Alpha	No. of Items
Over confidence	.750	4
Anchoring	.563	5
Herding	.744	5
Regret Aversion	.734	4
Investment Decision	.610	6

Variables	Coefficient	t-value	Probability	
Constant	-.515	2.254	0.025	
Overconfidence	.198	2.697	0.007	
Herding	.617	5.574	0.000	
Anchor	.199	2.548	0.011	
Regret	.462	8.371	0.000	
R				.729
R^2				.531
Adjusted R^2				.525

The table above illustrates the reliability index of the items by variables, which gives the researcher confidence to use the instrument.

The findings indicates that all the four (4) explanatory variables can averagely ($r^2=0.531$) explain the cause of the investors investment decision in the

Nigerian stock market. On the separate note, overconfident behaviour is 12.2 % responsible for the investment decision, herding is 25.7%, anchoring is 14.1% and regret aversion is only 43.8%. This implies that present of overconfident and anchoring in the behaviour of an investor push him to invest with small effect.

The impact of regret aversion behaviour is high on investment decision. This agrees with findings by Anwar et al (2013) in his study to investigate the behaviour of small equity investors in Pakistani stock exchanges. It was discovered that regret aversion exists among equity investors in Pakistan. Out of 248 Questionnaire distributed and returned, 152 making 61.29% of the respondents believed that regret aversion has impact on investment decision and the amount or pain of regret is higher when compared with gratification pleasure. Survey research technique was used. Questionnaires were administered to equity investors in Pakistan stock exchanges which comprise of three stock exchanges namely: Karachi Stock Exchange (KSE), Lahore Stock Exchange (LSE) and Islamabad Stock Exchange (ISE). In a similar study conducted in Taiwan by Hsiao and Chuan (2014) in a study to examine the influence of investors' psychology on disposition effect in Taiwan, it was discovered that regret aversion has impact on investors behaviour with regards to investment decision. Survey questionnaires were conducted and five-point scales were anchored from strongly disagree to strongly agree. Questionnaires were distributed to 302 students from the University of Taipei and 290 were returned and used for the study. Before the formal investigation, a pilot test was conducted to make sure investor's understanding of each item and good reliability of scales. Consistency of scale was measured in

term of alpha Cronbach and the results show that the scales have greater than the suggested threshold value of 0.7 which was 0.8586 for regret aversion.

The fact that overconfident behaviour is 12.2 % responsible for behavioural bias when making investment decision on Nigerian stock market is weakly significant which is in line with findings of a study conducted in Nigeria by Babajide and Adetiloye (2012) using over confidence as one of their variables in a journal paper titled The effects of behavioural biases on security market performance in Nigeria, it was discovered that over confidence affects the market and as such drops the Nigerian stock market by 5.95%. Questionnaires were administered to 300 randomly selected investors of the Nigerian stock market and the technique of correlation with Pearson Product Moment Coefficient was used to analyze the data. A correlation coefficient of -.244, was obtained which means that the more the investors display a high level of overconfidence the lower the market performs. A low negative correlation between overconfidence and market capitalization, suggest a weak relationship. Another study in Pakistan by Iqbal et al (2010), is contrary to my findings based on the fact that overconfidence has significant impact on the overall behaviour of investors trading on Pakistan stock market. Over confidence was more pronounced with investors that belief to have adequate knowledge of the market. The study used questionnaire to source for

information related to investors profile and determinants of investor behaviour which was done using a five point scale.

The hypothetical assertions of the study also show that anchoring behaviors are relevant but not as relevant as herding and regret aversion in relation to the investors' investment decision in Nigerian stock market. The effect of anchoring on investment decision is 14.1% which shows that anchoring is weakly significant on investment decision. This agrees with a study by Kudryavtsev and Cohen (2011) in a study in Israel and in his paper titled Behavioral biases in economic and financial knowledge: Are They the Same for Men and Women? he concluded that individual investors are prone to behavioural biases and women are more affected by anchoring.

Herding with result of 25.7% is accepted indicating that it is significantly related with the investors' decision to invest. This agrees with a study in Turkey by Ic and Kahyaoglu (2013) using Univariate and Multivariate Regression analysis that Investors exhibit herding behavior but male investors show evidence of herd behaviour at higher rates than women investors, herd behaviour is more pronounce among single investors than the married investors. Similarly, is also the same with another finding in Korea by Choi (2013) in a study to examine Herding among local individual investors conducted in Korean market from February 1999 and December

2005 using 1000 individual investors it was discovered that herding behaviour is more pronounced among offline investors in the same local area than among online investor. Individual investors herding behaviour is common with stocks that are traded in large volume. Using OLS regressions, it was discovered locale trades by individual investors who are geographically close, are stronger compared to investors in another region. Surprisingly, wealthy male investors that are less concerned with religious beliefs tend to invest more in the stock market compared to their investors who are female counterparts that are more religious.

Furthermore, the standardized beta in Table 4.8 acts as a correlation coefficient. It determines the extent of correlation of independent variables with the dependent variable. The results show that over regret aversion behaviour is positively correlated with the Investors' investment decision. It has 43.8% capability to cause the investment decision and statistically significant. Herding behaviour is positively correlated with the Investors' investment decision. It has 25.7% capability to cause the investment decision. It is of small effect but statistically significant. Anchoring behaviour is positively correlated with the Investors' investment decision. It has 14.1% capability to cause the investment decision. It has small effect but is statistically significant. In conclusion overconfidence behavior is 12.2% positively correlated with the

Investors' investment decision which is statistically significant.
equally of small effect and is

Table 4.3 showing Regression Analysis

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	3894.402	4	973.601	84.747	.000 ^a
Residual	3435.002	299	11.488		
Total	7329.404	303			

As the table shows the model summary of in which the value of R is .729 using all the predictors; shows that there is strong correlation between independent and dependent variables. The overall model shows that the independent variables (regret aversion, overconfidence, anchoring and herding) explains 53.1% of the variance in the dependent variable (investment Decision). This means that an R-Square of 0.531 was obtained indicating that all four behavioural biases jointly determine 53.1 % investment decision. The value of R Square (R^2) is .531 which shows that model is good and fit. And adjusted R^2 which is .525 signify that the level of relationship between investment decision and investors' over confident behaviour, herding behaviour, lost

aversion and anchoring are having average effect on investment decision.

Multicollinearity Diagnostic

To ensure that explanatory variables are independent, multicollinearity diagnostic was conducted and reported as the Variance Inflationary Factor (VIF) indicates that there is no problem of Multicollinearity. VIF is the statistical method employed to evaluate Multicollinearity. Hair et al (2010) are of the belief that any VIF value that surpass 10 and a tolerance value that is lower than 0.10 are indication of potential problem of Multicollinearity. The result therefore showed that Multicollinearity does not exist because the tolerance values are more than 0.10 and VIF are less than 10.

Table 4.4 Showing Tolerance and VIF values

Independent variables	Tolerance	VIF
Overconfidence	.771	1.298
Herding	.735	1.361
Anchoring	.512	1.951
Regret Aversion	.573	1.746

Source: Field Survey (2015)

Testing of Hypotheses

The study developed four hypotheses which were tested using multiple regression method to find the explanatory power of the model in determining investment decision with regards to the Nigerian stock market.

Ho₁ which states that there is no significant relationship between individual investors over confidence behaviour and investment decision is found to be rejected based on the fact that overconfident behaviour as a behavioural bias is 12.2 % responsible for the investment decision. The P-value 0.007 is less than or equal to 0.050. Ho₂ which state that there is no significant relationship between individual investors herding behaviour and investment decision is found to be rejected. The P-value 0.000 is less than or equal to 0.050. Ho₃ which also state that there is no significant relationship between anchoring and investment decision on the Nigerian stock market is found to be rejected. The P-value of 0.011 is less than or equal to 0.050. Ho₄ which also states regret aversion has no significant relationship on investment decision in the Nigerian stock market is found to be rejected. The P-value 0.000 is less than or equal to 0.050. This implies that increases in investors' over confident behaviour, herding behaviour, regret aversion and anchoring altogether result to 53.1% commensurate increases in the investors' investment decision on Nigerian stock exchange market. Therefore all the alternate hypotheses

are accepted with the significance value less than 0.05 which shows that all independent variables have great influence on dependent variable which is investment decision making. And all the null hypotheses were rejected due to the retaining of alternate hypotheses.

Conclusion and Recommendations

The present study investigates the presence and impact of four behavioural biases in the Nigerian equity market, namely; herd behaviour, anchoring, regret aversion and overconfident behaviour with regards to investment decision. The primary data provides the real time insight into investors' psychology. The findings of the study indicate that all the four (4) independent variables have impact on the dependent variable investment decision in the Nigerian stock market. Thus, overconfident behaviour is 12.2 % responsible for the investment decision, herding is 25.7%, anchoring is 14.1% and regret aversion is only 43.8%. This implies that individual investors feel the impact of regret aversion behaviour and herding more, then followed by anchoring and overconfidence.

Based on the review of the relevant literature and findings of the study, the following recommendations are hereby proffered: To make rational investment decision Classical finance models need to be supported by behavioural finance as such individual investors in the market should allow professionals to

manage their portfolios. Taking into cognizance complex finance models and behavioural biases will certainly reduce personal biases when making investment decision.

The need for a public campaign to increase awareness of basic investment principles as this is likely to help many individual investors make better decisions The Nigerian Securities and Exchange Commission (SEC) should think of a better way of releasing information about the market and how to possibly reduce this behavioural biases to the public as this have a way of affecting the decision taken by the investor about the market.

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