

**EFFECT OF HERDING BEHAVIOUR ON MARKET  
PERFORMANCE OF INSURANCE COMPANIES LISTED ON  
NAIROBI SECURITIES EXCHANGE**

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## DECLARATION

The project is my original work and has not been presented in any other University for the award of any degree.

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The research project has been presented for examination with my approval as the University supervisor.

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## **DEDICATION**

I dedicate the research project to my loving mum and beloved son for giving me encouragement and bearing propelled me through the entire course to achieve this goal.

## TABLE OF CONTENTS

<b>DECLARATION .....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>iii</b>
<b>DEDICATION .....</b>	<b>iv</b>
<b>LIST OF TABLES .....</b>	<b>vii</b>
<b>ABSTRACT.....</b>	<b>viii</b>
<b>ABBREVIATIONS AND ACRONYMS.....</b>	<b>ix</b>
<b>CHAPTER ONE .....</b>	<b>1</b>
<b>INTRODUCTION .....</b>	<b>1</b>
1.1 Background of the Study .....	1
1.1.1 Herding Behavior .....	2
1.1.2 Market Performance .....	3
1.1.3 Herding Behavior and Market Performance .....	3
1.1.4 Nairobi Securities Exchange .....	5
1.2 Research Problem .....	5
1.3 Research Objective .....	7
1.4 Value of the Study .....	7
<b>CHAPTER TWO .....</b>	<b>8</b>
<b>LITERATURE REVIEW .....</b>	<b>8</b>
2.1 Introduction.....	8
2.2 Theoretical Review .....	8
2.2.1 Behavioral Finance Theory .....	8
2.2.2 Prospect Theory.....	9
2.2.3 Cognitive Dissonance Theory .....	9
2.3 Determinants of Market Performance .....	10
2.3.1 Market volatility .....	10
2.3.2 Market Returns .....	11
2.3.3 Trading Volume .....	12
2.3.4 Herd Behavior .....	12
2.4 Empirical Literature Review.....	13
2.5 Conceptual Framework.....	15
2.6 Summary of Literature Review and Research Gaps.....	16
<b>CHAPTER THREE.....</b>	<b>17</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>17</b>
3.1 Introduction.....	17

3.2 Research Design .....	17
3.3 Population of the Study .....	17
3.4 Data Collection .....	17
3.6 Data Analysis .....	18
3.7 Test Statistics .....	18
3.8 Operationalization of Study Variables.....	19
<b>CHAPTER FOUR .....</b>	<b>20</b>
<b>DATA ANALYSIS, RESULTS AND DISCUSSION .....</b>	<b>20</b>
4.1 Introduction.....	20
4.2 Descriptive Statistics .....	20
4.3 Correlation Analysis .....	21
4.5 Regression Analysis.....	22
4.5.1 Analysis of Variance .....	22
4.5.2 Regression Coefficients.....	22
4.6 Discussion of Findings .....	23
<b>CHAPTER FIVE .....</b>	<b>25</b>
<b>SUMMARY, CONCLUSION AND RECOMMENDATIONS .....</b>	<b>25</b>
5.1 Introduction.....	25
5.2 Summary.....	25
5.3 Conclusion .....	25
5.4 Recommendations.....	26
5.5 Suggestion for Further Research .....	26
<b>REFERENCES .....</b>	<b>28</b>
<b>APPENDIX I.....</b>	<b>31</b>
LIST OF INSURANCE COMPANIES LISTED AT THE NSE .....	31
APPENDIX II: RAW DATA .....	32

## **LIST OF TABLES**

<b>Table 3.1:</b> Operationalization of Study Variables	23
<b>Table 4.1:</b> Reliability Statistics	25
<b>Table 4.2:</b> Reliability Test of the Variables	25
<b>Table 4.3:</b> KMO and Bartlett's Test	25
<b>Table 4.4:</b> Descriptive Statistics	26
<b>Table 4.5:</b> Correlation Matrix	27
<b>Table 4.6:</b> Model Summary	28
<b>Table 4.7:</b> Analysis of Variance	29
<b>Table 4.8:</b> Regression Coefficients	30

## ABSTRACT

The aim of the study was to establish whether herding behavior influence the market performance of listed insurance companies in the Kenyan securities markets. The research design adopted was descriptive. Research study involved all NSE listed insurance companies thus it was population study. Data on prices, market capitalization and volumes of shares traded for daily equities from January 2007 to December 2017 as obtained from the database from the NSE was used. Statistical package for social scientists was used to generate inferential statistics as well as measures of central tendency. A multiple regression analysis was then used to determine the effect of herding behavior on market performance of listed insurance firms in the Kenyan stock markets. The study found out that 48.6% of variations in market performance was caused by herding behavior and risk factors as given by the adjusted R square (adjusted  $R^2 = 0.486$ ). The F-test found out that the model was significant implying that herding behaviour and risk factors reliably predict market performance of the insurance companies listed while the regression coefficients established that herding behaviour and risk have a significant effect on market performance of the listed insurance companies at the NSE. The study therefore concluded that there is herding behaviour among investors in the listed insurance companies and that herding behaviour affect market performance of listed insurance firms. Therefore there is a need for keener scrutiny on trading behavior of investors at the NSE with a view to mitigate against probable effects of herding on stock returns if the phenomenon was to occur.



## **ABBREVIATIONS AND ACRONYMS**

- ADB:** African Development Bank
- AKI:** Association of Kenya Insurers
- CMA:** Capital Markets Authority
- GDP:** Gross Domestic Product
- IMF:** International Monetary Fund
- IPO:** Initial Public Offer
- IRA:** Insurance Regulatory Authority
- NASI:** Nairobi All Share Index
- NSE:** Nairobi Securities Exchange
- PE:** Price-to-Earnings Ratios

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Investment decisions are arrived by stakeholders by utilizing various financial techniques such as technical and fundamental analysis, and judgment. However, investor market behavior depends on both the rational thinking and also the psychological principles applied in reaching decisions in order to help understand why people purchase or dispose securities. This is because many investors imitate others led by sentiments, mood, fantasy and feelings in arriving at investment decisions (Statman, Fisher & Anginer, 2008). This type of decision making is referred to as herd behavior. Herd behavior is the act of arriving at a decision having been influenced by others without prior rational thinking (Banerjee, 1992). Interest has been developed in the area of herding behavior based on the influence that herd behavior may have on stock markets performance and the capacity to attain informational and allocative efficiency both from critics and proponents of the theory. In stock markets, herd behavior is defined as a behavioral propensity for investors to mimic other investors' behaviors or actions.

The study will be supported by the behavioral finance concepts which study how psychology affects the behavior of stock market players and its eventual influence on the financial markets (Sewell, 2007). Firstly the study will discuss the application of the behavioral finance theory which explores how the players react to psychological factors such as pessimism, optimism, hope and fear when making their investment decisions like in all other decisions they make (Mayo, 2009). Secondly, we will look at the regret theory which according to Savage (1954) is founded on the thinking that a decision maker considering two prospects, is interested not only about the end result but also about the result he would have received had he made a different choice. Thirdly the theory which discusses a number of states of mind influencing the decision making process of an investor (Kahneman & Tversky, 1979). Finally, the cognitive dissonance theory will be used. The theory applies in situations that involve conflicts in attitudes, behaviors or beliefs which produce a sense of discomfort that often leads to a change in an attitude, behaviors or beliefs in order to restore balance and minimize the discomfort (Festinger, 1957).

Chapter 487 insurance Act of the laws of Kenya govern Insurance companies. The act empowers the insurance regulatory authority (IRA) The regulation and coordination is done by insurance regulatory authority (IRA) which derives its powers from the Act. insurance discipline in Kenya. The insurance industry is aided by the .The Association of Kenya Insurers (AKI) aids the insurance industry by providing advisory and consultancy services aiming to promote the awareness of insurance services and products and enhances professionalism and reasonable business environment. Supervision and corporate governance are further enhanced by the framework set by the Capital Markets Authority (CMA) for business entities listed at the NSE. G Klapper, Sulla and Vittas (2002) conclude that like other regulated companies' insurers offer investors the advantages of professional management, portfolio diversification and high level of operational transparency. It is this professional expertise compensated by agency costs that is expected to generate portfolio returns that exceed what is generated in the market.

### **1.1.1 Herding Behavior**

Herding is the intention by market decision makers to mimic actions of fellow investors. Herding is to be differentiated from spurious herd behavior where people faced with similar huddles and information sets make similar resolutions. In order for an investor to mimic others, he must know and be impelled by behavior of others. An investor herds if he comes up with investment decisions without knowing the decisions made by other investors but does not go on with the investment when he realizes other investors have not done so. Alternatively, a person herds whenever he has information that investors are investing and therefore alters his decision from not to invest to investing (Subrahmanyam, 2007).

An integrated approach to herd behavior was suggested by (Raafat, Chater and Frith 2015). They described two key elements, the mechanism of transmitting ideas or behavior between people and the connection relationship between the individuals. They proposed that bringing together different theoretical approaches of herding supports the application of the concept to diverse domains such as neuroscience, cognitive and economics. Experts are concerned with establishing the presence of herd behavior, since the dependence on collective information instead of private information is likely to make prices to differ from basic value and the prevalent gainful trading prospects. Herd behavior has equally captured the interest of scholarly researches, since the related

behavioral influence on movements of security prices may impact on the characteristics of their risk and return (Banerjee, 1992).

### **1.1.2 Market Performance**

It can be defined as efficiency utilization of scarce resources to meet investors' expectations. It is also the measurement of stocks ability to increase or decrease the wealth of its shareholders. It is measured by its fluctuation in prices , when the stock price is high it shows good performance and when low it indicates poor performance. It is also the fundamental characteristic of an efficient stock market is its ability to maintain constant liquidity, a simple mechanism that determines investors' entry and exit. This needs adequate deals in the market (Yartey & Adjasi, 2007). The capital market is a notable element of the financial sector globally. An efficient shares market will likely result to a minimal return paid to equity holders by organizations for capital investments likewise it should permit people, properly hedge and price risk. A capital market can entice portfolio capital from foreigners and lead to increased mobilization of resources domestically, while growing the available resources required to invest in emerging countries.

Yarti and Adjasi (2007) note that, financial authorities such as ADB, IMF and World Bank, when appreciating the role of capital markets on economic growth, decided to undertake securities market growth strategy initiatives for new markets in emerging countries during 1980s and 1990s and they established that, new markets in developing countries have seen remarkable progress from the early 1990s. Over a period of ten years from 1995, the capitalization of new markets grew from less than \$2 trillion to about \$5 trillion (Yartey & Adjasi, 2007). Percentagewise, global market capitalization reported by new markets was over 12 percent with a continued steady growth (Standard & Poor, 2005).

### **1.1.3 Herding Behavior and Market Performance**

Herding behavior may lead to a financial over-reaction. Investors may make a decision based on the collective opinion of the majority which may cause them to invest in the same assets. For example, if information is obtained that a certain security is doing better than the rest or is undervalued then investors may converge and form a portfolio of two or more securities that are deemed to yield the same expectations for investment

purposes. The result may be the over or under pricing of the selected securities or even have an impact on the trading of the said securities.

As per the Efficient Markets Theory, securities' prices display all existing information to market participants. These stocks' prices are based on the demand and supply forces prevailing in the market. Abnormal profits are difficult to make when the market is efficient since information is widely available and makes it impossible to set prices that are higher than the ones set by the market forces. Herding therefore creates market inefficiencies if the information available is not used to form investment decisions and instead opinions formed are preferred. Hong, Kubik & Stein, (2005) revealed that herding existed among fund managers which was evident in the securities they purchased or sold in a particular quarter. We can deduce that their portfolio was constructed under the influence of the herd behavior in order to achieve the same results. Portfolio returns may be influenced by the herding behavior favorable or unfavorable based on the outcome herding.

The daily fluctuation of stock prices seen at the NSE is the main cause of the ills that cause market turbulence. A volatile market will discourage investors from putting their money on the stock market and may lose confidence (Maina, 2016). This may lead to a very slow uptake of the stock market performance or even a shutdown leading to negative impact on the economy. The market in Kenya has recently seen a considerable increase in the firms listed on the Nairobi Securities Exchange. Similarly, those interested in investing in the market have shown a positive response as demonstrated through consistent increase in market capitalization. Worth noting is the fact that a number of investors have had to bear losses due to following the masses and being overconfident as was exemplified in the Mumias, Kenya Airways, Uchumi and Eveready stocks.

Recent behavioral finance studies in Kenya have determined the presence of herding, overconfidence, anchoring, and fear of regret as concluded by Werah (2006), while Mbaluka (2008) concentrated on the psychological view point. Additionally, Nyaribo (2010) focused on frame dependence, overconfidence, representativeness, anchoring, and mental accounting. The researches above did not fully address as having an effect on the NSE investors while evaluating their decisions on investment. This study is intended at bridging the knowledge gap left by the above researches which have failed to properly focus on investor behavior on the NSE in Kenya today by determining the presence and impact of framing and regret aversion as a contribution towards the available literature on the effect of psychology on stock investment decisions.

#### **1.1.4 Nairobi Securities Exchange**

The institution was established in 1954 as the Nairobi Stock Exchange, based in Nairobi Kenya. It was registered under the Societies Act in British Kenya, being a voluntary association stock brokers in the European community. Regulation is done by Capital Market Authority (CMA). The institution has sixty-three (63) firms listed that are classified into eleven sectors (11).

The Nairobi securities Exchange 20 Share Index is price weighted. Its members are identified on the basis of their weighted market performance for a 12-month period as follows: Turnover 10%, Number of deals 20%, Shares Traded 30%, and Market Capitalization 40%. The index updates are done at the close of the day (My Stocks, 2014). It indicates the geometric mean of stock prices of the NSE's 20 top shares. In addition, there is a more broad-based NSE All Share Index (NASI), with an objective of capturing the market capitalization of all the NSE's listed equities traded in any given day.

#### **1.2 Research Problem**

Investors on the Nairobi Securities Exchange have for years been deemed to rely on statistics and expert opinions which are professionally analyzed and presented on making their investment decisions. Recent behavioral finance studies in Kenya have determined the

presence of herding, overconfidence, anchoring, and fear of regret as concluded by Werah (2006), while Mbaluka (2008) concentrated on the psychological aspect. Further, Nyaribo (2010) focused on frame dependence, overconfidence, representativeness, anchoring, and mental accounting. As such, the above studies did not fully address the certain-return bias, loss aversion, regret aversion and random walk framing as having an effect on the NSE investors while evaluating their decisions on investment. This study is intended at bridging the knowledge gap left by the above studies which have not failed to adequately focus on investor behavior on the NSE in Kenya today by establishing the presence and impact of certain-return bias, loss aversion, regret aversion and random walk framing as a contribution towards the existing literature on the effect of psychology on stock investment decisions with the hope of gaining in either the short and long term.

NSE market environment in Kenya cannot be entirely explained by the Traditional Finance Theory and thus its model and thus its models cannot perfectly apply to this market situation. According to Shiller (2002) literature in empirical finance which has been done in relation to underlying behavioral principles which come primarily from psychology, sociology and anthropology, suggests a myriad of behavioral principles as influencing stock investors. In Kenya, cognitive psychological biases have taken prominence over rational behavior on many occasions as pertains to stock market investments.

Recent behavioral finance studies in Kenya have determined the presence of herding, overconfidence, anchoring, and fear of regret as concluded by Werah (2006), while Mbaluka (2008) concentrated on the psychological view point. Additionally, Nyaribo (2010) focused on frame dependence, overconfidence, representativeness, anchoring, and mental accounting. The researches above did not address the effect of herding behaviour on the market performance of listed insurance companies at the NSE. This study is intended at bridging the area not yet explored by the answering the research question; Does herding behaviour affect the market performance of listed insurance companies in the Kenyan securities markets?

This study intends to bridge the knowledge gap left by the above studies which have not adequately focused on investor behavior on the NSE in Kenya today by establishing the presence and impact of certain-return bias, loss aversion, regret aversion and random

walk framing so as to contribute towards the already existing body of knowledge on the effect of psychology on stock investment decisions and the returns.

### **1.3 Research Objective**

The objective of this study is to establish whether herding behavior affects the market performance of listed insurance companies in the Kenyan securities markets.

### **1.4 Value of the Study**

The study is aimed at enriching available literature in guiding investors in their investment decision making process. It will fill gaps in the Kenyan stock market especially in areas with limited literature on behavioral finance. It will as well establish a new field of study in understanding the influence of herding in the Kenyan capital market.

Policy makers including the government, NSE, Capital Markets Authority (CMA) will be enlightened on the influence of herd behavior on market performance with the aim of developing and implementing relevant policies. Such information will go a long way in crafting policies that will ensure investors are protected from self-damage especially in herd behavior that may easily lead to market crashes.

To the academicians the study will incorporate additional information to existing body of knowledge, which can be used by researchers to come up with new theories and literature review when undertaking any research work. The study would also provide new insights into the emerging concepts in behavioral finance that would give good guidance to scholars in corporate finance.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In this chapter we review the available literature on behavioral finance theories and how to make investment decisions. It discusses the theoretical framework of the study as well as the empirical review on the behavioral models.

#### **2.2 Theoretical Review**

The research will be guided by a number of behavioral finance theories including: regret theory, prospect theory and cognitive dissonance theory.

##### **2.2.1 Behavioral Finance Theory**

The theory is developed based on human cognitive behavioral theories from anthropology, psychology and sociology, applied collectively with the principles of finance and economics (Shefrin, 2001). It aims at understanding and predicting systematic implications of psychological process of arriving at decisions made in the financial market. Behavioral finance is a finance subset which investigates how the finance sector agents' behavior is impacted by psychological dynamics which influence buying or selling decisions made thereby, affecting stock prices (Barberis & Thaler, 2003). The aim of the theories is to explain reasons why it is justifiable to conclude that there is inefficiency in markets. Heuristics are rules of thumb, advanced to enlighten how individuals arrive at decisions, make judgments, and find solutions to issues. This is applicable when faced with complicated issues or in situations where information is incomplete. The rules apply effectively in most situations, yet in others, they may cause systematic cognitive biases (Parikh, 2011).

Ogilo (2012) describes representativeness as a heuristic where people assume harmony among items that appear similar. Shiller (2000) suggested that people by nature do not like wasting time in exercising judgment hence follow the decisions of others. Herding behavior mostly arises when one lacks knowledge and therefore does not employ rigorous reasoning. Banerjee (1992) states that it is engaging in what everyone else is engaging in, even when his or her personal information informs him to do something quite different. He further argues that employing the information used by others to make

their decisions renders makes each person's decision less responsive to his or her own information and therefore, denies others a pool of information for future reference in arriving at decisions.

### **2.2.2 Prospect Theory**

In the late 70's of the last century several theories emerged, trying to fill in the gaps left unexplained by expected utility theory. In that particular field of study the most frequently cited paper is Prospect Theory (Kahneman & Tversky, 1979). The authors propose that the existing theories are unable to explain the process of individual decision and, moreover, individuals systematically make choices that violate the assumptions of expected utility hypothesis. Several experiences expose the apparent fragility of the theory in explaining the process of decision as a whole and to the matters at hand these findings are of the utmost relevance because in financial markets a decision process must be, by all accounts, efficient. The implications for financial decision makers are obvious, given the fact that when facing complex situations, the investors may not make the most efficient decision, in a mathematical, and thus financial, sense.

Kahneman & Tversky (1979) also argue that people usually behave as if improbable events are not possible and face highly probable outcomes as a certainty. That is where prospect theory comes in, proposing a mathematically formulated alternative to the expected utility hypothesis. A practical example of the workings of this theory in financial markets is given by Schiller (1999), who argues that, this theory can explain the excessive price attributed to out-of-the money or in-the-money options when compared to price obtained using the Black-Scholes model (likewise near-the-money options present prices consistent with the BS model). The justification results directly from the previously mentioned function since people tend to overestimate the low probability of the underlying reaching the strike price (Schiller, 1999). The theory explains why investors are risk-averse on profits relative to a reference point but risk-seeking on losses.

### **2.2.3 Cognitive Dissonance Theory**

It is a mental conflict that arises when an individual is confronted with some evidence that his beliefs are incorrect. When facing this type of situation individuals tend to make decisions not entirely rational since their goal is to mitigate that dissonance (Festinger,

1957). Schiller (1999) suggests that an individual can choose to ignore the new information he came in contact with or, in alternative, develop new arguments that can allow him/her to keep, and cope with, previous beliefs. Coval and Shumway (2001) studied the behaviour of traders at the Chicago Board of Trade and conclude that they exhibit high degrees of loss aversion, and that such characteristic has a severe impact on their behaviour while facing decisions that encompass risk. In this particular environment, traders that suffer losses during the morning trading period display a higher probability to take on more risk in the afternoon. On the other hand, traders with positive returns in the morning show the tendency to trade less, and in smaller amounts, in the afternoon.

Ritter (2003) argues that cognitive psychology and limits to arbitrage are the foundation stones of the study of behavioral finance, offering a summary of the most common cognitive biases showed by investors, e.g., overconfidence, mental accounting or framing. The author further argues that heuristics, which are usually described as mental rules of thumb that allow individuals to make decisions in a simplified, and generally more effective way, can also lead to cognitive biases. The theory explains why individuals experience discomfort or tension when their attitudes or beliefs are not in line with their behaviors.

## **2.3 Determinants of Market Performance**

Portfolio returns can be maximized as long as the portfolio construction was done well. Portfolios that are successful are usually based on reasonable expectations and research rather than intuition. Many portfolios have failed because investors attempt to guess which stock or asset will perform better tomorrow. Brinson, Hood and Beebower (1991), examined the effects of investments policy, timing in the market and manager selection on the performance of a stock market. The policy on investment identifies the long-term plan of allocating assets including their classes and weights. This is done with the aim of controlling the overall risk as well as meeting the fund objectives.

### **2.3.1 Market volatility**

Volatility, resulting in the fat-tail spread of earnings, is a fundamental concept in financial markets. Its cause has been a key issue in financial studies. One can conclude that market volatility may be as a result of investment decisions based on receipt of new

information in markets (Admati and Pfleiderer, 1988). Stock volatility is a significant area in finance: a reference point for pricing, investment and setting strategies for managing risks. In ideal situations, stock prices are expected to adjust instantaneously to up-to-date information. Hence, market volatility is solely influenced by the incessant variation of prices of stocks due to availability of new information. Such considerations include herding (Thaler, 1991; Shefrin, 2000). Thus, at times we may fail to conclude that efficient market hypothesis applies especially when investors make decisions not influenced by the information they have acquired. According to Friedman (1953) some investors destabilize the market by acquiring stocks at high prices and dispose them when the prices fall. On his part, Hellwig (1980) suggested that volatility is influenced by irrational trading, given that adjustment in prices based on uninformed trade seem to revert.

Herding is prevalent when uninformed investors follow trends in the market by procuring stocks during periods of rising prices and disposing when they are falling because of information asymmetry. Wang (1993) observes that although trading is uninformed, investors may be acting rationally if their decisions are made based on asymmetrical information. Volatility is also driven by the action of investors mimicking one another (Froot et al, 1992).

### **2.3.2 Market Returns**

According to Davis (2001) capital market returns are defined as the gain or loss of a stock in a given period comprising of dividends and capital gains on an investment, quoted as a percentage. The framework of security price behavior has its origin with Markowitz in 1952 and 1959. The Markowitz model is applicable in a single period, where at the beginning of the period, a market participant starts a portfolio. The participant's aim is maximization of expected return, at minimal risk.

When participants target the same stock, the outcome is either over or under pricing of stocks, general over and under trading in the securities markets and lower or higher bond yields (Nofsinger & Sias, 1999). Equilibrium as the stocks adjusts. Hirshleifer, Subramanian and Titman (1994) observed that when mimicking others, investors aim only at a subset of stocks while ignoring other stocks with similar exogenous features,

these results to overall stock market inefficiencies. Herd behavior leads to stock price volatility and therefore, returns volatility.

### **2.3.3 Trading Volume**

Trading volume is a key element that influences how the price mechanism functions in the stock market and how stocks generally perform. Indeed, trading volume infer the quality of the market information, and subsequently comprises of information concerning adjustments in prices (Blume et al., 1994). Proponents of behavioral finance suggest that when market participants overlook earlier information to mimic decisions of other participants, they seem to influence trade of a given security, causing trading volumes to rise to unusual levels.

Therefore, the volume is a significant element in influencing herd tendencies and may be a crucial aspect in describing herd behavior (BenSaïda ewt al., 2015). Investors are very optimistic about their ventures and rely heavily on their investing skills; resulting from the overconfident investors trading more and more, leading to a rise in both market volatility and trading volume which often enables them to bear severe losses (Gervais & Odean, 2001).

### **2.3.4 Herd Behavior**

Modern pricing theory proposes that, the market prices equal fundamental value and asset returns relative exposures to systematic non diversifiable risk. Demand for a stock increases whenever there is convergence of investors' decision to invest in that particular stock (Nofsinger & Sias, 1999). Had that stock been underpriced to warrant such effect then, as per arbitrage pricing theory, supply and demand factors will be at equilibrium as the stock adjusts. Suppose it was due to herding, then market supply would be more than demand leading to a fall in prices.

This will lead to both the capital gains and dividend returns falling sharply. On the other hand, had the stock been overpriced, then all investors will avoid the stock. When the stock will be trading, demand will outweigh the supply hence prices will adjust as the market tends to settle at the equilibrium. Investors trade in a similar manner without regard to factual analysis and informed predictions. Some of the indicators of herding in stock counters include the accumulation of unproductive counters by investors against

expert analysis as well as skewed market return. Other indications may include destabilized prices leading to bubble-like episodes in financial markets (Ombai, 2010).

## **2.4 Empirical Literature Review**

Karungu, Memba and Muturi (2018) conducted a study aiming to establish the influence of investor's action on the performance of Nairobi Securities Exchange (NSE) indices. The study was a period of 12 years, January 2004 to December 2015. A census approach was adopted since the study comprised of all market participants at the NSE and the study period was done based on each specific objective. The data collection method used was primary data, where data was collected from all the market participants. The data was analysed using Statistical Package for Social Sciences (SPSS). The primary data findings showed all the indices to be of less importance to have an effect on the securities behaviour but the overall NSE indices performance was statistically influenced. The concluded that all the indices play a complimentary role thus the need for the retention of all. The study recommended increase of the respondents to include investors by future researchers.

Cherono, Nasieku & Olweny (2018) studied the effect of herding behavior on stock market reaction in Kenya. The population target was 67 listed companies at the Nairobi Securities Exchange. Analysis was done using a sample of 48 listed companies. Secondary data was obtained from Nairobi Securities Exchange database for the companies listed for the period 2004 to 2016 to analyze the data. Quantitative research design was adopted by the study. The unit root results indicated that all the variable were unmovng.. Analysis of data was done using panel data regression. Unit root tests revealed the dependent and the dependent variable were both stationary at level. Hausman tests disclosed that the variance component model was to a great extent appropriate than the constant variable over period of time. Panel data regression analysis model was used. Random effect model (EGLS) showed that herding behaviour had a positive statistically importance effect on financial market reaction. Results of the study revealed that herding behaviour has a positive significant effect on financial market reaction in Kenya.

Naomi, Kiprop and Tanui (2018) conducted a study on the influence of herding behavior on investment decision of SMEs in Bomet County, Kenya. The study targeted 4196

SMEs registered in Bomet County of which 108 were selected using stratified random sampling. Cronbach's coefficient alpha was used to calculate the reliability of research instrument, Primary data was used to obtain the required information by using questionnaires. Descriptive statistics and inferential statistics with aid of Statistical Package for Social Science (SPSS) software version 21 was used to analyze data obtained and presentation through tables and summary made in percentages and proportions. The correlation coefficient analysis revealed herding behavior had a positive correlation relationship on the dependent variable. The multiple linear regression analysis results showed that herding behavior had a negative beta of 0.146 this showed it has a negative impact on investment decision hence not significant. The study hence concluded that herding behavior is insignificant factor in influencing investment decisions of SMEs in Bomet County. The study recommended that investors not to imitate others but to trust themselves in making their own personal decisions and also the government to implement more policies which boosts the growth of SMEs and further research to be done other factors influencing investment decisions.

In other studies, Werah (2006) researched on the effect of behavioral factors on buyer activities at the NSE. The research set out to survey on how behavioral considerations affect decisions made by investors at the NSE. It primarily explored the function played by behavioral factors on investors' decisions. The findings suggested that there was some extent of irrational behavior among investment market participants. Hwang and Salmon (2004) contrarily suggested another methodology for measuring herding. Their methodology was based on beta dispersion and is not similar to the methodology of previous researches. The findings of their study contradicted that advanced in previous researches such as Chang et al (2000) and Chiang and Zheng (2010). The researchers conclude that herd behavior is less predominant at times of market stress.

On a global perspective, Chiang and Zheng (2010) did a study which examined herding behavior in global markets. In applying daily data for 18 countries from May 25, 1988, through April 24, 2009, they found evidence of herding in advanced stock markets (except the US) and in Asian markets. Evidence of herding was not found in Latin American markets. Evidence suggested that stock return dispersions in the US played an important role in explaining the non-US market's herding activity. With the exceptions of the US and Latin American markets, herding was found to be present in both up and

down markets, although herding asymmetry was more intense in Asian markets during rising markets. Evidence suggested that crisis triggered herding activity in the crisis country of origin and then produced a contagion effect, which spreads the crisis to neighboring countries. Reassuring evidence for herding formation in the US and Latin American markets during crisis periods was found.

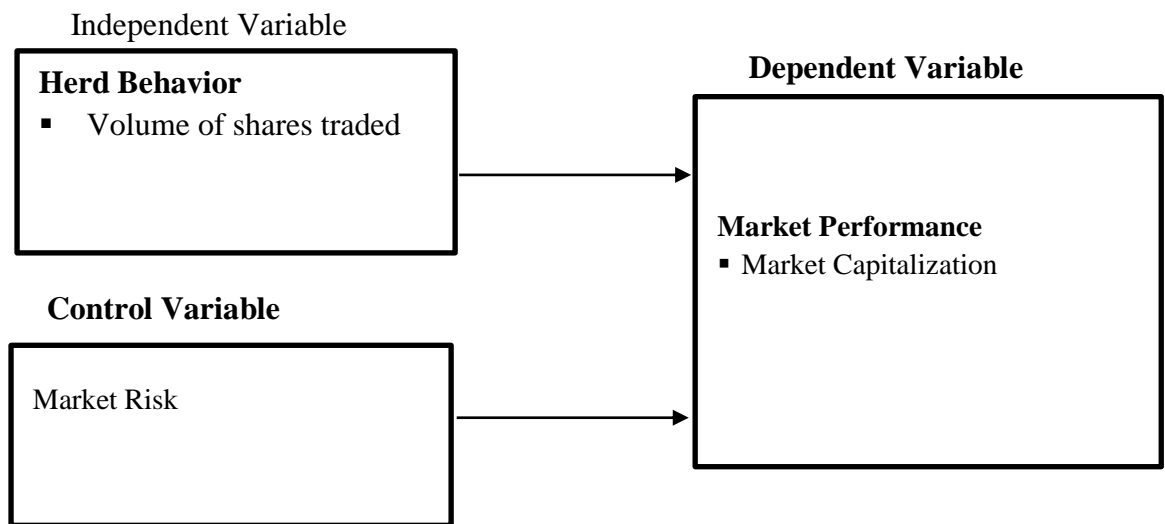
Özsu (2015) conducted a study to detect whether there is herding or not in Borsa Istanbul. To test the existence of herding, stock returns traded on Borsa Istanbul and BIST 100 Index as market indicator were used. Data covered daily returns from 1988 to 2014 and intraday returns from 1995 to 2014. Firstly, herding was analyzed based on the methodology of cross-sectional dispersion of the stocks developed by Christie and Huang (1995) and Chang, Cheng and Khorana (2000). The results indicated that there was no herding for both up and down markets for daily and intraday intervals in Borsa Istanbul. However, tendency of herding was higher in up markets. To enhance and compare the results, the methodology based on the cross-sectional volatility of beta coefficients suggested by Hwang and Salmon (2004) was used. This methodology provided evidence of herding in Borsa Istanbul. It also observed that investors follow the market trend more in session two markets rather than session one markets. Thus, it is concluded that investors imitate the others more under normal market conditions rather than noisy market conditions. These results were found to be consistent with the assumptions of Hwang and Salmon (2004).

## **2.5 Conceptual Framework**

This research seeks to find out the effect of herd behavior on market performance of stocks of Insurance companies trading at the NSE, taking into account other researchers' point of view together with the observations on the subject of research. The independence variable included herd behaviour that was measured using the volume of shares traded and the dependent variable was market performance measured using market capitalization. The relationship between herding behaviour and market performance was controlled by market risk. The market risk was determined by computing the standard deviation of the share prices using the annual share price averages. The relationship of the conceptual framework is as given in Figure 3.1 below:



**Figure 3.1: Conceptual Framework**



**Source:** Researcher (2019)

## **2.6 Summary of Literature Review and Research Gaps**

The traditional classical finance theory requires rationality in the behavior of investors. Conversely, behavioral finance theories dictate irrational characteristics of investor. Of the two theories, behavioral finance has not received much attention and is therefore rich in unexplored gaps. Mwimali (2012) investigated whether herding behavior is evident in the Nairobi Securities Exchange. The conclusions drawn from are that herding does not exist among investors at the NSE. Siloya (2015) set to discover the influence of herding behavior on the stock returns at the NSE revealed that there is no evidence of herd behaviour and its effects on securities returns at the Nairobi Securities Exchange.

Herding as a behavioral heuristic has been extensively studied at the Nairobi Securities Exchange, there have also been studies of herding during extreme market situations such as during global financial crisis and specific investor analysis. There are notable gaps that need further review; the mixed outcomes on the presence of herd behaviour in the NSE provide an area for further research. The effect of herding on market performance at the Nairobi Securities Exchange is such a gap. The study is aimed at bridging the gap by analyzing data from listed insurance companies at the NSE.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The section describes the research methodology which was used in the study including the research design, target population, data collection, and data analysis.

#### **3.2 Research Design**

The research design adopted was. Descriptive research design was adopted in measuring variables in their natural state and analyzed them to arrive at the stock price, volatility and volume movements. This made it easier for data to be organized in patterns as they emerge during regression analysis. Descriptive research is a statistical approach that is used to synthesize the empirical evidence of a given study quantitatively. According to Flick (2009), descriptive research is now commonly applied in the area of economics and finance due to its usefulness in evaluation of policies. Groves (2004) notes that descriptive approach results in accurate information of individuals, events or situations.

#### **3.3 Population of the Study**

This research study involved all insurance companies listed at NSE. thus it was a census study. This research targeted to study market performance for listed insurance companies in the NSE over a period of ten years from January 2008 to December 2017. This is considered an appropriate period that covers at least two economic cycles and will permit observation of the market over a longer time period to give weight to the study findings and obtain as many events that have an effect on the securities market over the said time period. Where ten-year data is not available, then the average returns for the available period will be calculated (Mwangi, 2014).

#### **3.4 Data Collection**

Secondary prices, market capitalization and volumes of shares traded for daily equities for the insurance companies in the NSE from January 2007 to December 2017 were obtained from the database from the NSE. The consideration of the insurance companies' shares is because it is price weighted hence it is suitable when measuring market performance (Maina, 2014). The insurance companies' stocks are actively traded stocks where herding is likely to be demonstrated. The use of a number of the daily closing

prices of a single share guarantees that one is analyzing an understandable and clearly defined market. Additionally, observation of daily prices demonstrates reactions to easily obtainable information and inter observational data of significant importance that wider interval observations such as weekly or monthly cannot demonstrate. The researcher aimed to present a summary of sixty (60) data points for each variable using a 10-year study period. There were some data gaps due unavailability of some data in some years and therefore the data points were fifty-two (52). The reason is that CIC insurance group and Liberty Holdings Ltd were not listed during the period 2008, 2009 and 2010. This however represents 86.67% of the data points expected making the study to remain valid

### **3.6 Data Analysis**

The data collected was validated and edited to ensure their accuracy, uniformity, consistency and completeness. Statistical package for social scientists was then used to generate inferential statistics as well as measures of central tendency. A multiple regression analysis was then used to determine the effect of herding behavior on the market performance of listed insurance companies in the Kenyan securities markets. In this study, the following regression model was used:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

**Where:**

Y = Market Performance (Dependent variable).

a = Constant

$\beta_1$  = Coefficient of Independent variable

$\beta_2$  = Coefficient of Control Variable

$X_1$  = Herding Behaviour

$X_2$  = Market Risk

$\varepsilon$  = Error term.

### **3.7 Test Statistics**

The t-test and p-values was employed to help in the determination of how significant each variable under study was while an F-test and p-values helped to test the suitability

of the regression model. Computation of Pearson correlation coefficient,  $R^2$ , beta coefficients, and p values were also done.

### 3.8 Operationalization of Study Variables

The operationalization study is as presented in Table 3.1

**Table 3.1: Operationalization of Study Variables**

<b>Variable</b>	<b>Sub-Variable</b>	<b>Indicators</b>	<b>Source</b>
	Herding Behaviour	The number of shares traded annually.	Gervais and Odean (2001).
Dependent Variable	Performance of the Market	Annual market capitalization	Nofsinger and Sias (1999).
Control Variable	Market Risk	Share price volatility	Shefrin (2000)

**Source:** Researcher (2019)

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

This chapter discusses the study findings based on the objective of the study. The first part represents the outcome of the diagnostic tests, followed by reliability and validity test to ascertain that the data extracted would support the study expectations. The second part involved descriptive analysis of the data followed by a correlational analysis of the variables under study. The last part of the analysis included regression analysis and then a general discussion of the findings in relation to the objective of the study.

#### 4.2 Descriptive Statistics

The mean of market performance is 9.95 with a standard deviation of .332. The herding behaviour has a mean of 4.15 with a standard deviation of 1.150 while the mean price market risk is 3.63 with a standard deviation of .708. The high mean value and the low standard deviation in herding behaviour and market risk is an indication of presence of herding behaviour in the market. The implication of the low standard deviation is that there are no much variations in the volumes of shares traded indicating possible behavioural imitations among the investors hence existence of herding behaviour. The high mean of market performance equally indicate good market performance as measured by the market capitalization index.

In terms of skewness and kurtosis, the positive skewness means that the data is positively skewed to the right while kurtosis statistics indicates whether the data is mesokurtic, platykurtic or leptokurtic. The findings indicate that market performance data was platykurtic since the distributions have negative kurtosis implying that there were no significant variations in market performance annually during the period under study. Herding behaviour and market risk on the other hand represents a mesokurtic distributions because their kurtosis is near zero. This indicates existence of herding behaviour since it shows elements of investors imitating each other in terms of making investment decisions. The analysis is given in Table 4.4:

**Table 4.4: Descriptive Statistics**

	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Market Performance	52	9.95	.332	.188	.325	-.346	.639
Herding Behaviour	52	4.15	1.150	.531	.330	.040	.650
Market Risk	52	3.63	.708	.181	.325	.525	.639
Valid N (list wise)	52						

**Source:** Research Data (2019)

### 4.3 Correlation Analysis

The computation of pearson bivariate correlation was done to ascertain how the variables correlate. A linear relationship is assumed and the correlation coefficient ranges from -1.0 (perfect negative correlation) to +1.0 (perfect positive correlation) (Sekaran, 2015). Table 4.5 show that herding behavior and market performance have moderate positive correlation ( $r > .30$ ) and market risk and market performance equally have moderate positive correlation ( $r > .30$ ) ( $r = .398$  and  $r = .586$ ) respectively. The implication is that herding behaviour and market risk significantly and positively affect market performance of the listed insurance companies at the NSE. The analysis is as presented in Table 4.5:

**Table 4.5: Correlation Matrix**

		Market Performance	Herding Behaviour	Risk
Market Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	52		
Herding Behaviour	Pearson Correlation	.398**	1	
	Sig. (2-tailed)	0.003		
	N	52	52	
Risk	Pearson Correlation	.586**	0.025	1
	Sig. (2-tailed)	0.000	0.855	
	N	52	52	52

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Source:** Research Data (2019)

#### 4.5 Regression Analysis

Regression analysis was conducted to assess the suitability of the research model. The regression analysis also assisted to predict causal relationship between herding behaviour and market performance. Market risk was used as a moderator being measured by price volatility of shares. The study found out that 49.8% of variations in market performance is caused by herding behaviour and risk factors ( $R^2 = 0.526$ , adjusted  $R^2 = 0.498$ ). The implication is that 50.2% of the variations in market performance is explained by variations in other factors not related to the studied variables. The analysis is as presented in Table 4.6:

**Table 4.6: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.725 <sup>a</sup>	.526	.498	.23503

a. Predictors: (Constant), Herding Behaviour, Risk

##### 4.5.1 Analysis of Variance

The analysis of variance is as presented in Table 4.7. It indicates that the model was significant ( $p < 0.05$ ). The implication is that herding behaviour and risk reliably predict market performance of the listed insurance companies. This means that market performance of the listed insurance companies at the NSE is significantly affected by herding behaviour of investors as well as the risk factors.

**Table 4.7: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.066	3	1.022	18.499	.000 <sup>b</sup>
	Residual	2.762	50	.055		
	Total	5.827	53			

a. Dependent Variable: Market Capitalization

b. Predictors: (Constant), Herding behaviour, Risk

##### 4.5.2 Regression Coefficients

The Table 4.8 indicates that herding behaviour leads to a .125 change in market performance and the effect is significant ( $\beta = .125$ ,  $p < 0.05$ ). The findings also shows that a unit increase in risk leads to a .192 increase in market performance and the effect is

considered significant as given by ( $\beta=.192$ ,  $p<0.05$ ). Generally, the implication is that herding behaviour and risk have a significant effect on the market performance of the listed insurance companies at the NSE. The analysis is as presented in Table 4.8:

**Table 4.8: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8.693	.221		39.248	.000
1 Herding Behaviour	.125	.029	.433	4.296	.000
Market Risk	.192	.061	.410	3.152	.003

a. Dependent Variable: Market Capitalization

As per the findings, the regression model can be stated as below:

$$Y = 8.693 + .125X_1 + .192X_3 + \varepsilon$$

**Where:**

Y = Market Performance (Dependent variable).

a = Constant

$\beta_1$  = Coefficient of Independent variables

$\beta_2$  = Coefficient of Control Variable

$X_1$  = Herding Behaviour

$X_2$  = Risk

#### 4.6 Discussion of Findings

The research objective was the basis for the findings. Based on descriptive analysis, mean, standard deviation, skewness and kurtosis were calculated and tabulated. Herding behavior had a mean of 4.15 with a standard deviation of 1.150 while the mean of market risk factor was 3.63 with a standard deviation of .708. High mean value and the low standard deviation in herding behaviour and market risk is an indication of existence of herding behaviour in the market. The implication of low standard deviation is that there were no much variations in herding behaviour indicating possible behavioural imitations among the investors hence existence of herding behaviour. The



high mean of market performance equally indicate good market performance as measured by the market capitalization index.

Based on the correlation analysis, herding behavior and market performance had a moderate positive correlation ( $r > .30$ ) and market risk and market performance equally had a moderate positive correlation ( $r > .30$ ) ( $r = .398$  and  $r = .586$ ) respectively. The implication is that herding behaviour and risk significantly and positively affect market performance of the listed insurance companies at the NSE.

The regression analysis on the other hand established that 49.8% of variations in market performance is caused by herding behaviour and risk factors ( $R^2 = 0.526$ , adjusted  $R^2 = 0.498$ ). The analysis of variance on the other hand indicated that, the model was significant implying that, herding behaviour and risk factors reliably predict market performance of the listed insurance companies. Finally, the regression coefficients established that herding behaviour leads to a .125 change in market performance and the effect is significant ( $\beta = .125$ ,  $p < 0.05$ ) while at the same time a unit increase in risk led to a .192 increase in market performance and the effect was considered significant as given by ( $\beta = .192$ ,  $p < 0.05$ ) implying that herding behaviour and risk have a significant effect on the market performance of the listed insurance companies at the NSE.

The general implication is that herding behaviour significantly affect the market performance of the listed insurance companies at the NSE. The findings are consistent with that of Karungu, Memba and Muturi (2018) who concluded that investor's behaviour affect the performance of Nairobi Securities Exchange (NSE) indices and the findings by Cherono, Nasieku & Olweny (2018) who revealed that herding behaviour has a positive significant effect on stock market reaction in Kenya. The study by Naomi, Kiprop and Tanui (2018) however concluded that herding behavior is not an important factor in influencing investment decisions of SMEs in Bomet County. The findings are also consistent with those done in other countries such as the study by Chiang and Zheng (2010) which stated that when there are high risk factors in the market, there is evidence of herding formation in the US and Latin American markets.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter gives a summary of the results from the data analysis are stated here, conclusion and recommendations are also covered in this section. Suggestion for further study is also covered in this chapter.

#### 5.2 Summary

Findings are based on research objective. The descriptive analysis which was done for the study found out that high mean value and the low standard behaviour in herding behaviour and risk is an indication of existence of herding behaviour in the stock market. The high mean of market performance equally indicate good market performance as measured by the market capitalization index. Whereas the correlation analysis established herding behaviour and risk have a moderately significant and positive effect on the market performance of the listed insurance companies listed at NSE.

From regression analysis, F-test asserts that the regression model was significant and that herding behaviour and risk factors reliably predict market performance of insurance companies listed . Equally, the adjusted R square imply that herding behaviour and risk have a significant effect on the market performance of the listed insurance companies at the NSE.

#### 5.3 Conclusion

Conclusions are based largely on the research objective and findings. This study concludes that herding behaviour exists at NSE among investors in listed insurance companies. Further, the study established that herding behaviour and risk have a moderate but positive effect on the market performance of the listed insurance companies at the NSE. The study equally concludes that herding behaviour and risk factors reliably predict market performance of insurance companies listed implying that herding behaviour and risk have a significant effect on the market performance of the insurance companies listed in NSE.

Based on tests conducted, F-test indicated that herding behaviour and risk reliably predict market performance of the listed insurance companies. In other words it means that market performance of the insurance companies listed at the NSE was significantly affected by herding behaviour of investors as well as the risk factors. The adjusted R square also concluded that 49.8% of variations in market performance is caused by herding behaviour and risk factors ( $R^2 = 0.526$ , adjusted  $R^2 = 0.498$ ).

#### **5.4 Recommendations**

The study has established herding behaviour is reality at the NSE for investors' imitation in listed insurance companies and the fact that herding behaviour affect market performance. There is therefore the need for keen scrutiny on trading behavior of investors at the NSE with a view to mitigate against probable effects of herding on market performance especially on a negative trend. The management of the capital market authority and the NSE should strengthen policies that will help regulate and smoothen out herding behaviour. These policies include and not limited to rigorous investor training on the possible effects of irrational investments, strict adherence to upward and downward movement of stock prices thresholds as stipulated by law. The aim is to cushion the securities exchange and put in place polices that would encourage herding behavior to further improve market performance.

The study also recommends that investors should make their own decision basing on their interest, capabilities or efforts and not to imitate others because they might not make proper decisions and their enterprise might fail. The government should come up with training programmes that guide potential investors to make proper decision without the influence of others or copying others since herding behavior is significant in influencing investment decision.

#### **5.5 Suggestion for Further Research**

This research was not able to identify conclusively all the possible variables with explanation power on market performance. It is therefore in this light that the future researchers are encouraged to consider other investor behavior biases that are deemed to cause market performance which would increase the predictive capability of the model.

This study aimed at insurance companies listed and that therefore further research should be done to target companies in other sectors. The study recommends study to be done on the effects of herding behavior on growth on SMEs and also the whole market.

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## **APPENDIX I**

### **LIST OF INSURANCE COMPANIES LISTED AT THE NSE**

1. BRITAM HOLDING PLC
2. CIC INSURANCE GROUP PLC
3. JUBILEE HOLDINGS LTD
4. KENYA REINSURANCE
5. LIBERTY KENYA HOLDINGS LTD
6. SANLAM KENYA PLC



## APPENDIX II: RAW DATA

Company	YEAR	Market Performance	Herding Behaviour	Risk
Britam Holdings Plc	2008	9.743117625	3.176091259	3.081909618
	2009	9.713910354	3.51851394	3.429078622
	2010	9.959423022	2.903089987	3.650722392
	2011	9.992798634	5.932930143	2.901421756
	2012	10.05494654	5.196452542	3.002940144
	2013	9.457207498	5.789228057	3.584783379
	2014	10.76456824	7.335724614	3.787967134
	2015	10.4013903	5.189490314	3.885206498
	2016	10.28744695	4.507855872	3.85361062
	2017	10.46045817	4.758154622	3.834485716
CIC Insurance Group plc	2008			
	2009			
	2010			
	2011	9.528276479	3.653212514	2.858858529
	2012	9.888608239	6.091033516	3.002940144
	2013	10.11289684	6.477945631	3.704959987
	2014	10.39983235	5.825945143	3.988986246
	2015	10.20995281	3.806179974	3.950127992
	2016	9.997344718	5.626443025	3.915118804
	2017	10.16574915	4.33243846	3.912336861
Jubilee Holdings	2008	9.743117625	2.698970004	3.153833912
	2009	9.713910354	3.51851394	3.445679011
	2010	9.959423022	2.903089987	4.758212009
	2011	9.926329582	3.653212514	4.169652833
	2012	10.01543667	5.433449794	4.26240298
	2013	10.28654841	3.792391689	4.781234429
	2014	10.43060308	4.187520721	5.067188273
	2015	10.46223593	3.491361694	5.167258906
	2016	10.50897933	3.838849091	5.194314937
	2017	10.55827649	3.397940009	5.210610092
Kenya Reinsurance	2008	9.883661435	4.984054508	3.720676013
	2009	9.846337112	4.487138375	3.406152655
	2010	9.821513528	4.485721426	3.644859248
	2011	9.641474111	3.707570176	2.834278819
	2012	9.874450217	2	2.863692091
	2013	9.984945484	4.36361198	3.603493238
	2014	10.08059484	4.944975908	3.919418048
	2015	10.16728573	3.462397998	3.802044346
	2016	10.19724896	3.740362689	3.714544347
	2017	10.10274501	5.697752274	3.783074915
Liberty Kenya Holdings	2008			

<b>Company</b>	<b>YEAR</b>	<b>Market Performance</b>	<b>Herding Behaviour</b>	<b>Risk</b>
	2009			
	2010			
	2011	9.528276465	3.815909651	2.858858529
	2012	9.538109967	4.056904851	2.983563551
	2013	9.889571664	4.754348336	3.5861832
	2014	10.09535068	3.785329835	3.859757047
	2015	10.01896234	2.301029996	3.818255884
	2016	9.847853479	4.57863921	3.820608336
	2017	9.815287556	2.698970004	3.846488037
SanLam Kenya Plc	2008	9.473632927	2.537819095	3.861388775
	2009	9.334453751	2.301029996	3.46759784
	2010	9.497482537	2.77815125	3.69502193
	2011	9.299289334	3.698970004	2.256152025
	2012	9.587037118	3.204119983	2.275341074
	2013	9.936513742	3.431363764	2.217806255
	2014	10.06145248	4.414973348	2.133397101
	2015	9.936513742	3.973127854	3.217479838
	2016	9.597695186	3.755874856	3.652019956
	2017	9.60162548	3	3.668205311