

**THE EFFECT OF ONLINE AND MOBILE TRADING  
PRACTICES ON THE ACTIVE MOMENTUM TRADING AT  
NAIROBI SECURITIES EXCHANGE.**

**BY**

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**DECLARATION**

I, Gathathai Mwangi declare that this is my original work and has not been presented in any other University or College for Examination or Academic purposes.

Signature..... Date.....

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**SUPERVISOR'S APPROVAL**

This research project has been submitted for examination with my approval as supervisor.

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## **DEDICATION**

I dedicate this research project to my mother Alice Njeri, my dad John Mwangi and a dear friend Juliet Mbula Ngala who all have been of help and great source of inspiration and joy in my daily endeavors to be what God intended me to be.

## ABSTRACT

The primary purposes of the study were to study the effect of online and mobile trading practices on the active momentum trading at Nairobi Securities Exchange. The target population was companies listed in Nairobi Securities Exchange and had do make up NSE 20 Share Index. The results of the study were both qualitative and quantitative. Quantitative data collected from NSE 2010 to 2012 historical trade price, NSE 20 share Index value and number of share traded each day was analyzed using multiple regression analysis and the correlation was determine as well as hypothesis testing to determine the validity of the equation obtained. The information was also represented by use of graphs, table, and pie charts and in prose-form. This was done by gathering and analyzing data, then using excel to computes and present the figures. The research found out that indeed internet and mobile device usage has indeed affected momentum trading in Nairobi Securities Exchange. Introduction of Broker Back Office System, (BBOS) in September 2011 which we can highlight as being an activity that did changed the NSE to an online trading practicing. Using momentum trading strategies which operate on shorting any stock that touches its six month low and longing stock that touches six month high internet has facilitated easier tracking of their price and also efficiency in executing the transaction regardless of the location. The study found that just as the in the banking sector where the influence was there but still low the same happens in the securities exchange. The study recommends further research on how internet is influencing and affecting different sector in Kenyan economy especially securities market. Also it did recommend necessary promotion steps to educate potential investor of the benefit of online and mobile trading. From the study there is a need to improve on cybercrime security to avoid investors losing fund. Also there is a need to lower related cost as online system is much cheaper and to improve the efficiency and ease of use from different broker agencies interfaces.

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## **LIST OF ABBREVIATION**

AMT	Active Momentum Trader
ASI	All Share Index
ATS	Automatic Trading System
BBOS	Broker Back Office System,
CDSC	Central Depository & Settlement Corporation
ETFs	Exchange Traded Funds
NASDAQ	National Association of Securities Dealers Automated Quotations
NIC Bank	National Industrial Credit Bank
NSE	Nairobi Security Exchange
RIA	Registered Investment Advisory
REITS	Real Estate Investment Trusts
SBG	Standard Bank Group
WAN	Wide Area Network
UTAUT	The Unified Theory of Acceptance and Use of Technology

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of Study**

Online and mobile trading has improved efficiency and effectiveness of active momentum investors in Nairobi Security Exchange as explained by Ngugi (2013). Introduction of online system has strengthened market surveillance, stamp out concerns of insider trading and flag out irregular trades. These were major concern before the market had automated its system. McGowan (2011) observed such a system has allowed many changes and improvements that were not possible before like longer trading hours per day and more options for transactions and trades. Automatic Trading System has delivered more efficient trading and transaction processing. It has opened the path for a modernized exchange ready for even greater growth. It has helped bring transparency in the Kenyan equity market and liquidity in the secondary trading bond market.

Gatuita (2011) in his paper ‘The impact of automated trading systems (ATS) on Share trading in the Nairobi Securities Exchange’ says in 2006 NSE implemented an automation of trading system at the exchange. The system included traders and dealers from 19 broker firms, licensed authorized securities dealers and match markers, while assets tradable on this platform include equity, fixed income (Bonds), real estate investment trusts (REITS), and exchange traded funds (ETFs). A dedicated Wide Area Network (WAN) platform was implemented in 2007 and it eradicated the need for brokers to send their staff to the trading floor to conduct business and more

has been enabled on the automated system, giving it greater effectiveness in the market. Nairobi securities exchange press (2012) reported that introduction of the Broker Back Office System (BBOS), a comprehensive transaction and information management system for use by brokers in the market was another milestone. Samaniego (2012) explain the system integrate features that geared towards ensuring proper controls and best practice in trades transactions and client's information management. It also bring standardization as well as improvement in the information systems supporting the market, forming part of a stable foundation for future growth and development, by building confidence in clients and other stakeholders.

Gatuita (2012) showed positive correlation between automated trading system and efficiency of operations, automated trading system does reduced transaction cost of operation in share trading and level of disclosure and transparency among the members of Nairobi Security Exchange had increased. The study revealed that automated trading system had increased the clientele base among the members of Nairobi security exchange

Some of trading platforms that are being used in the Automatic Trading System (ATS) is I Trader from SBG securities. Ouma (2010) describe this as a secure and encrypted platform purposely configured to protect investments. Clients here are provided with real time access to manage their share trading accounts from the convenience of their homes and offices, enabling them to make timely investment decisions and executions. Murage (2014) says about NIC NOW Mobile Banking app. from NIC bank is designed for use on all mobile devices, the application allows

clients to view their account status, access stock prices and receive market updates and tips instantly. NSE Android application which provides users with market statistics for listed securities; corporate actions that affect their securities holdings, and introduced a section called My NSE where users can see the market performance in real-time, as well as connect to their CDSC portfolio to see how the shares are performing in real-time.

### **1.1.1 Online and Mobile Share Trading**

It's an act of placing buy/sell orders for financial securities and/or currencies with the use of a brokerage's internet-based proprietary trading platforms. Bogan (2008) observed that since online trading trend emerged in the 1990s, many major U.S. financial service firms have developed a sizeable online customer base while other companies have focused on providing online stock information and financial analysis tools. Numerous online companies now provide financial and investing data on stock prices, stock trends, and corporate earnings. At Charles Schwab, the share of daily trades that are trade online increased from no online trades prior to 1992 to less than 25% in 1995, to over 80% in 2002.

Barber and Odean (2002) analyzed 1,607 investors who switched to phone based and online trading during the 1990s. Those who switched to online trading perform well prior to going online, beating the market by more than 2% annually. After going online, they trade more actively, more speculatively, and less profitably than before lagging the market by more than 3% annually.

Battestini, Rosso, Flanagan and Miettinen (2007) said mobile phones represent an attractive platform to develop and experiment new concepts and applications that can be gradually introduced into users' everyday lives. They found these devices are pervasive; they are with us most of the time, during the day and night and are always on. The possibility to create applications that exploit these characteristics on top of the devices software platform opens the way for next-generation mobile applications.

### **1.1.2 Active Momentum Trading**

Momentum is the rate of acceleration of a security's price or volume. The idea of momentum in securities is that their price is more likely to keep moving in the same direction than to change directions. Radge (2013) observed once an active momentum trader sees acceleration in a stock's price, earnings or revenues, the trader will often take a long or short position in the stock in the hope that its momentum will continue in either an upward or downward direction. This strategy relies on short-term movements in a stock's price rather than fundamental value. Active momentum trading by definition, rather than predicting or forecasting in advance, they invest by moderating the exposure as markets naturally oscillate up and down. Unlike 'Buy & Hold' strategy where an investor or fund manager purchases a stock based on value, then sticks the paperwork in the bottom drawer and forgets about it. Their goal is for the stock price to increase overtime and for the investor to receive regular dividends.



Radge (2013) describe active momentum trading like a hitch-hiker catching a ride. A hitch-hiker solicits a ride by standing at the edge of the road; thumb out while facing the oncoming traffic. When looking to capture a ride, hitch-hikers don't know which car will stop or how far a ride will take them should a driver offer a lift. A hitch-hiker simply goes with the flow but will only join a ride that is heading in the right direction. Likewise a momentum investor will tend to stand aligned with oncoming price action ready to buy as prices are rising and ready to exit when prices start falling. A momentum investor has no idea which stock will offer the next ride or how far the ride will take them. A momentum investor, like a hitch-hiker, simply goes with the flow of the market, fully invested as the market rises in a sustained up-trend and reverting to cash in a sustained bear trend.

### **1.1.3 Effect of Online and mobile trading to active momentum trading**

Moskowitz (2014) observed by automating as much of the process as possible some costs are brought down. Electronic systems make it easier to allow different companies to trade with one another, regardless of the distance. This has resulted to greater liquidity which increases the efficiency of the markets. Online trading has removed barriers within the industry and had a globalization-style competition effect. It means that the markets are less opaque, speed, convenience, and immediate access to financial information. Investors can from online trading derive access to instantaneous information. Availability of this financial information leads investors to make better-informed choices.

Konukoglu (2010) determined some of the costs include information-processing costs, information illusion, frequent trading behavior, and the lack of personal advice. Information-processing costs are the costs that online investors sustain before they actually make a transaction and it is defined by the time and energy that the investor expands trying to reach an investment decision .Illusion cost results when investors think that because they have access to so much information via the Internet that they have an advantage over the entire market and this can lead them to make bad investment decisions frequent trading is another cost associated with online investing. Lack of personal advice as the web will never be able to substitute for the judgment and expertise of financial planners, nor will it be able to protect investors from all of the scams that are abundant on the Internet

The cost of active momentum trading include among others jumping into a position too soon, before a momentum move is confirmed, closing the position too late, after saturation has been reached. Failing to keep an eye on the screen hence missing out on changing trends, reversals or signs of news that take the market by surprise.

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

The Nairobi Security Exchange was constituted as a voluntary association of stockbrokers and registered in 1954 as a society under the Societies Act. 8. There are 63 companies listed on the various tiers of its official list it also trade treasury bonds. Its role is to monitoring and enforcing continuing listing obligations, which are geared to ensuring comprehensive and timely disclosure, particularly of material

information pertaining to the performance of listed companies. This is geared to enhancing information symmetry and stemming market manipulation. The Exchange is automating its trading and settlement systems, which was manual, to ease trading, shorten settlement cycles and significantly reduce systemic and operational risk.

Lishenga (2011) observed that Nairobi Security Exchange experience significant degree of price momentum. Wainaina (2002) determined the presence of momentum at the NSE and a possibility of generating abnormal returns using the 52 week high method. It is possible to beat the NSE market by investing in stocks whose prices are furthest from its 52-week high in the short-term and divesting from those whose prices are at or closest to their 52-week highs also in the short-term.

## **1.2. Research Problem**

Organization for Economic Co-operation and Development (OECD) (May 2012) highlight the main challenge of internet in the developing country as cost. A lot of people would prefer to use the platform every time but it's costly for them. Not many people would afford to have internet always to do extensive research. This has limited even investors who are able and willing to transact online. Ignorant is another challenge investors have incurred. Majority are not aware of how they can use the system that has been provided by different service provider.

This concept of online and mobile trading is not popular in Kenya as seen from few studies that have done in this section. In as much as the concept of active momentum trading has been proved to be present in Nairobi security exchange Lishenga (2011). There has been recommendation for more research to exploit this area. This concept may not have been researched extensively because it's not long since Kenyan market embraced the online system and it's still being developed.

Internet in the last 10 years has provided an important change in the method by which investors participate in the stock market. The internet has mitigated three of the proposed causes for low stock market participation: transaction costs, information costs, and limited access. Numerous online companies now provide financial and investing data on stock prices, stock trends, and corporate earnings. Consumers now heavily utilize online trading according to Bogan (2008). We had major issues with traditional method of paper system. This problem include among others insider trading, slow transaction limited access to the internet and also unavailability of information.

There is relatively little literature related to the impact of the Internet on stock market participation according to Bogan (2008). This also is evidenced in our own market as from the research and other documentation available there is not much that have been done. That is why this paper would help in adding to literature in this area of internet trading in Nairobi Securities Exchange.

Internet is helping us fill gaps that had traditionally been experienced by investor in Nairobi Security Exchange. With more people accessing internet now, it's expected that the number of active momentum trader would not only increased but also be affected by this medium in a way making decision and execute them. This study seeks to contribute by looking at this gaps and how to address them.

Did introduction of online and mobile trading have any effects on active momentum trading practices in Nairobi Securities Exchange?

### **1.3. Objectives of the Study**

#### **1.3. 1 General Objective**

The general objective of the study is to determine the influence of online and mobile trading practices to active momentum trading.

#### **1.3. 2 Specific Objective**

The specific objectives of the study are:

- i. The effects of online trading to an active momentum trading.
- ii. The effects of mobile trading to an active momentum trading.

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

This study will help improve and understanding on how active momentum trading do their trade. It will explore on different ways when used with online and mobile trading will improve active momentum trading efficiency and effectiveness. As Bogan (2008) examined fundamental change in participation in trading and linking to

change in the reduction of frictions of the advent of the internet. Using panel data on household participation rates over a decade, he showed that, computer/Internet using households raised participation in the stock market substantially more than non-computer using households.

We have been having problem in Kenya with cyber security and how it has been handled. We have not invested much time and resources to provide policies that are able to protect investor from this threat. As a Nation we need to come up with good strategies to educate investor using the system on how they can secure themselves and avoid losing money through online fraud. This study will help to know how they are affected by online and mobile and can contribute to the developing of relevant policies. Having in mind this is a new area in developing nations the information from this study would be of essence.

Finally, researchers and scholars can use this study to expand the academic knowledge on how online and mobile trading influence active momentum traders and help expand knowledge in other possible areas of study. Future researchers, given the limited sources of literature about online and mobile trading influence active momentum traders in Nairobi security exchange can use this research as source of reference.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter provides theoretical and empirical information from literature on topics related to the research problem. It examines what various scholars and authors have studied/written about the influence of online and mobile trading practices on the active momentum traders from international and local perspectives. It also helps to know what future studies will need to explore so as to improve knowledge.

#### **2.2 Theoretical Literature Review**

In this section we will look at the relevant theories. It will presents the theories that provides the foundation for the report and will give the reader what he/she needs to know in order to interpret and understand the results and how I arrived at them. It will be an area where I will justify choices by explaining how reports connect to or are influenced by the related theoretical framework it will give theoretical background of the choices made during the course of the work.

##### **2.2.1 The Unified Theory of Acceptance and use of Technology**

UTAUT is a technology acceptance model formulated by Venkatesh (2003) and others in "User acceptance of information technology: Toward a unified view". The UTAUT aims to explain user intentions to use an information system and subsequent usage behavior. The theory holds that four key constructs being performance expectancy, effort expectancy, social influence, and facilitating conditions; being the

first three direct determinants of usage intention and behavior, and the fourth a direct determinant of use behavior. Gender, age, experience, and voluntariness of use are posited to moderate the impact of the four key constructs on usage intention and behavior. The theory was developed through a review and consolidation of the constructs of eight models that earlier research had employed to explain information systems usage behavior. Subsequent validation by Venkatesh et al. of UTAUT in a longitudinal study found it to account for an impressive 70% of the variance in BI and about 50% in actual use.

### **2.2.2 Elliott Theory**

Mihir and Anand (2009) explain in the late 1920's R. Elliott developed the theory of waves assuming some kind of regularity in the stock markets, contrary to popular assumptions about the random nature of price movement. He found that price movements have repetitive cycles, which are associated with the emotions of investors as a result of external influences of news or mass psychology prevailing at the time. Elliott said that the ascending and descending oscillations of mass psychology always manifest themselves in the same repetitive patterns, which he called "waves". The wave principle posits that collective investor psychology or crowd psychology moves from optimism to pessimism and back again in a natural sequence. These swings create patterns, as evidenced in the price movements of a market at every degree of trend.



Elliott's model says that market prices alternate between five waves and three waves at all degrees of trend, as the illustration shows. Motive waves always move with the trend, while corrective waves move against it.

In the financial markets we know that "every action creates an equal and opposite reaction" as a price movement up or down must be followed by a contrary movement. Price action is divided into trends and corrections or sideways movements. Trends show the main direction of prices while corrections move against the trend.

### **2.2.3 Dow Theory**

Trends are confirmed by volume Dow believed that volume confirmed price trends. When prices move on low volume, there could be many different explanations. An overly aggressive seller could be present for example Xiaoguang. W (2010) say when price movements are accompanied by high volume, Dow believed this represented the "true" market view. If many participants are active in a particular security, and the price moves significantly in one direction, Dow maintained that this was the direction in which the market anticipated continued movement. To him, it was a signal that a trend is developing.

Sona (2013) observed that trends exist until definitive signals prove that they have ended. Dow believed that trends existed despite "market noise". Markets might temporarily move in the direction opposite to the trend, but they will soon resume the

prior move. The trend should be given the benefit of the doubt during these reversals. Determining whether a reversal is the start of a new trend or a temporary movement in the current trend is not easy. Dow Theorists often disagree in this determination. Technical analysis tools attempt to clarify this but they can be interpreted differently by different investors.

#### **2.2.4 Rational Expectations Theory**

Muth (2008) explain the theory states that the players in an economy will act in a way that conforms to what can logically be expected in the future. That is, a person will invest, spend, etc. according to what he or she rationally believes will happen in the future. By doing so, that person creates a self-fulfilling prophecy that helps bring about the future event. Although this theory has become quite important to economics, its utility is doubtful. For example, an investor thinks a stock is going to go up, and by buying it, this act actually causes the stock to go up. This same transaction can be framed outside of rational expectations theory. An investor notices that a stock is undervalued, buys it, and watches as other investors notice the same thing, thus pushing the price up to its proper market value. This highlights the main problem with rational expectations theory: it can be changed to explain everything, but it tells us nothing.

#### **2.3 Determinant of Active Momentum Trading**

Momentum traders focus on stocks that are moving significantly in one direction on high volume. They hold their positions for a few minutes, a couple of hours or even

the entire length of the trading day, depending on how quickly the stock moves and when it changes direction. They trade depending on different characteristics.

### **2.3.1 Personal characteristics of fund managers.**

Increasing in age and increasing in professional experience in asset management are competence in competitive markets. Also better education, fund managers holding superior positions and having personal responsibility for larger assets under management do show ability. The size of the firm where the fund managers are employed, as large firms have more capacity for research and thus have less need to rely on simple trading rules such as a momentum strategy (Gehrig and Menkhoff, 2006).

### **2.3.2 Overconfidence.**

The three indicators of overconfidence are unrealistically positive self-evaluation, illusion of control and miscalibration. Self-evaluation is grasped by self-assessment of one's own achievements in relation to other comparable fund managers, the illusion of control is proxy by the statement that news does not surprise and miscalibration is measured by the expected result.

### **2.3.3 Psychological influences.**

The relation between psychological influences and the use of technical analysis was established by Taylor and Allen (1992) and has been confirmed in several studies (Menkhoff and Taylor, 2007). More specific but also prominent issues are the

importance of herding and a confirmation bias in financial markets. Both characteristics seem to be supportive of momentum trading because these forms of behavior may be responsible for the formation or continuation of non-fundamental trends in asset prices.

#### **2.3.4 The risk aversion view on momentum traders.**

A low risk aversion of momentum traders indicate that they are willing and able to bear high risks which may be inherent in this strategy. The conventional interpretation of momentum excess returns is that they compensate for a kind of risk. The risk is real and investors would have to bear it, so it seems interesting to see whether momentum traders may be less risk averse than others (Menkhoff and Schmidt, 2005). Overall, the risk aversion view contributes to our understanding of the momentum puzzle as it cautiously indicates that momentum traders may be willing to bear higher risks, here seen as investment risks and with respect to loss aversion.

#### **2.4 Empirical Review**

Battestini, Rosso, Flanagan and Miettinen (2007) explain that mobile phones represent an attractive platform to develop and experiment new concepts and applications that can be gradually introduced into users' everyday lives. They found these devices are pervasive; they are with us most of the time, during the day and night and are always on. The possibility to create applications that exploit these

characteristics on top of the devices software platform opens the way for next-generation mobile applications.

Bogan (2008) observed that since online trading trend emerged in the 1990s, many major U.S. financial service firms have developed a sizeable online customer base while other companies have focused on providing online stock information and financial analysis tools. DLJ Direct (now CSFB Direct) pioneered online investing in 1988 and 10 years later, there were more than 50 other firms offering online investing to millions of customers. Numerous online companies now provide financial and investing data on stock prices, stock trends, and corporate earnings. Consumers heavily utilize online trading, as can be seen at the Charles Schwab Corporation, a leading brokerage firm with over eight million active client accounts in 2002. At Charles Schwab, the share of daily trades that are trade online increased from no online trades prior to 1992 to less than 25% in 1995, to over 80% in 2002.

Srivastava (2011) determined that, internet has made financial products and services available to more customers and eliminated geographical barriers. Earlier investors were solely dependent on their brokers but nowadays they are participating more in buying and selling of shares with the help of internet. E-trading has saved time, energy and money as it helps to access the market from anywhere at any time.

Barber and Odean (2002) found that young men who were active traders with high incomes and a preference for investing in small growth stocks with high market risk

were more likely to switch to online trading. They also found that those who switch to online trading experienced unusually strong performance prior to going online. However, after going online, these participants traded more actively, more speculatively, and less profitably than before.

Haliassos and Bertaut (1995) found empirical support for the hypothesis that actual or perceived costly information about the stock market can account for agents who hold portfolios of riskless assets but not stocks. Bertaut (1998) also proffers the idea that most households persistently invest in riskless assets but not stocks because they perceive information required for market participation to be costly relative to expected benefits. This assertion is supported by Bertaut's finding that factors such as age, education, and inheritance of assets are significant in explaining the probability of holding stocks and have similar effects on the probability of ownership over the year studied. Peress (2005) developed a theoretical model describing how changes in certain market frictions could affect stock market participation levels.

Aderonke and Charles (2010) found that “Banks’ customers who are active users of e-Banking system use it because it is convenient, easy to use, time saving and appropriate for their transaction needs. Also the network security and the security of the system in terms of privacy are the major concerns of the users and constitute hindrance to intending users. ”Sadeghi and Hanzaee (2010) perform a model with the following seven factors: convenience, accessibility, accuracy, security, usefulness,

bank image and web site design. And considered them as the main determinants of customer's quality perception in e-banking services

The effect of online banking on cost efficiency in commercial banks in Kenya by Nzioka (2012) found that the banking industry locally and internationally has continued to embrace adoption and implementation of online banking products and services given the benefits that arise, such as lowering operations cost quick and convenient delivery of services to customers and value addition to the banks services this in turn had increase the number of customers and transactions hence higher profits.

Halryalat, Dwivedi, Kuljis, and Paul (2006) analyzed the effect of online and traditional trading on effective market performance on the NASDAQ. The purpose of this paper was to present a critical analysis on the competition between online (ECN) and traditional (Market Maker (MM)) trading on the NASDAQ stock exchange. Online stock trading mechanisms at the exchanges are often a hybrid of dealer and auction markets. Different aspects of trading execution, which is the most commonly used market center at present, were analyzed. This lead to a discussion on: (1) the path that executes order is organized and (2) its impact on the effective market performance, trading cost and investor behavior.

Walia and Kumar (2007) wrote in their research paper, which was published in Indian journal of marketing, that there is no denying the fact that internet trading offered

investors convenience of trading along with reduced cost. But Indian investors had not yet fully realized the importance of using technology for stock trading. The major findings of the study was the Indian investors are more conservative, they do not change brokers for trading, whereas net traders are more comfortable with online trading for its transparency and complete control of the terminal.

Choi, Laibson, and Metrick (2002) also analyzed the impact of a Web-based trading channel on the trading activity of two corporate 401K plans. After 18 months of access, the inferred online effect was very large. Trading frequency doubled and portfolio turnover rose by over 50%. Choi et al. (2002) also found that young, male, wealthy participants were more likely to try the Web channel. Their results are also consistent with the recent increase in stock market trading volume. Since Internet trading began, there had been a general upward trend in stock market volume and the total value of shares traded on the stock market. From NYSE data, it is quite apparent that the slope of the upward movement in the stock market was much larger in the 1990s than in the 1980s. Both a Chow and a Wald test are consistent with the hypothesis that there was a structural change in the stock market between the periods 1980-1993 and 1994-2001

Lishenga, (2012) investigated the existence of the price momentum effect, the profitability of momentum trading strategies, and the possibility of seasonal and reversal patterns in the profitability they found that there was absence of a calendar



regularity to the profits, and that there was mild reversal of profitability in the medium term.

Rasugu, (2010) examined the relationship between Institutional trading and price momentum of stocks quoted at the Nairobi Securities exchange. The study established that there is no direct relationship between the level institutional ownership and price momentum, both in positive returns and in negative price momentum, and in this case there were mixed trades of both parties in either winner and loser portfolios.

Omuronji, (2004) determined the presence of momentum at the Nairobi Securities Exchange and the possibility of generating abnormal profits based on this anomaly. The results of the study showed that stocks listed on the Nairobi Securities Exchange experience price continuation. Stocks experiencing a decline in their prices continue depreciating in price for a period not more than twelve months. On the other hand stocks experiencing price rise continue appreciating for a period not more than twelve months. The implication for the study was that it's possible to beat the Nairobi Securities Exchange market by investing in stocks whose prices have shown an appreciation in the short term and divesting from stocks whose prices have depreciated in the short term.

Wainaina, (2007) researched on momentum investing in NSE. From the results it was inferred that it is possible to beat the NSE market by investing in stocks whose prices

are furthest from the its 52- week high in the short-term and divesting from those whose prices are at or closest to their 52-week highs also in the short-term.

## **2.6 Summary Literature Review**

The literature review has clearly introduced the concept of online and mobile trading as well as that of momentum trading. Its importance factors that determine momentum trading were highlighted in the review. Past studies on how online and mobile trading have influenced active momentum traders have also been reviewed.

From several researchers highlighted they seem to concur that there is an influence of online and mobile trading on active momentum traders in other security selling market. These conclusions have been confirmed in the empirical evidence obtained from the researches.

It is also clear from the empirical review and studies done that little if any has been done by the local study of the influence of online and mobile trading for active momentum trader in NSE. This is maybe because the internet has not grown and adopted in developing country as a good medium of trade. This can be seen from how a different company in countries like Kenya has been advertising and mobilization for their customer to transact online.

Internet usage has been growing in Kenya and this can only imply that the active momentum investors have been utilizing the platform. This can be seen in how

different brokerage firm has been quick to adopt online trading platform. The main challenge is this has not been well researched on and documented.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This section presents an overview of the methods used in the study. Areas covered include the research design, population, sample and sampling techniques, data collection and analysis.

#### **3.2 Research Design**

Kumar (2005) defined a research design as a procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately and economically. The central role of research design is to minimize the chance of drawing incorrect causal inferences from data. This study adopted a descriptive research design. According to Mugenda and Mugenda (2003) descriptive research is a process of collecting data in order to test hypotheses or to answer questions concerning the current status of the subjects in the study. Descriptive research is also marked by a clear statement of the problem, specific hypothesis and detailed information needs (Malhotra, 1999). A descriptive study determines and reports the way things are. The choice of the descriptive study design was based on the fact that the research was interested in the state of affairs already existing in the field and no variable was be manipulated

#### **3.3 Population and Sample**

A population refers to an entire group of individuals, events or objects having common observable characteristics (Mugenda and Mugenda2003). Target population

is defined as a computed set of individuals, cases or objects with some common observable characteristics of a particular nature distinct from other population. A sample is a small group obtained from accessible population, (Mugenda & Mugenda, 2003). Sampling is the procedure a researcher uses to gather people, places or things to study, (Kombo & Tromp, 2006). I used for these research, companies on 20 NSE share index. I classified them into upper decile and lower decile depending on which company had touched their last six month high or low. Then I analysed the company share performance for six month. These companies gave the information needed to determine how online and mobile trading had affected active momentum trading. Earlier Mwangi (2011) had observed that six month formation strategy outperforms all other strategies irrespective of the holding period in NSE.

### **3.4 Data Collection**

Secondary data was collected from the picked investment agents and websites of the Nairobi security exchange. The secondary data did provide a reliable source of the information needed to investigate on the efficient ways for problem solving in this situations (Uma 2003). Secondary data is the data that have been already collected by and readily available from other sources. Such data are cheaper and more quickly obtainable than the primary data and also may be available when primary data cannot be obtained at all. It is economical, it saves efforts and expenses and it helps to improve the understanding of the problem. It provides a basis for comparison for the data that is collected by the researcher. Secondary data is something that seldom fits

in the framework of the research factors, accuracy of secondary data is not known and data may be outdated.

### **3.5 Data Analysis**

Data analysis is the process of bringing order, structure and meaning to the mass of information collected. It involves examining what has been collected and making deductions and inferences (Kombo and Tromp, 2006).

#### **3.5.1 Data Analytical Model**

I used regression analysis to measure how online and mobile trading have influenced active momentum trading. Regression analysis is a process of estimating the relationships among variables. It helped to understand how the typical value of the dependent variable changed when any one of the independent variables was varied, while the other independent variables are held fixed. I had independent variable being online and mobile trading practices while we have dependent variable being active momentum trading variables (market capitalization, NSE 20 share index and price change (profit)).

The population regression model is:  $y = \beta_1 + \beta_2 x_1 + \beta_3 x_2 + \beta_4 x_3 + u$

Y= Online and Mobile share trading

$\beta_1$  = Constant

$x_1$  = Market Capitalization of companies under study

$x_2$  = NSE 20 Share index

$x_3$  = Profit made in six month

u =error

### 3.6 Test of Significance

Statistical inference allowed me to assess evidence in favor or some claim about the population from which the sample will be drawn. A null hypothesis  $H_0$  which usually refers to a default position that there is no relationship between two measured phenomena, while alternative hypothesis,  $H_a$ , is the hypothesis that sample observations are influenced by some non-random cause. Null hypothesis was that online and mobile trading practices had no significant influence to active momentum trader in Nairobi security exchange. The alternative hypothesis was online and mobile trading did influence active momentum trading. The significance level denoted as alpha or  $\alpha$  was 5 % also; it was the probability of rejecting the null hypothesis when it is true.

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND DISCUSSION**

#### **4.1 Introduction**

This chapter provides an analysis of data collected from the market on how online and mobile phone have affected active momentum trader in NSE. The data was obtained through secondary sources focusing on how the market did trade in the past. The results are presented in tables and charts to highlight the major findings. Averages and regression analysis was used to analyze the data collected. The research was conducted on a population of 20 listed companies in NSE which make up the NSE 20 Share Index. These companies are a good representation of the whole market and it represents almost all the sector of listed companies in NSE. Out of 20 listed companies 15 of them were picked as their prices showed an upward or a downward trend forming our portfolio.

#### **4.2 Internet and Mobile Phone in Kenya.**

Internet and mobile phone usage has increased in the recent years and consequently we expect it would affect traders in NSE. These may have influenced the way traders have been doing their transaction.

##### **4.2.1 Internet**

Internet has been growing tremendously in Kenya for the last couple of years. As data from ITU Kenya indicate as population has been growing the usage of internet has been also growing.



<b>YEAR</b>	<b>Users</b>	<b>Population</b>	<b>Pen.</b>	<b>Source</b>
2000	200,000	30,339,770	0.7 %	ITU
2008	3,000,000	37,953,838	7.9 %	<u>ITU</u>
2009	3,359,600	39,002,772	8.6 %	<u>ITU</u>
2010	3,995,500	41,070,934	9.7 %	<u>ITU</u>
2014	21,273,738	45,010,056	47.3 %	<u>ITU</u>

**Table 4.1: Internet Usage and Telecommunications Reports**

Report of Communication Commission of Kenya (CCK) (2013) indicates Kenya internet penetration increasing from 7.5 percent in 2006 to 28 percent in 2011. Much of this growth can has attributed to increases in mobile internet connections, improved internet bandwidth capacity, and intensified promotions on social media applications by mobile operators. Statistics from the Communication Commission of Kenya show that mobile data/Internet subscriptions dominate then Internet market contributing 99% of the total Internet subscriptions with 16.4 million Internet users countrywide as at March 2013. This represents 38.9% increment from the 11.8 million reported in March 2012. The statistics show that there are currently 9.6 million Internet subscriptions.

This is an indication that there is an increase in internet and mobile usage in Kenya. Has it affected the way investors do business? We would determine as we analysis more. With increase in mobile and internet usage we expect that these would affect the active momentum traders because they are consumer and user of the services.

#### **4.2.2 Mobile Phone Ownership**

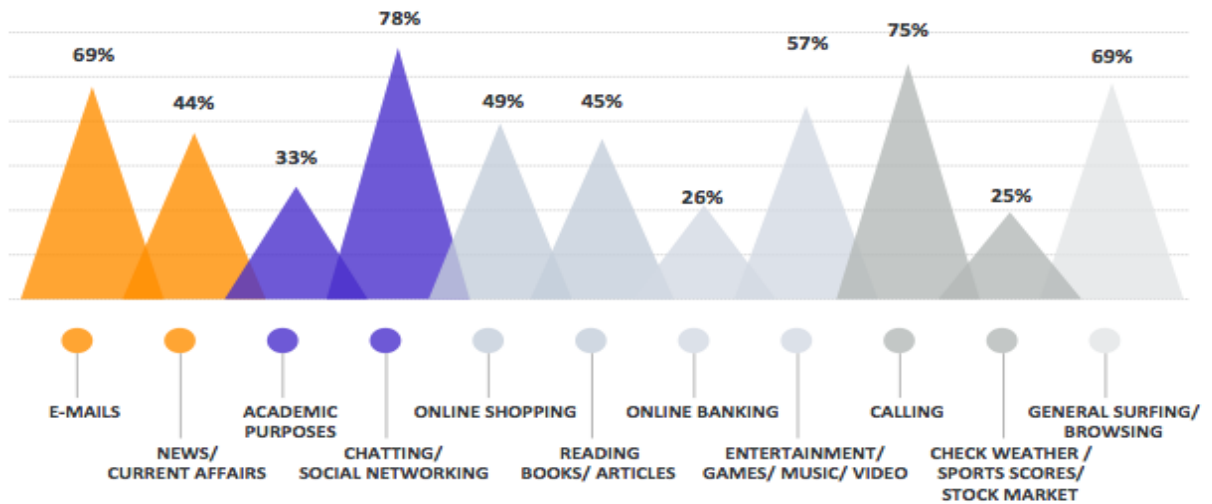
Registered investment Advisory (RIA) (2007 & 2011) Surveys shows there has been an increase in ownership of mobile phones in Kenya. While only 52% of the respondents in Kenya who were above 15 years had either a mobile phone in 2007/8, 86.7% had in 2011/2012, representing an increase of 34.7%, the highest increment. In relation to Internet usage, 15% of the Kenyan population above 15 years old was using the Internet according to the 2007/2008 survey while in 2011/2012 the usage had risen to 26.3%.

#### **4.2.3 Internet in Other Sector**

Ndung'u and Waema (2013) found internet banking adoption and use in Kenya was very low despite the high levels of internet access. Moreover, the results showed that the younger population are adopting and using internet banking more than the older generation. In addition, the younger generation had a higher exposure to internet use. It was evident that perceived usefulness, perceived ease of use, perceived self-efficacy, perceived compatibility, perceived relative advantage and perceived results demonstrability are the key factors that influence internet banking adoption and continued usage in Kenya.

The whitepaper report (2013) on internet penetration in Kenya shows most popular activity is chatting and social networking at 78%, higher than calling which was

named by 75% of users. E-mails and online browsing both accounted for 69%, followed by the data heavy activities falling under entertainment;



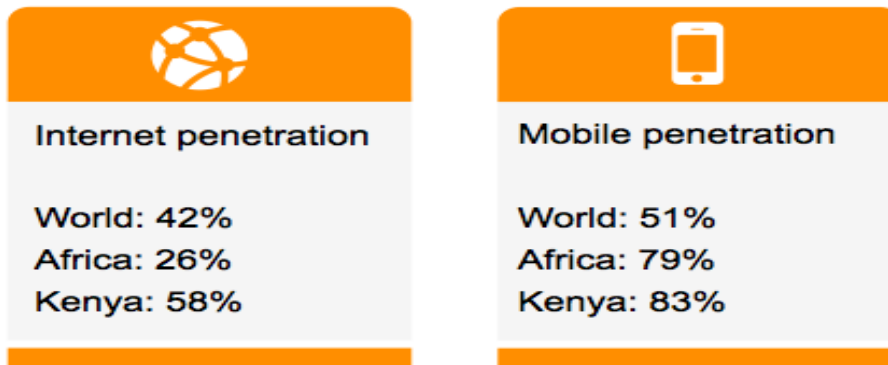
**Figure 4.1: Internet Usage in Different Sectors**

49% of users claimed to use their smart phone for online shopping, In a recent IPSOS survey, 1% of all internet users country-wide claimed to use phone to buy goods .

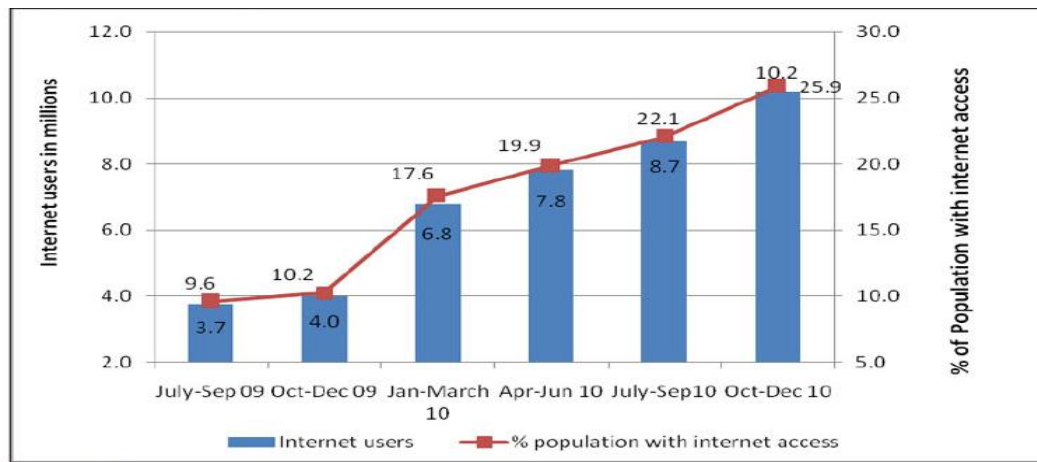
The least popular activities were online banking at 26% and checking weather, sports scores or the stock market at 25%. The latter however had the biggest variation among the genders: 11.3% more men claimed to use their smart phones for this than women.

Unsurprisingly, the 18-25 year bracket is much more likely to use their smart phones for academic purposes: 33% above average. Conversely, this age group was also 33%

less likely than average to use their smart phone for online banking. Another outlier was that 35-44 year olds were not keen on using their smart phones for entertainment purposes and did this with 26% less likelihood than the sample size taken as a whole.



**Figure 4.2: Whitepaper Report on Internet and Mobile Penetration in Kenya..**



Source: CCK, operators compliance return forms

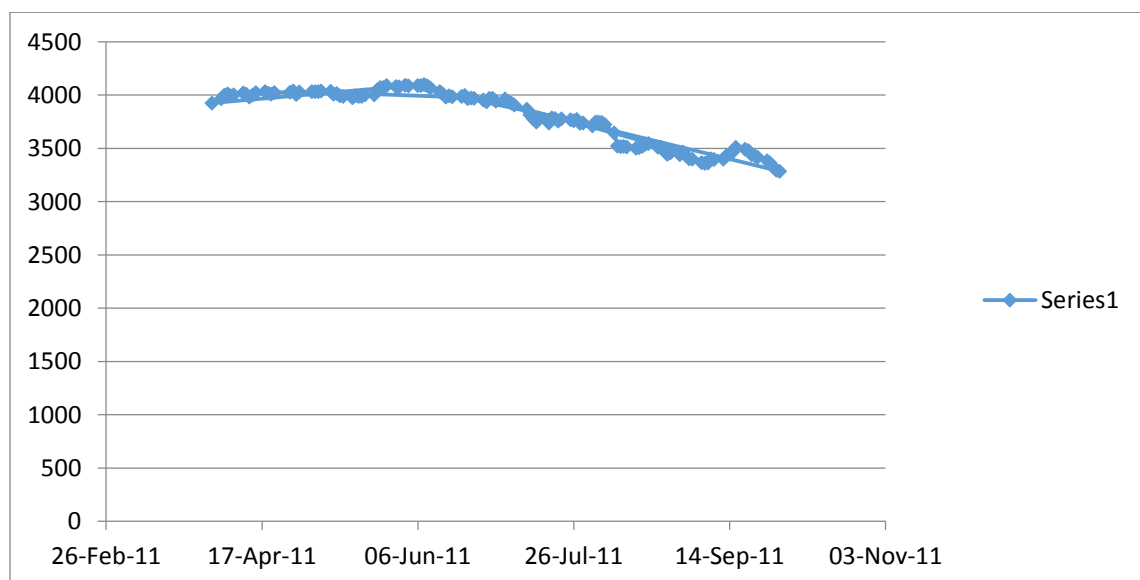
**Figure 4.3: Population Growth of Internet Access.**

From the above reports it's evident that the population who are using the online services has been growing. We saw 25% of the user access stock market report from

the internet. This report also indicates that growth has been felt even in other sectors like banking which is closely related to NSE. With a higher percentage using internet to access news and also for general surfing it may indicate that they may search market related news.

### 4.3. Momentum Trading

Investopedia describes momentum trading as a trading in which we look for acceleration in a stock's price, earnings, or revenues. The traders will then often take a long or short position in the stock with the hope that its momentum will continue in either an upward or downward direction. This strategy relies more on short-term movements in price rather than fundamental particulars of companies, and is not recommended for novices. The diagram below shows a general trend in NSE 20 share index of our portfolio for a period of six month. From the graph it's evident that the market was in declining momentum.



**Figure 4.4: Market Momentum for a Period of Six Month.**

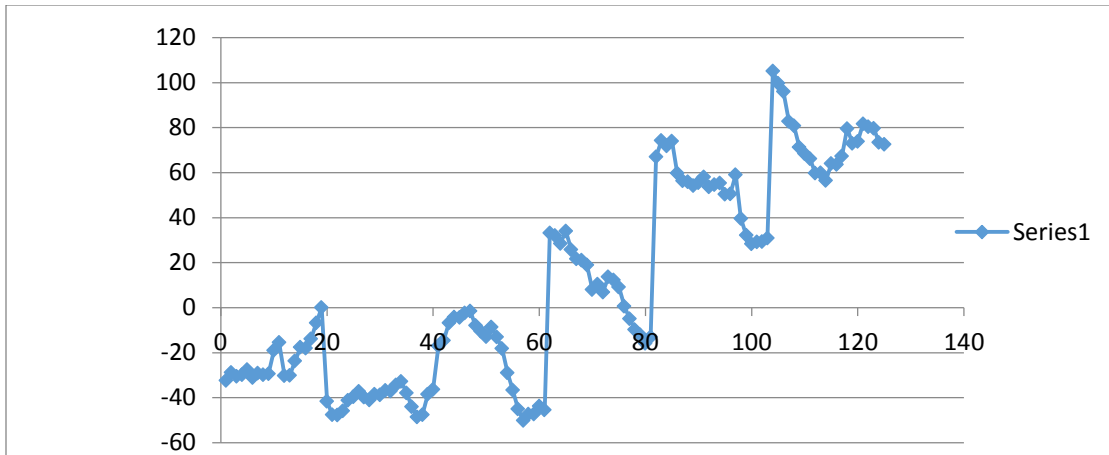
A more and detailed NSE 20 share index in the graph below indicates that the market was in downturn. This is a proof of momentum strategy which state that stocks that touches its lowest price may tend to continue falling in short run.



**Figure 4.5: Mystock NSE 20 Share index for a Period of Six Month.**

### 4.3.1 Momentum Strategy

As the market was in downturn and stocks were declining in price as seen in the NSE 20 share index curve, and if an investor would have applied the momentum strategy then they would have made the return as shown on the graph below.



**Figure 4.6: Return for Momentum Investor in a Period of Six Month.**

When we look at the individual stock the trend is similar. In the graph below Mumias Sugar Ltd touched the lowest price of six month of 6.5 on beginning of November and the trend continued till the lowest of 4.5. This is 30.7 % decline and as graph shows indeed it was a continuous fall.



**Figure 4.7: Mumias Sugar Ltd Momentum Price Movement for a Period of Six Month.**

On the other hand Nation Media Group touched its six month high of 120 and although initially it had behaved as though it would stabilize the price picked three month and the trend continued. This, according to momentum trader is a clear indication that the stock's price that hit six month high would continue rising in price but on short term.

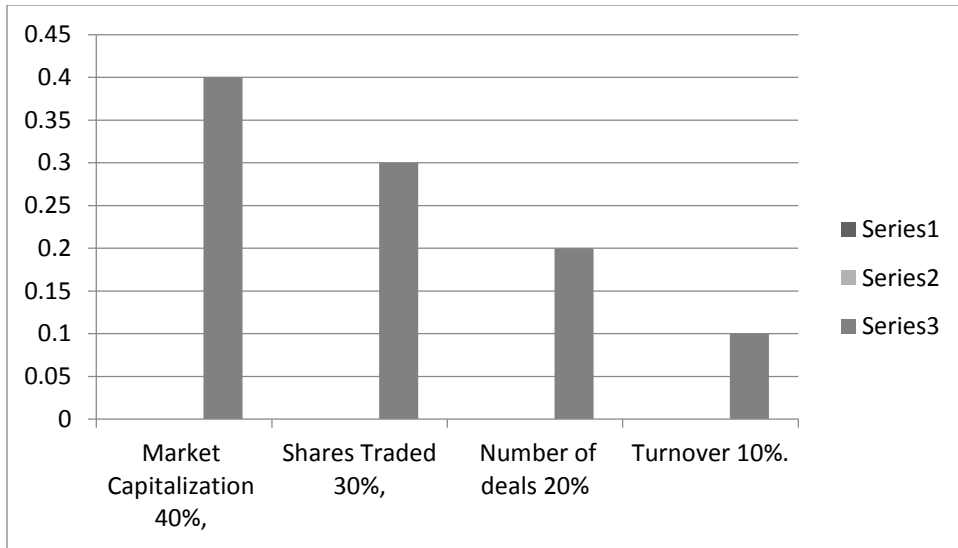


**Figure 4.8: Nation Media Group Price Movement for a Period of Six Month.**

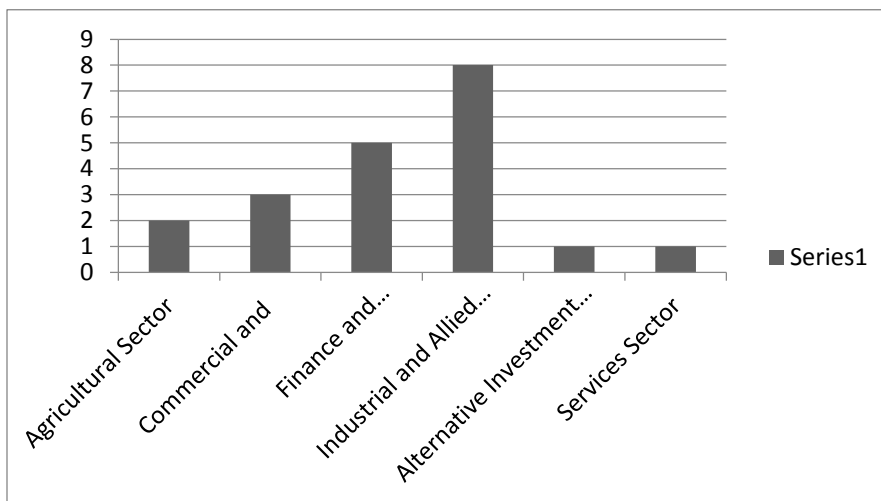
#### 4.4 NSE 20 Share Index

The Nairobi Securities Exchange Ltd 20 Share Index is a price weight index. The members are selected based on a weighted market performance for a 12 month period as follows: Market Capitalization 40%, Shares Traded 30%, Number of deals 20%, and Turnover 10%. Index is updated end of day only.



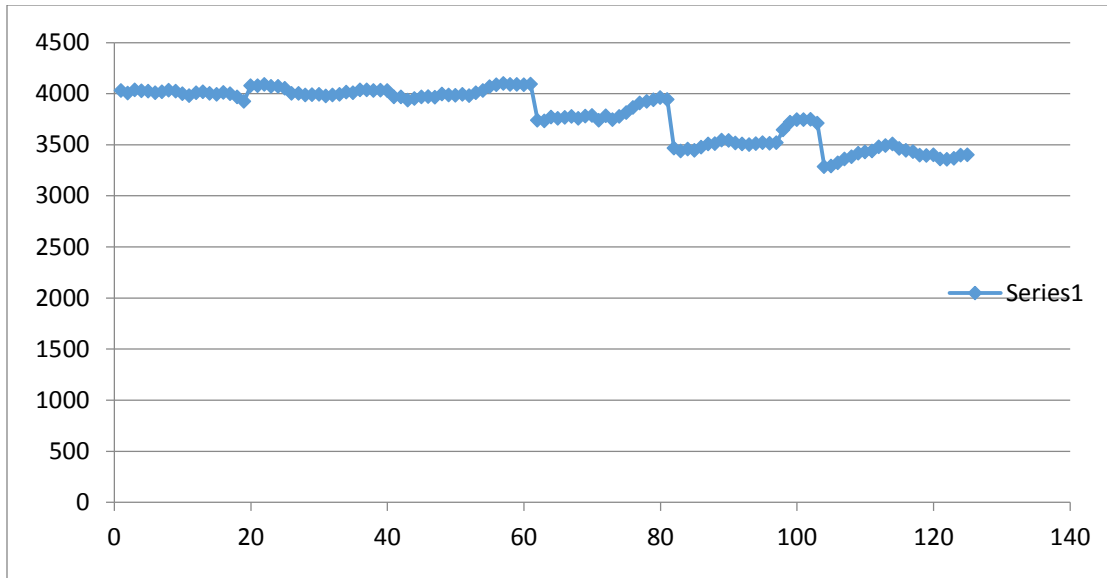


**Figure 4.9 : A NSE 20 Share Index composition**



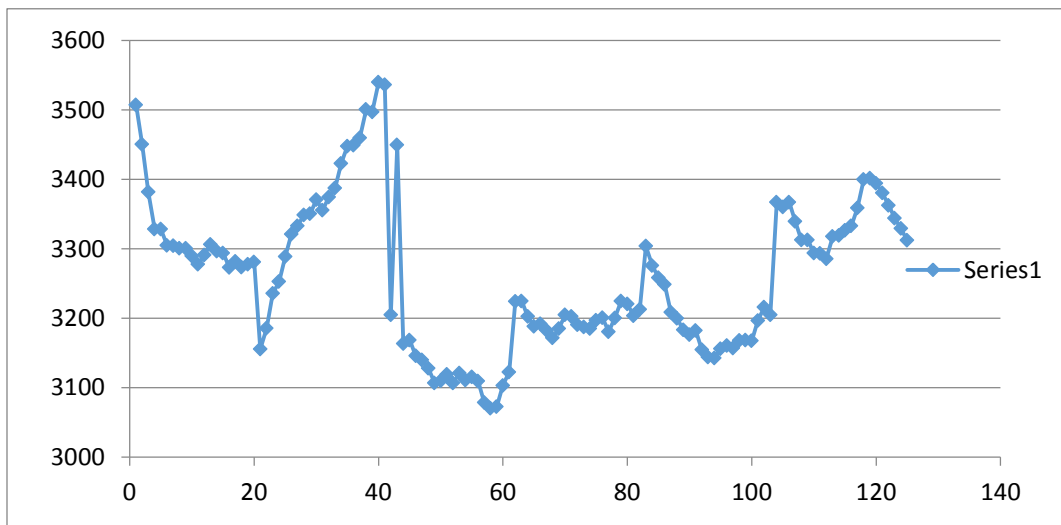
**Figure 4.10: NSE 20 Share Index Sectors Representation**

This index is composed of 2 companies from Agricultural Sector and 3 from Commercial 5 from Finance and Investment Sector 8 of industrial and allied Sector with the majority of 8 companies while service sector and Alternative Investment market segment has 1 each. This indicate that most of the listed company that are blue chip are from Industrial and allied sector.



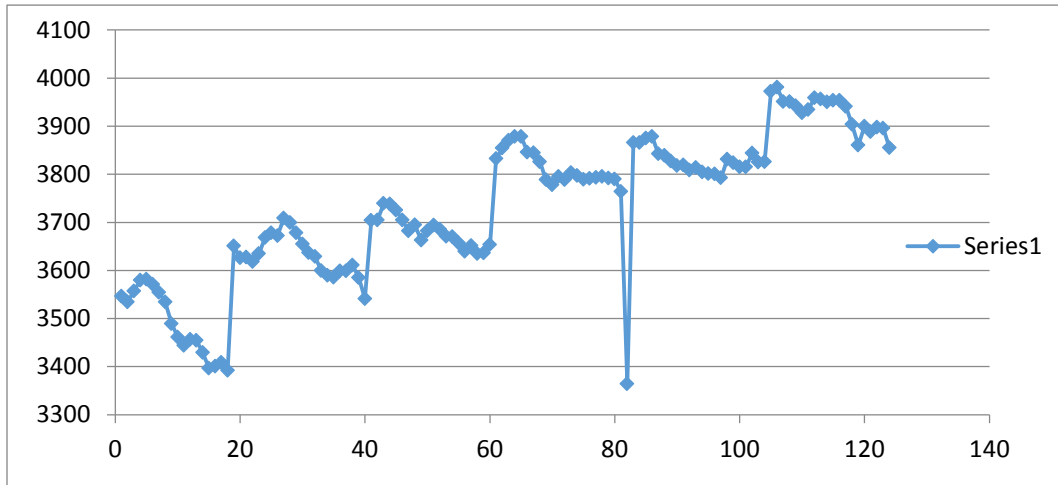
**Figure 4.11: NSE 20 Share Index Movement from April 2011 to September 2011**

From the above graph its evidence that the index was in a downward movement. This shows that it can be compared to other season or times to determine if it was affected by the online trading introduction.



**Figure 4.12: NSE 20 Share Index Movement from October 2011 to March 2012**

From the graph of period above the first one indicate a downward trend while the second one does not really show us the trend. When we compare with the next six month.

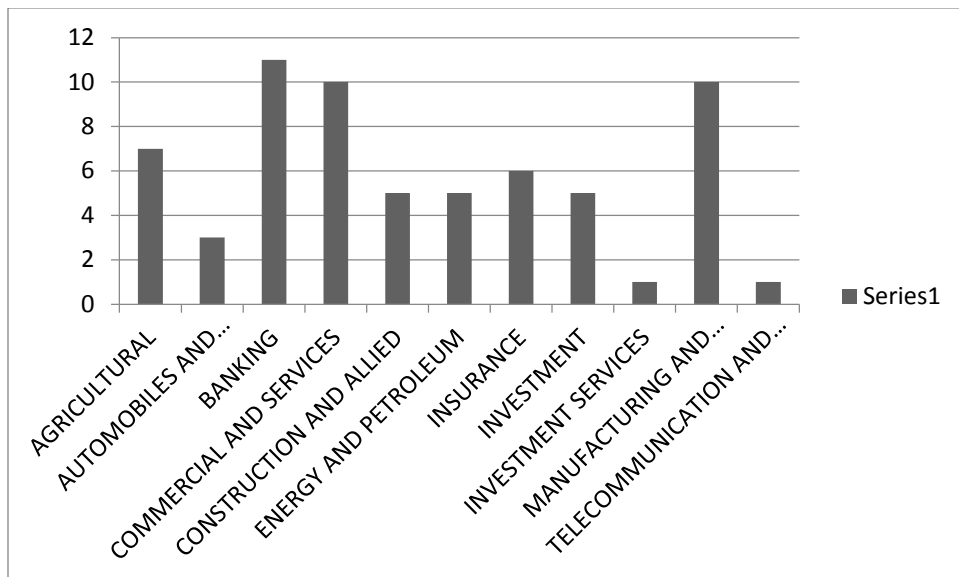


**Figure 4.13: NSE 20 Share Index Movement from April 2012 to October 2012**

This shows as increase in the trend. Hence this is an indication that in the previous months September 2011 to April 2012 when the online system like BBO was introduced it affected the investors. But in the following period April 2012 to October 2012 after they have embraced the system they were able to trade even more.

#### **4.4.1 The Nairobi Securities Exchange Ltd All Share Index (ASI)**

It is a market cap weighted index consisting of all the securities on the NSE. Prices are based on last trade information from NSE's Automated Trading System. It based on the value of 100 as of January 2008. NSE 20 share index represent 20 of the 58 stock that was listed on 2010.



**Figure 4.14: NSE Sectors Representation**

This shows that manufacturing and allied company have the majority company together with the banking sector and commercial services. While telecommunication has only one company listed. Today they have introduced a new sector known as Gems.

#### **4.4.2: Market Capitalization**

Investopedia refers market capitalization as the total dollar market value of all of a company's outstanding shares. Market capitalization is calculated by multiplying a company's shares outstanding by the current market price of one share. The investment community uses this figure to determine a company's size, as opposed to sales or total asset figures.

#### **4.4.2.1 Share Issued**

In NSE Hutchings Biemer Limited has lowest number of shares issued of 0.0005 % of total shares in the market of 360,000 shares while Safaricom have the highest number of shares issued of 51.99% of the total share in the market of 40,065,428,000 shares. In appendix (iii) it shows the list of share listed by 2011 and the total number of share issued.

#### **4.5. Portfolio**

Portfolio according to Investopedia is a grouping of financial assets such as stocks, bonds and cash equivalents, as well as their mutual, exchange-traded and closed-fund counterparts. Mostly they are held directly by investors and/or managed by financial professionals. Prudence suggests that investors should construct an investment portfolio in accordance with risk tolerance and investing objectives.

In our case it's represented by stock in NSE 20 share index which specifically happen to touch six month high or low. We short those stocks that touch six month low because we believe they will continue to decrease in price. We also long any stock that touches six month high because we believe it will continue increasing in price. The table below shows the stock average performance in the period October 2010 to March 2011. It's from this performance that I selected those that form the portfolio. I observed this against time and determined what would be effect of introducing online services six month before and six month after.

From appendix iv the following companies were selected into the portfolio: Mumias, Express, Sasini, CMC, Kenya Airways, Safaricom, Nation Media Group, Equity , Bamburi ,Kengen, Centum, EABL, EA Cables, KPLC And Athi River

The stocks that were selected are the one that in the period of October 2010 to April 2011 did touch either its six month high or six month low. This is in accordance with momentum trading practices. They are grouped together to form a portfolio.

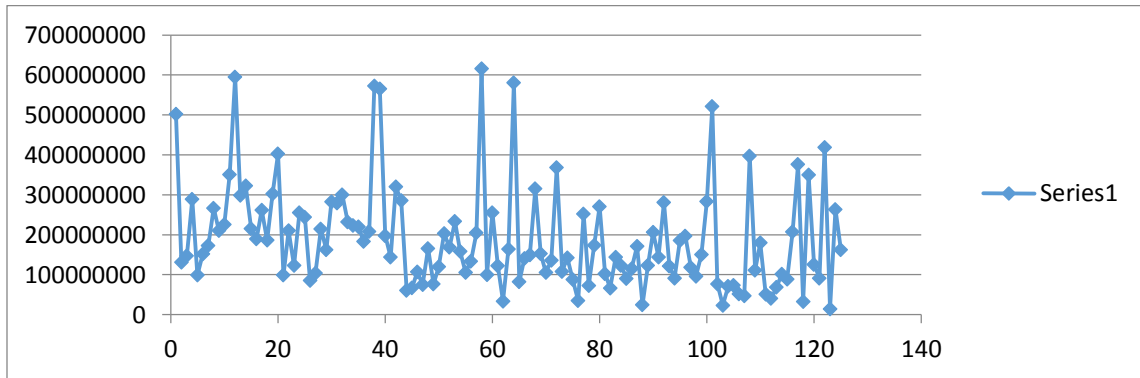
#### **4.6 Volatility**

This is the number of share traded. From the analysis we can get this from the volume of each share traded. April to September 2011 the value of share traded was 23,960,423,775.00, in period October to April 2012 the value of share traded was 15,205,749,175.00, While in April 2012 to October 2012 the value was 26,620,129,528.00. It is a rate at which the price of a security increases or decreases for a given set of returns. From the above NSE data its evidence that April 2011 to October 2011 it was high but drastically reduced September 2011 to March 2012. In the next six month April 2012 to September 2012 it increased tremendously.

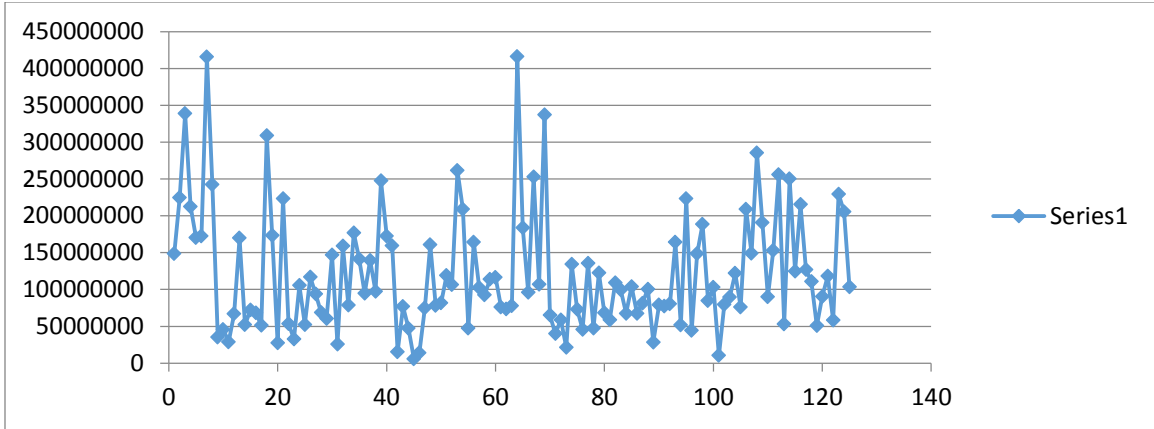
Volatility according to Investopedia is measured by calculating the standard deviation of the annualized returns over a given period of time. It shows the range to which the price of a security may increase or decrease. Volatility measures the risk of a security. It is used in option pricing formula to gauge the fluctuations in the returns of the

underlying assets. Volatility indicates the pricing behavior of the security and helps estimate the fluctuations that may happen in a short period of time. If the prices of a security fluctuate rapidly in a short time span, it is termed to have high volatility. If the prices of a security fluctuate slowly in a longer time span, it is termed to have low volatility.

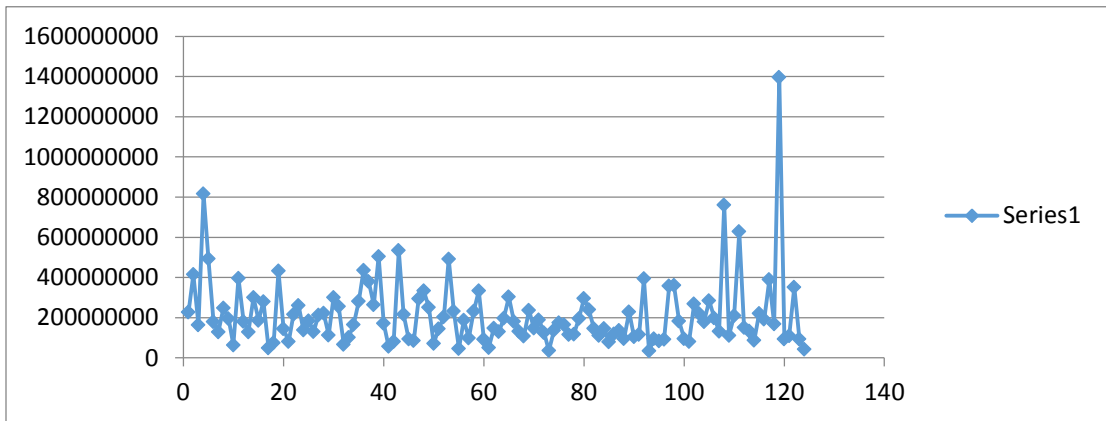
The economic times define it as a securities trading: Size and frequency of rapid changes in the price of a security. If the causes of volatility are peculiar to security, it is measured by alpha; if the causes are related to the securities market as a whole, it is measured by beta.



**Figure 4.15: Total Number of Share Traded April 2011 to September 2011**



**Figure 4.16: Total Number of Share Traded October 2011 to Mar 2012**



**Figure 4.17: Total Number of Share Traded period April 2012 to Sep 2012**

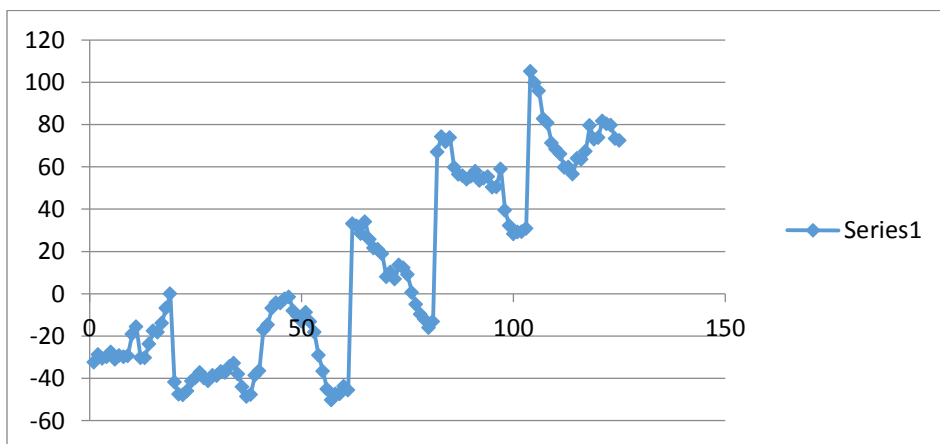
From the above three graph representation its evident that in the period April 2012 to September 2012 the market was more active and less active in the period October 2011 to March 2012



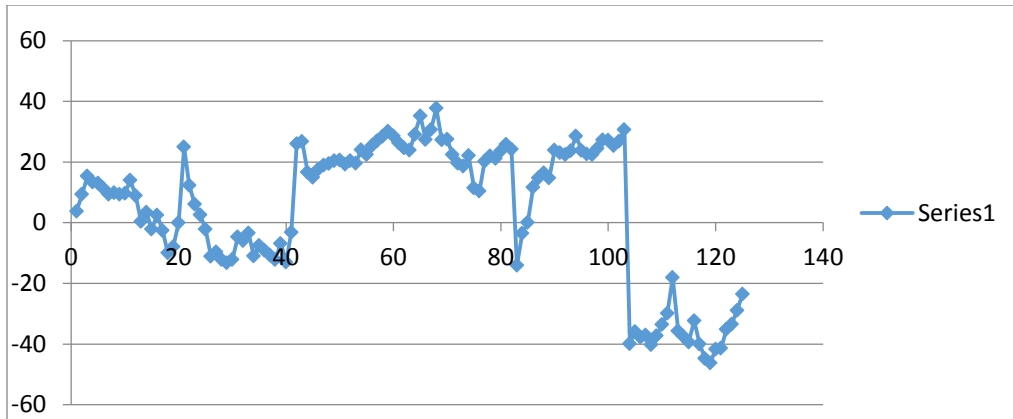
## 4.7 Risk and Return

Investopedia define returns as the gains or losses from a security in a particular period and are usually quoted as a percentage. Risk is defined as a chance that an investment's actual return will be different than expected. Risk means you have the possibility of losing some, or even all, of your original investment. Low levels of uncertainty (low risk) are associated with low potential returns. High levels of uncertainty (high risk) are associated with high potential returns. The risk/return tradeoff is the balance between the desire for the lowest possible risk and the highest possible return.

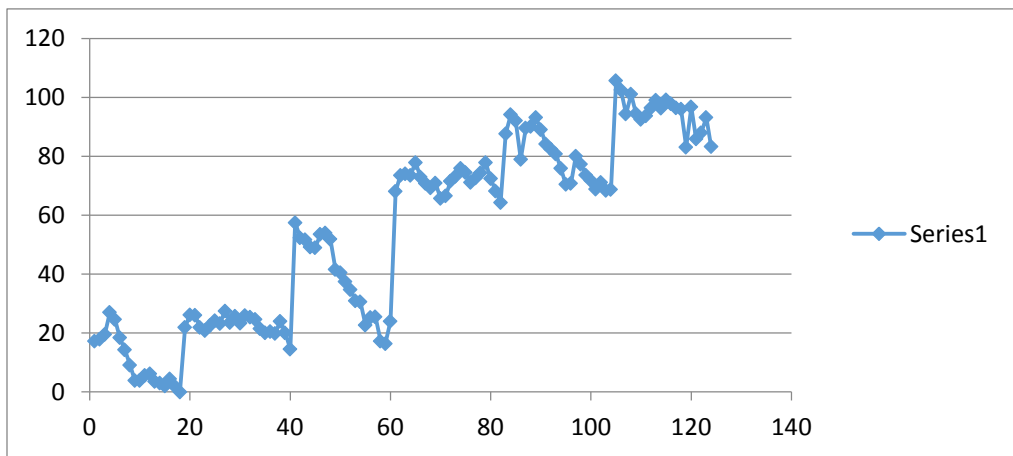
In economic theory it defines profit as the surplus earned above the normal return on capital.



**Figure 4.18: Growth in Profit Period April 2011-September 2011**



**Figure 4.19: Growth in Profit Period October 2011-april 2012**



**Figure 4.20: Growth in Profit Period April 2012-Sep 2012**

From the above graph its evident in the period of April 2011 to September 2011 the investor return was growing or risk was minimized. The total amount of profit made was 1255.91. In the period that followed after introduction of online system we realize the return is not that consistency and hence it shows it was affected. The total return in this period was 572.23. Using the next six month for analysis we see that the trend continues to grow. This may be an indication that investor now are familiar with

the system and now are using the platform probably. The amount made is way far huge of 6687.92. This is also online from the number of share traded where we realize that in this period it was the highest.

#### 4.8 Summary Analysis

April 2011 - September 2011

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	478.975533	134.3083955	3.56623673	0.00052116
4029.23	-0.10942423	0.034788354	-3.14542718	0.00209121
501988763	-5.92933E-09	1.34951E-08	-0.43936866	0.66118462
-32.38	0.066555181	0.20014954	0.332527273	0.74007133

#### Regression Statistics

<b>Multiple R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Standard Error</b>	<b>Observations</b>
0.868877952	0.754948895	0.748822617	18.01214737	124

#### Correlation

<b>NSE 20 Share Index</b>	<b>Market Cap</b>	<b>Profit</b>
-0.867850798	-0.27377968	0.856963143

$$\text{Profit} = 478.975 - 440.89 \text{ NSE20 SI} - 2.97 \text{ Market Cap} - 2.155 \text{ profit} + e$$

**Table 4.2\_April 2011 - September 2011 Summary Statistic**

The above summary statistic represent the data of six month. This data market capitalization, NSE 20 share index and profit are tested against time from when the NSE introduced BBOs which was on September 2011. The above data is for six month before the system was introduced. The data was first tested if it was a good fit and it was determined by checking on the value of R squared. From the above data this value is 75% which indicate that it is a good fit.

Could coefficient be zero? Small size of P value we reject hypothesis that either of coefficient could be zero. From the above data we can see that NSE 20 Share Index can be zero because its value is quite small but coefficient for Market Cap and Profit we fail to reject that it can be zero. Also from T statistic it shows value of Market Cap and Profit are close to one hence we as well can reject the Null hypothesis of coefficient being zero but NSE 20 Share Index we fail to reject. Among the variables a correlation between them and time was tested. With 87% being correlation between NSE 20 share Index and time, 27% being correlation between market cap and time and 86% being correlation between profit and time. It's clear that between NSE 20 share index and profit there is strong relation while Market Cap there exist weak relation.

October 2011 - March 2012

	<i>Coefficients</i>	<i>Std Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	783.4505498	116.7907919	6.708153416	6.8627E-10
3507.34	-0.21891531	0.035793268	-6.11610309	1.2365E-08
148789663	-7.0868E-09	3.36779E-08	-0.21042862	0.83369004
3.73	-1.21357819	0.164869555	-7.36083866	2.5012E-11

**Regression Statistics**

<b>Multiple R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Standard Error</b>	<b>Observations</b>
0.565528143	0.31982208	0.302817632	30.00878579	124

**Correlation**

<b>NSE 20 Share Index</b>	<b>Market Cap</b>	<b>Profit</b>
-0.139469149	-0.03957652	-0.315809598

$$\text{Profit} = 728.45 - 767.81 \text{ NSE20 SI} - 1.054 \text{ Market Cap} - 4.527 \text{ profit} + e$$

**Table 4.3 October 2011 - March 2011 Summary Statistic**

The above summary statistics represent the data of the period from October 2011 to March 2012. This data includes market capitalization, NSE 20 share index, and profit, which were tested against time. The data was collected over a six-month period immediately after introducing the BBOs. When tested for a good fit, the R-squared value was 30%, which is significantly below 100%, indicating that the data does not provide a good fit. This is also reflected when we look at the correlations, which are all weak compared to time.

Could the coefficient be zero? A small p-value leads us to reject the hypothesis that either of the coefficients could be zero. From the data, we can see that the NSE 20 Share Index and Profit have very small p-values, so we can reject the hypothesis that they are zero. For Market Cap, we fail to reject that it could be zero. The T-statistic shows that the values for the NSE 20 Share Index and Profit are not close to one, so we can reject the null hypothesis of a coefficient being zero, but for Market Cap we fail to reject. Among the variables, the correlation between them is below 30%, which reflects a weak relationship.

April 2012 - October 2012

	<b>Coefficients</b>	<b>Std Error</b>	<b>T Stat</b>	<b>P-value</b>
Intercept	-65.9279129	81.17861769	-0.81213397	0.41835011
3534.53	0.020853195	0.023236459	0.897434295	0.37131461
414840231	3.71282E-09	7.53258E-09	0.492901697	0.62299803
17.93	0.931228078	0.110371856	8.437187796	9.4643E-14

**Regression Statistics**

<b>Multiple R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Standard Error</b>	<b>Observations</b>
0.913995929	0.835388558	0.831203521	14.5285924	122

**Correlation**

<b>NSE 20 Share Index</b>	<b>Market Cap</b>	<b>Profit</b>
0.861531956	-0.01538855	0.913591747

$$\text{Profit} = -66 + 73.7 \text{ NSE20 share index} + 1.54 \text{ Market Cap} + 16.697 \text{ profit} + e$$

**Table 4.4 April 2012 - September 2012 Summary Statistic**

This data when tested for good fit with Adjusted R squared 83% it showed it is a good fit. Could coefficient be zero? Small size of P value we will reject that hypothesis. In this analysis we fail to reject for NSE 20 Share Index and Market Cap that their coefficient could be zero but for profit coefficient we reject the hypothesis that it could be zero. Also from T statistic it showed that the value of NSE 20 Share Index and Market Cap coefficient is not close to one but profit coefficient is, hence we fail to reject the Null hypothesis that coefficient of Profit could be zero but we reject hypothesis that for NSE 20 Share Index and Market Cap could be zero.

Both NSE 20 Share Index and Profit showed very strong relationship while Market Cap showed the weak correlation. This shows that both Profit and NSE 20 Share Index were greatly affected by time from change in internet adoption.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents summary of findings as discussed in chapter four and interpretations of the data analysis, conclusions and recommendations based on the findings. It also gives severally limitations as discovered during the research process. This chapter also has suggestions for further research based on questions left unanswered by the research.

#### **5.2 Summary**

The research was conducted on 20 of the listed companies in the NSE that make up the NSE 20 share index. The study focused how internet growth which has led to introduction online share trading practices. In September 2011 they introduced BBO which enabled stock broker to conduct trading behind their desk instead of going to the floor. Subsequently they also came up with platform to facilitate and help their customers to place order online. This has also led to increase of available material to help an investor to make a more informed and researched decision. Active momentum trader being the investors who benefit most from instant and more timely transaction have also embraced the system.

NSE has also being able to give live feeds during the trade hour and summary during closed hour. This have also enabled active momentum trader to follow market anytime and spot those companies either to add or remove from the portfolio. Online

and mobile devices have changed and influenced the way of doing businesses on most of the sector of this nation. As we have seen in the research it's indeed true that sector such as communication and banking have been positively embraced the new technology.

The research found out that indeed there has been increase in the number of people using internet for different purpose in Kenya. This indicates that even in stock market the number had also increased. But the main concern was if there was an effect on active momentum trading by introducing BBO system by the NSE? Did this online platform affected the way the active momentum investor do their business?

This has been seen in the research in the following observation. In the period April to September 2011 the market was in decline. This was observed both in the NSE 20 Share index as well as market capitalization decline as seen from the number of shares traded in NSE. Between periods October to April when it was just after the introduction of the system the market declined further. The number of share traded was low when compared to the period before that. The market picked after six month to highest of the previous two periods. This was an indication that the system was not embraced first and that it resulted in decline in trade but after investor's familiarize with the system they traded more.

From the regression analysis it is true that in the period of April and September 2011 and April to September 2012 the relationship was strong but in the period October



2011 to March 2012 the relationship was weak. This was expected as during that period a lot of changes happened. The relationship was strong in the NSE 20Share Index and profit realized but was relatively weak in market capitalization. This is because the number of share traded during this period was relatively distributed throughout the period. From the equation there was a strong indication that overtime the NSE 20 share Index and profit made by active momentum traders was affected.

### **5.3 Conclusion**

In conclusion the introduction of online system and also having the information about the market being easily available have influence or affected the way active momentum traders do their trade in NSE. Like the banking industry the sector has not fully developed and its uptake is still small but visible. NSE 20 share index has been growing overtime from then and in last year 2014 we experienced the highest point it have ever touched. This indicates that from the time the system was introduced we have had a constant growth and traders has been trading even more.

Also we have seen in the number of trader has increased to 2 million and mostly that number has increase over the last couple of years. These indicate the number of trader may have embraced online platform and also increase in efficiency from in the whole process of trading. From this research it's evident that indeed online and mobile phone has affected the way the active momentum traders do their business.

#### **5.4 Recommendations**

These recommendations are mainly to NSE and capital market authority. They need to educate the investor about the benefit of adopting and using online system to trade. They also need to revise the charges they charge the investor who uses the platform because by adapting to online services there are some cost that are saved. It's cheaper both for NSE and the agents hence it should be to investors.

They should regulate the information that is being published in the internet. Investor depends on data they access online to make decision. With a society that does speculate a lot it would advisable to ensure that information is credible enough. The system should also ensure that they develop proper system to counter cybercrime. We have had some firm losing money in the online transaction and it should be address before we reach there. Currently we don't have laws governing the cybercrime in NSE in Kenya and it would be wise to do so.

They also need to develop the system that are being used to ensure that they are more investor friendly and even layman can be able to use it. The platform that is currently being used is more complicated for layman investors who mostly are the majority shareholder. Having them join the young and educate in the platform will increase the activity of the NSE hence creating more opportunity for more investor.

They should promote and create more awareness about the existence of the platform. A lot of investors are not conversant with the system and also even those who do they

are not aware about how it works. They should be able to revise the cost of the material of the past activity of the NSE. This would make it more affordable and accessible to the investor.

### **5.5 Limitations of the Study**

This research determined that there was variation in trading practices between the periods under the study but it was not entirely affected by the online and mobile trading practices. There were other factors that are unique to each period hence limiting the effectiveness of the result. Also comparing result from two different seasons is a factor that has limited this study. Companies at times are affected by the micro factors which affects one period differently from others. Having in mind we are using NSE 20 share index its contribution may not be consistency.

This research used secondary data which can be manipulated at the time of recording by the recipient. This is one of limitation of secondary data, which may make the outcome of the study not entirely reliable. We could only assume that the data obtained was not interfered with. Secondary data is also limited and only what is available can be used to analyzed.

There are not enough researches that have been done in this field. This limits the number of comparison that can be done. When compared to past studies one is able to determine to what extent has the research agreed or deviated from others. This improves on the credibility of the study. It also became a challenge when doing the

background check and literature review.

There was limitation of identifying the momentum traders from the NSE. From the study we were limited on how to get the number of momentum trader in person. Because of the large number of trader in the NSE and not having them being classified differently it was a challenge to pick up only momentum traders for this study.

We had also limitation of time and resources. Such a research need to be done for longer time and extensively. Because of time we had to use past data unlike if we would have enough where we would spend time watching and following the movement in the current period. Resources because most of the data are costly and one may not able from severally sources.

### **5.6 Suggestions for Further Research**

Finally further studies should be done focusing on how online and mobile phone does affect active momentum trading in NSE. It's evident that internet and mobile phone usage has been growing in Kenya. This would improve on the material available to these kinds of investors when needed. More research would also explore the opportunity and also determine how growth in the internet and mobile phones could be tapped to enhance and improve how active momentum trading in NSE has been transacting.

This research recommend further research to be done to determine to what extend have the adoption of online and mobile devices have affected the active momentum active trading in the NSE. This research has determined indeed there was an effect on these kinds of investors but not to what extent. This research has also seen that there are severally challenges that do exist when we use online platform. I would recommend that more research on how this limitation have influence the traders be done. We have seen that using online system make the cost cheaper but we have not quantified this. A research need to be done to know if the cost saved would be significantly different from the traditional method.

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## **LIST OF APPENDIX I: LISTED SECURITY BROKER IN NSE**

1. Dyer & Blair Investment Bank Ltd
2. Apex Africa Capital Ltd Sterling Capital Ltd
3. Suntra Investment Bank Ltd
4. Old Mutual Securities Ltd
5. SBG Securities Ltd
6. Francis Drummond & Company Limited
7. Ngenye Kariuki & Co. Ltd. ( Under Statutory Management)
8. Faida Investment Bank Ltd
9. KCB Capital
10. Discount Securities Ltd. (Under Statutory management)
11. African Alliance Kenya Investment Bank Ltd
12. Kingdom Securities Ltd
13. ABC Capital Ltd
14. Afrika Investment Bank Ltd
15. Renaissance Capital (Kenya) Ltd
16. NIC Securities Limited
17. Genghis Capital Ltd
18. CBA Capital Limited
19. Equity Investment Bank Limited
20. Standard Investment Bank Ltd
21. Kestrel Capital (EA) Limited

## **LIST OF APPENDIX II: NSE 20 SHARE INDEX**

1. ICDC Investment Company
2. Kenya Electricity Generating Company
3. Mumias Sugar Company
4. Rea Vipingo Plantations Ltd.
5. CMC Holdings
6. Express Ltd.
7. Nation Media Group
8. Sasini Ltd.
9. Kenya Airways
10. Safaricom Ltd.
11. Barclays Bank (K) Ltd.
12. Equity Bank
13. Kenya Commercial Bank
14. Standard Chartered Bank (K) Ltd.
15. Bamburi Cement Ltd.
16. British American Tobacco Ltd.
17. East African Breweries Ltd.
18. East African Cables
19. Kenya Power & Lighting Company
20. Athi River Mining

**LIST OF APPENDIX III: NSE LISTED COMPANIES AND THE NUMBER OF SHARE ISSUED.**

	<b>COMPANY</b>	<b>SYMBOL</b>	<b>LISTED</b>	<b>ISSUED SHARES</b>
1	Access Kenya Group Limited	ACCS	2007	218,467,081
2	ARM Cement Limited	ARM	1997	495,275,000
3	Bamburi Cement Limited	BAMB	1970	362,959,275
4	British American Tobacco Kenya Ltd	BAT	1969	100,000,000
5	A.Baumann & Co Limited	BAUM	1948	3,840,066
6	Barclays Bank of Kenya Limited	BBK	1986	5,431,536,000
7	Crown Paints Kenya Limited	BERG	1992	23,727,000
8	B.O.C Kenya Limited	BOC	1969	19,525,446
9	British-American Investments Co.Ltd	BRIT	2011	1,938,415,838
10	Car & General (K) Limited	C&G	1940	40,103,308
11	East African Cables Limited	CABL	1973	253,125,000
12	Carbacid Investments Limited	CARB	1972	254,851,988
13	CFC Stanbic of Kenya Holdings Ltd	CFC	1970	395,321,638
14	Liberty Kenya Holdings Limited	CFCI	2007	535,707,499
15	Co-operative Bank of Kenya Limited	COOP	2008	4,889,316,295
16	Diamond Trust Bank Kenya Limited	DTK	1972	242,110,105
17	East African Breweries Limited	EABL	1972	790,774,356
18	Eaagads Limited	EGAD	1972	32,157,000
19	Equity Group Holdings Limited	EQTY	2006	3,702,777,020
20	Eveready East Africa Limited	EVRD	2006	210,000,000
21	Sameer Africa Limited	FIRE	1994	278,342,393
22	Hutchings Biemer Limited	HBL	0	360,000
23	Housing Finance Co. Kenya Limited	HFCK	1992	235,750,000
24	Centum Investment Co Limited	ICDC	1967	665,441,775
25	Jubilee Holdings Limited	JUB	1984	59,895,000
26	Kapchorua Tea Company Limited	KAPC	1972	3,912,000
27	Kenya Commercial Bank Limited	KCB	1989	2,984,227,692

28	KenGen Company Limited	KEGN	2006	2,198,361,456
29	Kenol Kobil Limited	KENO	0	1,471,761,200
30	Kenya Reinsurance Corporation Ltd	KNRE	2007	699,949,068
31	Kenya Power & Lighting Co Limited	KPLC	1972	1,951,467,045
32	Kenya Airways Limited	KQ	1996	1,496,469,035
33	Kakuzi Limited	KUKZ	1951	19,599,999
34	Limuru Tea Company Limited	LIMT	1967	1,200,000
35	Longhorn Kenya Limited	LKL	1993	58,500,000
36	Marshalls East Africa Limited	MASH	1969	14,393,106
37	Mumias Sugar Co. Limited	MSC	2001	1,530,000,000
38	National Bank of Kenya Limited	NBK	1994	280,000,000
39	NIC Bank Limited	NIC	1971	597,282,563
40	Nation Media Group Limited	NMG	1973	188,542,286
41	Olympia Capital Holdings Limited	OCH	1974	40,000,000
42	Kenya Orchards Limited	ORCH	1959	12,868,124
43	Pan Africa Insurance Holdings Ltd	PAFR	1963	96,000,000
44	East African Portland Cement Co. Ltd	PORT	0	90,000,000
45	Rea Vipingo Plantations Limited	REA	1996	60,000,000
46	Sasini Limited	SASN	1965	228,055,500
47	Scangroup Limited	SCAN	2006	378,865,102
48	Standard Chartered Bank Kenya Ltd	SCBK	1988	309,159,514
49	Safaricom Limited	SCOM	2008	40,065,428,000
50	Standard Group Limited	SGL	1954	81,731,808
51	Trans-Century Limited	TCL	2011	280,284,476
52	Total Kenya Limited	TOTL	1988	175,028,706
53	TPS Eastern Africa Limited	TPSE	1997	182,174,108
54	Uchumi Supermarket Limited	UCHM	1992	265,424,636
55	Unga Group Limited	UNGA	1971	75,708,873
56	Williamson Tea Kenya Limited	WTK	1972	8,756,320
57	Express Kenya Limited	XPRS	1978	35,403,790
58	CMC Holdings	CMC	0	0

**LIST OF APPENDIX IV: SHARE'S HIGH AND LOW PRICE FOR SIX  
MONTH FROM OCTOBER 2010 TO MARCH 2011**

<b>Nation</b>	<b>Media</b>	<b>Group</b>	<b>Safaricom</b>			<b>CMC</b>		
Oct	170	160	Oct	5	4.4	Oct	13.5	11.75
Nov	170	155	Nov	4.95	4.3	Nov	13.5	11.8
Dec	174	151	Dec	4.8	4.5	Dec	12.8	12
Jan	175	161	Jan	4.85	4.2	Jan	13	12
Feb	175	170	Feb	4.5	3.9	Feb	12	9.8
Mar	180	170	Mar	4.25	3.6	Mar	10.45	9.5
<b>Sasini</b>			<b>Rea Vipingo</b>			<b>Express</b>		
Oct	14.7	13	Oct	19.8	16.5	Oct	10.9	9
Nov	14.6	12.7	Nov	18.85	15.8	Nov	10	8.5
Dec	13.5	12.7	Dec	17.5	15.25	Dec	8.85	7.75
Jan	14	12.5	Jan	18.85	16.5	Jan	9	7.75
Feb	12.7	11.4	Feb	17	16.3	Feb	8.2	7.4
Mar	11.75	9	Mar	17	15.25	Mar	7.6	5.5
<b>Mumias</b>			<b>Barclays</b>			<b>Equity</b>		
Oct	12.55	10.6	Oct	69	64	Oct	27	26.25
Nov	11.75	9.5	Nov	70	60	Nov	27	25.25
Dec	10	9.1	Dec	63	55	Dec	27.75	24.5
Jan	10.7	8.5	Jan	70	63	Jan	30.25	26.75
Feb	9.5	7.8	Feb	72	60.5	Feb	29	27.5
Mar	8.1	7	Mar	70	56.5	Mar	28.5	23.5
<b>KCB</b>			<b>Standard Chartered</b>			<b>Bamburi</b>		
Oct	23	20.75	Oct	285	254	Oct	212	196
Nov	23	20.75	Nov	280	260	Nov	210	190
Dec	22.5	21.25	Dec	273	240	Dec	199	185
Jan	24.75	21.75	Jan	282	258	Jan	199	185
Feb	24	22	Feb	281	265	Feb	204	195
Mar	23.75	22	Mar	281	255	Mar	199	165
<b>BAT</b>			<b>Kengen</b>			<b>Centum</b>		
Oct	285	270	Oct	18.35	15.65	Oct	25.5	23.75
Nov	300	270	Nov	18	15.2	Nov	25.25	22.5
Dec	285	270	Dec	17.55	15.3	Dec	24.25	21.25
Jan	280	270	Jan	17.5	16.1	Jan	24.5	23
Feb	295	270	Feb	16.9	15.2	Feb	24.25	21.75
Mar	282	269	Mar	15.2	12.8	Mar	22.5	20.5
<b>EABL</b>			<b>EA cables</b>			<b>KPLC</b>		
Oct	215	189	Oct	19	18	Oct	25	21.9
Nov	226	201	Nov	18.5	15	Nov	30.5	22

Dec	216	195	Dec	17	15	Dec	25	21.25
Jan	230	181	Jan	16.55	15.4	Jan	26.25	21.5
Feb	200	180	Feb	20.25	15.5	Feb	24.25	21.5
Mar	185	162	Mar	20.25	14	Mar	22.25	21
<b>Athi River</b>			<b>Kenya Airways</b>					
Oct	180	160	Oct	48.5	42.5			
Nov	178	165	Nov	47.25	41.5			
Dec	190	171	Dec	48	44.5			
Jan	195	176	Jan	49	45.75			
Feb	194	175	Feb	46	39.25			
Mar	184	154	Mar	40	31.75			

### **Note**

The reason I used data from 2010-2012 was because it was the period between which NSE introduced the online system as explained in the earlier part of study.