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Effects of Securities Behaviour on Performance of Nairobi Securities Exchange Indices

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Abstract
This study aimed at establishing the Influence of investor's behaviour on the performance of Nairobi Securities Exchange (NSE) indices. A reliable security market index should assist investors in making investment decisions but this is not always the case: investors at times invest in stock whose performance is not reflected in the indices. This study was guided by specific objectives which included: to establish the Influence of momentum effect, financial contagion, white noise effect, Security Price Volatility, and Herding Effect (all as independent variables) on performance of NSE indices as the dependent variable. This study was anchored to finance theories such as random walk theory, rational bubbles theory, smart money and noise trader's theory, price formation and discovery theory, and information disclosure theories. The study was based on a period of 12 years starting from January 2004 to December 2015. The population of this study comprised of all the market participants at the NSE and thus a census approach was adopted where study period was done based on each specific objective. This research relied on primary data. Primary data was collected from all the market participants. In data analysis, a significance level of 5% was used on all objectives and a multiple regression model on each objective was used. The Statistical Package for Social Sciences (SPSS) was used on primary data for analysis. The findings for primary data showed all the indices to be insignificantly influenced by the securities behaviour but the overall NSE indices performance was statistically affected. Hypotheses were tested at 0.05 level of significance. The first hypothesis on momentum effect was not rejected on primary. The second hypothesis on financial contagion was rejected and.on the hypothesis of white noise effect, it was not rejected. The hypothesis of Security Price Volatility effect was not rejected while hypothesis of herding effect was rejected. It was concluded that all the indices play a complimentary role thus the need for the retention of all. NSE is highly contagious of the events that happen around it. The study recommends that future researchers should increase the respondents to also include investors. For the objective of momentum effect, the study recommends that more exchanges be included to get a finer detail. NSE and CMA should ensure that information availed to the researchers is obtained at minimal cost or for free to encourage more research into the security markets.
Keywords: Momentum Effect, Financial Contagion, White Noise Effect, Share Price volality effect, Herding Effect and Nairobi Securities Exchange Indices

1.0 INTRODUCTION

The Kenya economy has been growing at a rate of less than 7% in the first one and half decade of 21st century. The growth rate has been at 1.5%, 2.7%, 5.8%, 4.3% and 4.6% for the years 2008, 2009, 2010, 2011 and 2012 respectively(Kenya Institute for Public Policy Research and Analysis, 2013) with the growth rate in 2013 revised to 5.7% while that of 2014 established at 5.3% (The World Bank, 2014). The financial sector plays an important role in the economic development process towards the achievement of Kenya Vision 2030-the blue print for Kenya's economic development. This achievement will heavily depend on the macro economy, (Kenya Institute for Public Policy Research and Analysis, 2013), which comprises of banks, deposit taking micro finance institutions and insurance companies. Financial variables include items that characterises demand and supply of financial instruments relevant for economic activity(Mishkin, Schoenholtz, Watson, Hooper, & Bank, 2010). A country's macro economy heavily relies on the financial markets in its prosperity and a financial market is represented by stock markets amongst other players.

A stock exchange, also known as a securities exchange, is a formal organization regulated and approved by an Act of parliament and is a physical location where members assemble to trade. The major function of a stock Market is to assist in the transfer of savings to invest in productive enterprises as an alternative to keeping the savings idle (Osoro & Jagongo, 2013). A stock market performance can be measured by use of market capitalization, market turnover or a market index (Kithinji & Ngugi, 2009), where the most recommended is the securities market index. (Betz, Hautsch, Peltonen, & Schienle, 2016). Schick (2014) notes that a market index is an aggregate value produced by combining several stocks or other investment vehicles together and it is based on a sample or all of the security market companies (Owido, Onyuma, & Owuor, 2013). A stock index is calculated on a daily basis and according to (Affleck, Money, & Troskei, 1980), it can be computed in five different ways namely: Arithmetic Average of Price (DJ Index), Market Capitalization Index (SP Index), Arithmetic Average of Return (UP Index), Geometric Average of Return (VL Index) and ESE Indices (ESE Index). The security market index is intended to represent an entire stock market and thus track the market changes over time (Schick, 2014). After combining these values, their total values are expressed against a base value from a specific date.

Behavioural finance considers human behaviour in finance where it attempts to understand how emotions and cognitive errors influence individual investor's behaviour (Luong & Ha, 2011). The authors' identified five types of investor's behaviours that were herding, market, prospect, overconfidence-gambles fallacy and anchoring-ability bias. In their findings, they found that only three factors (herding, prospect and heuristic behaviours) influence investment performance.

Security market indicators have come to perform a variety of functions: they serve as benchmarks and help answer questions in respect to daily price movements (Fabozzi & Peterson, 2003). The most commonly quoted security market indicator is the Dow Jones Industrial Average (DJIA) while other security market indicators in the developed countries that are performing excellently include Standards and Poor 500 Composite (S&P 500), New York Stock Exchange Composite Index (NYSE Composite) and the National Association of Securities and Dealers in Automated Quotations (NASDAQ) composite index. In respect to stock markets, the most effective markets worldwide are the American NYSE, German and Netherlands Stock Exchanges (Hájek, 2007).

If security indices indicate poor performance, investors, especially debtors would be required to append more cash or securities to get credit facilities (Shen, 2011). (Ozkan & Unsal (2012), observe that the global financial crises that took place in the 2000's were triggered by problems in the developed economies that quickly spread to developing economies. A study by Blair, Poon, and Taylor (2000), on Standard and Poor's 100 indexes intended to enquire the predictive quality of volatility forecasts from ARCH models. The study notes that the S & P 100 is the most common index used by American companies. The study also sought to address the importance of selecting a measure of realized volatility in assessing the predictive accuracy of volatility forecasts. A study by Ozkan and Unsal (2012), found that there is lower financial contagion from global financial shock on the domestic economy. The research found that low contagion enables domestic countrys to recover from global financial shocks rapidly on the back of capital flows freeing from foreign towards the domestic economy.

It has been established that the majority of contagion in equity markets are sourced through US equity markets while contagion in bond markets is primarily associated with the events in Russia (Dungey & Gajurel, 2015) (Dungey, Fry, González-Hermosillo, & Martin, 2007) Financial contagion can be best explained by why the recent 2008 globsl financial crisis have been relatively shortlived for a number of emerging economies (Ozkan & Unsal, 2012) A collection of literature by Kadilli (2014), observes that stock returns may be predictable because of market inefficiency triggered by investor misperceptions of publicly available information.While this is stated, theory appears to state otherwise information about predictabilility. Sornette (2003), observes that markets are efficient and that only revelation of a dramatic piece of information can cause a crash. However, the author notes that most research is not conclusive as to what this piece of information might be. The collapse of the dot-com bubble in the start of the 21st Century had severe consequences on the financial markets of US and some Asian countries.

The Kenyan Securities Market is known as the Nairobi Securities Exchange, which was previously Nairobi Stock Exchange. Investors in the exchange can be local retail, local institutional, international individual or international institutional investors. The NSE Currently has 64 listed firms with 61 firms actively trading (Nairobi Securities Exchange, 2015). The NSE has had tremendous developments namely automation of its services, increasing its trading hours and most recently (on July 1, 2014) demutualization. After demutualization, NSE was subsequently listed in the MIMS under the subsector of investment services (Nairobi Securities Exchange, 2014). In the East African Stock Markets, there are eight firms that are currently cross listed in more than one stock market with three firms currently listed in all the three former East African Markets (Onyuma, Mugo, & Karuiya, 2012). The Kenyan Securities Market is the most robust among the four East African stock markets. This is evidenced by the fact that out of the eight firms that are cross-listed, it is only Umeme Ltd which is Ugandan firm with the rest being Kenyan based firms. In the East African Community, the market in Uganda is known as Uganda Stock Exchange, the Tanzanian Market is known as Dar-es-Salaam Stock Exchange, while that of Rwanda is called Rwandese Stock Exchange. Burundi currently is the only East African Country without an established Stock Market (Onyuma et al., 2012)

The NSE is the third largest stock exchange in Africa by market capitalization and the seventh largest by the number of listings (Capital, 2014). In terms of market capitalisation, only Johanesburg Stock Exchange (JSE) and Nigerian Stock Exchange (NiSE) are larger than NSE, while in terms of the number of listings, NSE is preceded by Egyptian Stock Exchange (833), JSE (402), NiSE (223), Stock Exchange of Mauritius (88), Casablanca Stock Exchange (81) and Zimbabwe Stock Exchange (64). Aroni et al., (2011), observes that individuals are faced with increasing complex choices of financial products from which to make investment decisions-this is in the conquest of increasing their returns. The exchange has four major segments namely Main Investments Market Segment (MIMS), Alternate Investments Market Segment (AIMS), Growth Enterprise Market Segment (GEMS) and Fixed Income Securities Market Segment (FISMS) (Nairobi Securities Exchange, 2014).

The firms listed in the NSE can also be classified into 11 distinct sub-sectors which are drawn from the four main sectors. These sub-sectors are: Agricultural with seven firms, Automobiles and Accessories with three

firms, Banking with 11 firms, Commercial & Services with 10 firms, Construction & Allied with five firms, Energy & Petroleum with five firms, Insurance with six firms, Investment with five firms, Investment services with one firm, Manufacturing & Allied with 10 firms, and Telecommunication & Technology with one firm (Nairobi Securities Exchage, 2014). NSE is currently the only securities exchange to be demutualized after the Johannesburg Stock Exchange. Demutualization is the act of separation of ownership and management. This means that there is a firm listed in the Nairobi Securities Exchange investment services sector by the name Nairobi Securities Exchange Ltd and this would imply more accountability in the management of the operations of the NSE as opposed to previously where the NSE was owned by 20 stock brokers and dealers (Nairobi Securities Exchange, 2014).

In Kenyan Securities Market, we have various approaches of measuring performance: these include the Nairobi Securities Exchange 20 share index (NSE 20), NSE All Share Index (NASI), Financial Times Stock Exchange (FTSE) NSE Kenya 15 Index and FTSE NSE 25 Index. The NSE 20 share index is the most common and oldest while the others were launched in the year 2008 and 2011 respectively. According to Osoro and Jagongo (2013), NASI was developed in February 2008 as a complimentary index due to the inherent shortcomings of the NSE 20 Share Index. Since its only 20 companies, constituting the index out of the currently listed 64 companies may suggest that the NSE 20 Share Index is biased. Computation of the NSE 20 share index is rarely revised (Osoro & Jagongo 2013) and this leads to biasness for companies that were initially given the same weight several years ago, may be different in terms of sizes but the same formula used years ago is still used without revising. In 2008, the NSE All Share Index (NASI) was introduced with its base year being 1st January 2008 and its base value of 100. NASI incorporates all securities trading at the NSE regardless of the year of listing, the company's performance and the size of the company (Osoro & Jagongo, 2013). The FTSE Kenya 15 Index and FTSE 25 Index were launched in November 2011 (Nairobi Securities Exchange, 2014), which was because of an extensive market consultation process with local asset owners and fund managers. The aim of their launch was due to the growing interest in new domestic investment and diversification opportunities.

During the launch, the Chief Executive of NSE noted that FTSE NSE Kenya 25 Index would be aimed at reflecting the performance of the 25 most liquid stocks trading on the NSE, while FTSE NSE Kenya 15 Index would reflect the performance of the largest 15 stocks ranked by full market capitalisation on the NSE (Nairobi Securities Exchange, 2014). NSE, which is an emerging stock market, is highly correlated with the developed markets despite going against the theory (Komo & Ngugi, 2013). The authors established that the NSE and the UK exchange had a very high correlation implying that even though NSE is an emerging stock market, it is not isolated from the capital markets of other developed countries.

Stock prices signify the perceived value of the investments they represent (Komo & Ngugi, 2013): they reflect the marginal productivity of capital. Increase in productivity of capital could imply increase in investment activities. The authors noted that there is a positive correlation between changes in stock prices and investment growth. There have been arguments that the above average performance of the macro economy may not always reflect the micro economic performance. In a country where the poverty index is high for most parts of the country, it becomes fundamentally important to test the models that are used in performance evaluation.

1.1 Statement of the Problem

Security markets are a very critical part of the economy: they allow redistribution of financial resources among various economic entities (Pilinkus, 2010) Their performance is best captured in a securities market index, which should ensure that it assists investors in making prudent investment decisions. A securities market index should always give reliable information: however, this is not always the case. For instance, the Kenyan economy has been growing at 1.5%, 2.7%, 5.8%, 4.3%, 4.6%, 5.7% and 5.3% for the years 2008 through to 2014, while the NSE indices have not been reflecting this trend (KIPPRA, 2013): the NSE 20 share index declined in 2009, increased in 2010, decreased in 2011 and increased in 2012. The NASI decreased in 2009, increased in 2010, decreased in 2011 and increased in 2012 (KIPPRA, 2013). In their collection of literature, Aroni *et al* (2014), observe that EMH is steadily becoming deficient in providing explanations for the market behaviour. Osoro and Jagongo (2013), observe that the NSE 20 Share Index-may not at all times capture the most accurate information. The authors note that with the adoption of NSE All Share Index (NASI) in 2008, there was no improvement on the performance of NSE indices.

African stock markets are illiquid and most are characterised by thin trading (Pilinkus, 2010) and this may imply that a security market indicator in Africa may not accurately portray the state of a country's economic performance. During the 2008 global financial crisis, the NSE was hardest hit by the crisis (Ahmed, 2010) yet Kenya is a developing country that is quite distanced from the epicentre of credit crisis in terms of economic growth, industrialization and economic integration (Komo & Ngugi, 2013). Shen (2011), notes that when distressed traders are subjected to regulatory or leverage constraints, they have to liquidate their positions and this may lead shareholders incurring mark-to-market losses thus being forced to liquidate as well. When a security market indicator is not well composed, there is a risk of financial contagion. Dungey *et al* (2007),

observe that if there is financial contagion, there is continous nervousness, and this can lead to near collapse of an economy. In as much as fundamental or macro-economic factors are the main factors that are used to establish market performance of a stock, the public opinions on a stock is also important (Robert, 2012) this being called white noise effect. The 2008 global financial meltdown was the worst crisis in history. It started in the developed countries and spread all over the world. In fact a phrase was coined that, 'when United State catches a cold, Europe gets a flu'. Aduda, Oduor and Onwonga (2012), found that that investors experience positive results when they exhibit rationality, but experience negative results when exhibit irrationality and Herding Effect. This study, therefore, aimed at providing insights and add knowledge in respect to the Influence of securities behaviour and the performance of NSE indices.

1.2 Objectives of the Study

1. To establish the Influence of momentum effect and performance of Nairobi Securities Exchange indices
2. To determine the Influence of financial contagion and performance of the Nairobi Securities Exchange indices
3. To establish the Influence of white noise effect and performance of the Nairobi Securities Exchange indices
4. To establish the Influence of share price volatility and performance of the Nairobi Securities Exchange indices
5. To determine Influence of Herding Effect and performance of Nairobi Securities Exchange indices

1.3 Research Hypotheses

1. $H_0$1: There is no significant Influence of momentum effect and the performance of Nairobi Securities Exchange indices
2. $H_0$2: there is no significant Influence of financial contagion and the performance of Nairobi Securities Exchange indices
3. $H_0$3: There is no significant Influence of white noise effect and the performance of Nairobi Securities Exchange indices
4. $H_0$4: there is no significant Influence of share price volatility and the performance of Nairobi Securities Exchange indices
5. $H_0$5: There is no significant Influence of Herding Effect and the performance of Nairobi Securities Exchange indices

1.4 Significance of the Study

Kenyan stock market being among the best performing in the African continent will greatly benefit from the results of this study. The study will help the management of NSE in its policymaking. Investors in Kenya will be able to learn more about the links between financial markets and economic performance of a country. This study will add value to scholars for they will understand how our stock market operates. Studies have been done on the NSE about the announcements (Price, earnings, rights, corporate personalities), stock splits, cross listing, rights issue and socio-cultural behaviours but no study has been done on determining the Influence of Securities Behaviour and performance of NSE Indices. It will also be of great benefit to practitioners and financial analysts who will attempt to know the efficiency of the market indicators they regularly use in making investment decisions. Financial analysts and policy makers may get some insights from the results of this study about what methodologies to continue applying and those ones that they should overhaul. The study will also highlight the areas of future research to enable Kenya accomplish its vision 2030.

2.0 LITERATURE

A security market indicator can be used as a benchmarking tool, proxy for market portfolio, research tool for scholars and technicians can use it to predict price movements (Osoro & Jagongo, 2013). In selecting the companies to constitute the index, both non-random and random selection are used. Non random selection is used to select the various segments of a stock exchange while random selection is used to select the companies on the segments. Non-random are important especially for companies that are so important in the stock market such that ignoring them would result into inconclusive findings. For Instance a company like Safaricom Ltd. must be included in the analysis of the Nairobi Securities Exchange. This is because of its size in terms of market capitalisation, volume of shares outstanding, volume of shares traded and profitability, and being the only company listed in its sector. For instance, in the month of April 2014, the Market Capitalization of all firms listed in the NSE stood at around 2.1 Trillion and at the same period the market value of Safaricom Ltd. stood at around 528 Billion while its total shares outstanding amounted to 40.6 Billion (Nairobi Securities Exchange, 2014). The above when computed would imply that Safaricom constitutes around 25.1% and ignoring this firm on the analysis would not reflect the true picture of the Kenyan Securities Markets.

Indices are selected from different firms and base years and thus the percentage change is more important than the value of the index (Osoro & Jagongo, 2013). The difference in the movement of index depends on the way the index is constructed (Fabozzi & Peterson, 2003). The factors considered in index construction are: the universe of the stocks represented by the sample underlying the index, weight assigned to the stocks on the index and the method of averaging across all stocks. A good security market indicator need to be highly correlated with key sectors in the economy: Komo and Ngugi (2013), notes that most stock indicators tend to be highly correlated with the banking sector development. The possible explanation could be due to the fact that the banking industry performance is an aggregated averaged performance of all other sectors in the economy.

According to Osoro and Jagongo (2013), two methods of averaging may be used: arithmetic average and geometric average. Arithmetic average is a simple average while geometric average involves multiplication of components after which the product is raised to power of 1/No. of components. Fung, Sierra, Yau, and Zhang (2008), found a significant mutual feed back of information between the stock market and the high yield Credit Default Swap (CDS) in terms of pricing and volatility. The CDS market plays a more significant role in volatilty spillover than the stock market. The authors also found out that volatility of investment grade and high-yield CDS seem to lead to stock market volatility and high-yield CDS has a feedback effect to that of the high-yield CDS market only.

A number of studies have been done in developed countries testing the reliability of security market indicators (Hajek, 2007). However this has not yet been done in developing countries such as Kenya. There are also discrepancies in respect to interpretation of these market indicators. A study by Osoro and Jagongo (2013) about the investors perception on the NASI and NSE 20 Share Index as market performace indicators was not conclusive. The results of the researchers seems to have used very simple statistical analysis techniques and they over relied on primary data in their analysis. The statistical techniques that were used were mainly product moment correlation and z test which the research just explained descriptively without supporting with tables. For primary data, the researcher over relied on the opinion of key stake holders in the financial sector without depending much on statistical data. This research ought to have been done in a more vigorous and robust manner so as to establish the statistical back up of the perception of the investors towards the NSE 20 Share Index and NASI. The research was not thorough in its analysis where, for instance, the authors used a likert scale to find which of the two indices was a better performance indicator. This likert scale was based on questionnaire responses and this could be a biased measure of data collection.

Research by Schneeimier (2014), shows that in developed countries, giving CEOs stock based incentives may motivate them to work harder but this in the longrun diminishes the financial markets ability to transmit information. This study will seek to establish whether the above notion would hold water in Kenya's financial markets. A study by Komo and Ngugi (2013), on behaviour of bank share prices and their impact on National Security market indices concentrated on 9 countries at three different economic levels. One of the countries in the study, in the emerging economic levels was Kenya. The study compared recessionary and non recessionary periods. The findings of the study found that even though Kenya is a developing country, its banks stocks were significantly connected with the performances of bank share prices in the developed market. This study will have as one of its objectives that will analyse the extent to which the Kenyan market is affected by financial contagion. The study will now concentrate on the entire securities market (as opposed to Komo and Ngugi (2013), who only concentrated on five Kenyan banks) to establish the level of financial contagion that affects the Kenyan Securities Markets.

Studies on herd formation mainly dwelt on more developed markets and those that touched on the Kenyan securities markets, just took the NSE as one of the study samples. A study by Demirer and Kutan (2006),tried to establish whether Herding Effect existed in the Chinese stock markets while that by Chen (2013), was trying to establish whether investors herd in th global markets. Demirer and Kutan (2006), concentrated purely on the Chinese stock markets while Chen (2013) included Kenya among the frontier markets that he studied.

Other studies in Kenyan Securities markets includes those of Onyuma et al., (2012), which dealt on cross listing and financial performance, Kakiya et al., (2013), Kakiya, who dwelt on announcements and their effect on the efficiency of NSE, Karuitha et al. (2013), who dwelt on stocks splits and their effects on ownership concentration, Amata & Muturi, (2016) who studied macro economic behaviours and Kithinji et al., (2014), who evaluated rights issue announcement and its effects on share performance. Aroni, (2011) studied on the influence of macro economic factors such as inflation, exchange ratess, interest rates and money supply on the stock prices of NSE and found that the first three factors did have a significant influence but the last factor was not found to significantly influence the stock prices at the NSE. Olweny *et al* (2012), studied investors behavior in the dimension of social cultural attributes and how they influence their investment decisions in the perspective of risk tolerance. Mweu (2017) did a study on factros influenceing investment decisions in NSE where the researcher collected data from Dyer and Blair Investment Bank. Aduda et al., (2012) concentrated on how Securities Behaviour influence financial performance of companies listed at the NSE. Amata and Muturi (2016) on the otherhand concentrated on how macro-economic variables influence price volatility in Kenya. Therefore

not much research has been done in Kenya on the Influence of Securities Behaviour and performance of Nairobi Securities Exchange indices.

3.0 METHODOLOGY

Cooper and Schindler (2011) in their many definitions observe that a research design is the plan and structure of investigation so conceived so as to obtain answers to research questions. The plan is the overall scheme or program of the research. They note that it includes an outline of what the investigator will do from writing hypothesis and their operational implications to the final analysis of data. This study will adopt a quantitative research design. This design is determined before commencing the project, suitable for a single method or mixed methods and its consistency is critical (Cooper & Schindler, 2011). A quantitative design is less likely to be associated with a deductive approach to testing a theory. It is a natural science model/ positivist model and very objective in the view of the objects studied (Greener, 2008). The method of analysis in this research involved Causal Comparative Approach. This method of analysis involves either a cross-sectional or a longitudinal approach. It is used to explore relationships between variables and it determines reasons or causes for the current status of the phenomenon under study (Kothari, 2004). The variables of interest cannot be manipulated unlike in experimental research. The approach was suitable for this research because it allowed a comparison of groups without having to manipulate the independent variables and it can be done solely to identify variables worthy of experimental investigation.

This is the universe of things or items from which a sample will be selected (Greener, 2008). This study considered all the stock brokers and investment bankers who are members of the Nairobi Securities Exchange so as to obtain some primary data from these market participants. Since this study focused on all the 20 market participants (for the purpose of primary data) were used in the study, a census design was used. The study used structured questionnaires addressed to the market participants of the NSE. These were inform of a likert scale and helped gather key informants view about the Influence of investor's behaviour and performance of NSE indices. The data from the key informants was be very crucial for they gave information that they have acquired over time in their day to day operations in the security markets. Reliablility of the data collection tool was tested using Cronbachs Alpha where an alpha value of 0.7 and above was considered reliable.

Primary data was collected through the use of structured questionnaires that addressed to all stock brokers and investment bank firms. Since there are only 20 market participants in the NSE, the researcher personally administered the questionnaires to the senior managers of the market participants.. After collection of primary it was edited and coded ready for entry in the SPSS software for analysis. Secondary data will first be input in excel spreadsheets and then analysed through both the Excel and SPSS software.

The multiple regression model to establish the Influence of Securities Behaviour onperformance of NSE indices was established as follows:

$$Y = \beta_0 + \beta_1 X_{1+} \beta_2 X_{2+} \beta_3 X_{3+} \beta_4 X_{4+} \beta_5 X_5 + \varepsilon$$

Where .

Y= the performance of Nairobi Securities Exchange as measured by NSE 20 Share Index, NSE All Share Index (NASI), Financial Times Stock Exchange (FTSE) NSE 15 Index and FTSE NSE 25 Index.

β_0 is the constant element of the model

$\beta_1, \beta_2, \beta_3, \beta_4, and\ \beta_5$ are co-efficients of momentum effect, financial contagion, white noise effect, price volatility and Herding Effect respectively.

X_1 = Momentum effect

X_2 = Financial contagion

X_3 = White noise effect

X_4 = Share price volatility

X_5 = Herding Effect

ε = Error term

In order to establish the accuracy of the results, the researcher conducted diagnostic tests. These tests included Autocorrelation tests, linearity tests, normality tests, multicollinearity tests and hetoroscendasticity tests.

4.0 RESULTS AND DISCUSSION

4.1 Diagnostic Test Results

4.1.1 Reliability Results

Six (6) market participants were used in the pilot testing whose aim was testing the validity and reliability of the research questionnaire. The results of this test were as follows: The overall Cronbach's Alpha was 0.75 which

meets the minimum threshold of 0.7 according to (Saunders et al., 2009).

Table 4.1 overall Reliability Statistics

Cronbach's Alpha	N of Items
.750	156

The researcher also went ahead and established the Cronbach Alphas for each variable that data was intended to be collected from. These are as follows:

Table 4.2 Reliability Statistics for each Objective

Objective	**Cronbachs Alpha**	**No o items**
Momentum Effect	0.71	22
Financial Contagion	0.777	16
White noise effect	0.839	16
Share Price Volatility	0.733	16
Herding Effect	0.791	16

4.1.2 Multicollinearity Tests

The researcher established that there was no multicollinearity or collinearity on all the primary data that was collected. Table 4.3 showed that the eigen values of the variables studied were all less than the threshold of 10 agreeing with the rules discussed by research methodology experts (Saunders et al., 2009).

Table 4.3: Collinearity Diagnostics on the Overall Performance of NSE Indices

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions					
				(Constant)	ME	FC	WN	PV	HE
1	1	5.942	1.000	.00	.00	.00	.00	.00	.00
	2	.023	16.119	.00	.01	.04	.04	.11	.30
	3	.016	19.232	.01	.79	.00	.04	.05	.00
	4	.010	23.878	.01	.17	.26	.22	.00	.41
	5	.007	28.643	.00	.02	.65	.10	.32	.25
	6	.002	58.555	.98	.01	.05	.59	.52	.04

a. Dependent Variable: PERFORMANCE OF NSE

4.2 Descriptive Statistics

In respect to the composite analysis of momentum effect, the researcher found the mean composite score to be 2.69 implying that most responses were towards agreement with the questions raised. Standard deviation in these responses was at 0.42, skewness of 0.58 and kurtosis of 0.29. For financial contagion, the researcher found in the composite index that the mean was 2.53, range of 2 and standard deviation of 0.3. In respect to white noise effect, the researcher found in 15 observations a mean of 2.93, a standard deviation of 0.29 and a range of 1.22.

The results from analysis indicated that in respect to price volatility, the mean composite score was 2.9, with a standard deviation of 0.32 and a range of 1.14. Descriptive statistics on Herding Effect showed a mean of 2.52, a standard deviation of 0.32 and a range of 1.14. From the data analysis the mean descriptive data on NSE 20 Share Index was 2.3, range of 2.13 and standard deviation of 0.6. From the data analysis the mean descriptive data on NSE All Share Index (NASI) was 3.025, range of 1.88 and standard deviation of 0.44. From the data analysis the mean descriptive data on FTSE NSE 15 Index was 2.89, range of 1.5 and standard deviation of 0.39. From the data analysis the mean descriptive data on FTSE NSE 25 Index was 3.18, range of 1.25 and standard deviation of 0.29.

From the primary data collected, the researcher established that most respondents (in respect to NSE 20 Share Index, Financial Contagion, Momentum Effect and Herding Effect) were in agreement with the questions that the researcher had raised during the data collection the response on White noise effect and Price Volatility received a 'not sure' response. Considering the variations in the responses, the questionnaire on 20 Share Index would fall between strongly agree and not sure making it positively skewed. The response on momentum effect, price volatility and that of white noise effect would fall between agree and not sure, still making the responses positively skewed. The response on financial contagion would remain in the agree category making it positively skewed. The response of Herding Effect would fall on agree category making it also positively skewed.

4.3. Influence of Securities Behaviour and NSE 20 Share Index

From the results, the correlation between NSE 20 Share Index and Momentum effect, Financial Contagion, White noise effect, Price Volatility and Herding Effect was 0.525, 0.672, -0.148, 0.332 and -0.155 respectively. The level of significance with the said variables was 0.022, 0.003, 0.299, 0.113 and 0.290 respectively. From the analysis, it was noted that NSE 20 Share index had a strong positive correlation with Momentum Effect and Financial Contagion, weak positive correlation with Price Volatility and weak negative correlation with White noise effect and Herding Effect. In testing of significance, it was found that NSE 20 share Index had a

statistically significant relationship with Momentum Effect and Financial Contagion where P values were less than 0.05 and insignificant relationship with White noise effect, Price Volatility and Herding Effect with the P values all greater than 0.05. The above could imply that the stocks comprising the NSE 20 share index are highly interlinked with the global markets and that they also highly influence each other. This could be the reason why at times we see all stocks rising in prices (Bull Run) or falling in prices (Bear Run) without a fundamental reason to justify such behaviour.

The results from the analysis produced a model showing the Influence of securities behaviour and performance of NSE 20 Share Index. This is shown in tables 4.4 and 4.5. From the analysis, the R square showed a value of 0.641 implying that the dependent variable was influenced by the independent variables to the extent of about 64.1%. Durbin-Watson value was 1.457, F value was 3.219, standard error estimate of 0.44 and P value was 0.061. The P value implied that the results were noZ statistically significant at 5% level of significance meaning that Momentum Effect, Financial Contagion, White noise effect, Price Volatility and Herding Effect did not have a significant effect on the performance of NSE 20 Share Index.

The regression model as shown in Table 4.5 was as follows:

$$y = -1.01 + 0.562x_1 + 1.105x_2 + 0.062x_3 + 0.054x_4 - 5.19x_5$$

Where:

$y$is the performance of NSE 20 Share Index, x_1 is the Momentum Effect, x_2 is the Financial Contagion, x_3 is the White noise effect, x_4 is the Price Volatility and x_5 is the Herding Effect. The p value of the overall model was -0.428 implying that the model was noZ statistically significant in respect to the Influence of securities behaviour and performance of NSE 20 Share Index.

Table 4.4: Model Summary on NSE 20 Share Index

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Stat					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.801[a]	.641	.442	.44468	.641	3.219	5	9	.061	1.457

a. Predictors: (Constant), HB, FC, WN, ME, PV
b. Dependent Variable: 20 SHARE

Table 4.5 Regression Model on NSE 20 Share Index

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	-1.010	2.360		-.428	.679	-6.349	4.328
ME	.562	.317	.398	1.771	.110	-.156	1.279
FC	1.105	.447	.561	2.471	.035	.094	2.117
WN	.062	.472	.031	.131	.898	-1.006	1.130
PV	.054	.446	.029	.122	.906	-.955	1.064
HB	-.519	.361	-.325	-1.437	.185	-1.336	.298

4.4 Influence of Securities Behaviour on NSE All Share Index (NASI)

Analysis was conducted to show the Influence of securities behaviour and performance of NASI. The correlation between NASI and Momentum Effect, Financial Contagion, White noise effect, Price Volatility and Herding Effect was 0.26, 0.427, -0.093, 0.172 and -0.452 respectively. This showed a weak positive correlation on Momentum Effect, Financial Contagion and Price Volatility, while a weak negative correlation on White noise effect and Herding Effect. Results on the same table showed a significance of 0.175, 0.056, 0.371, 0.27 and 0.045 for ME, FC, WN, PV and HB respectively. All the results on correlation were insignificant with exception of Herding Effect which was 0.045 (slightly below the threshold value of 0.05). This could imply that since the NASI is an aggregate of all stocks, the effects of Momentum, Contagion, Volatility and Noise are offset by the numerous stocks involved while the effect of herding is a key factor in the Kenyan securities markets.

The results from the analysis produced a model showing the Influence of securities behaviour and performance of NASI. This is shown in tables 4.6 and 4.7 respectively. From the analysis, the R square showed a value of 0.529 implying that the dependent variable was influenced by the independent variables to the extent of about 52.9%. Durbin-Watson value was 1.346, F value was 2.023, standard error estimate of 0.37 and P value was 0.169. The P value implied that the results were noZ statistically significant at 5% level of significance meaning that Momentum Effect, Financial Contagion, White noise effect, Price Volatility and Herding Effect did not have a significant effect on the performance of NSE 20 Share Index.

The regression model as shown in Table 4.7 was as follows:

$$y = 2.561 + 0.278x_1 + 0.677x_2 + 0.173x_3 - 0.193x_4 - 0.769x_5$$

Where:

$y$is the performance of NSE 20 Share Index, x_1 is the Momentum Effect, x_2 is the Financial Contagion, x_3 is the White noise effect, x_4 is the Price Volatility and x_5 is the Herding Effect. The p value of the overall model was 0.231 implying that the model was noZ statistically significant in respect to the Influence of securities behaviour and performance of NASI.

Table 4.7: Model Summary on NASI

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Stat					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.727[a]	.529	.268	.37538	.529	2.023	5	9	.169	1.346

a. Predictors: (Constant), HB, FC, WN, ME, PV
b. Dependent Variable: NASI

Table 4.8: Regression Model on NASI

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.561	1.992		1.285	.231	-1.946	7.067
	ME	.278	.268	.268	1.040	.325	-.327	.884
	FC	.677	.378	.466	1.794	.106	-.177	1.532
	WN	.173	.398	.116	.435	.674	-.728	1.074
	PV	-.193	.377	-.140	-.513	.620	-1.045	.659
	HB	-.769	.305	-.653	-2.521	.033	-1.459	-.079

4.5 Influence of Securities Behaviour and FTSE NSE 15 Index

The study also tested the Influence of securities behaviour and performance of FTSE NSE 15 Index. The 15 Index captures the 15 largest companies by market capitalisation in the NSE. Correlation analysis was found that the correlations were 0.384, 0.595, -1, -0.37 and -0.271 for momentum effect, financial contagion, white noise effect, price volatility and Herding Effect respectively. The level of significance was 0.079, 0.01, 0.361, 0.117 and 0.164 for the above stated variables respectively. On Pearson correlation co-efficients all behaviours portrayed a weak or negative correlation with exception of Financial Contagion which had a correlation of about 0.6. in terms of significance, it was established that only the financial contagion variable was statistically significant at 0.01 This could imply that the largest stocks in the NSE are highly interlinked with the outside financial world.

The results from the field analysis produced a model showing the Influence of securities behaviour and performance of FTSE NSE 15 Index. This is shown in tables 4.9 and 4.10. An R square o 0.557 was obtained implying that the dependent variable was influenced by the independent variable to the extent of about 55.7%. The model produced a Durbin Watson value of 1.599, F Value of 2.26, Standard Error Estimate of 0.33 and P value of 0.136. The P value indicated that the results were not statistically significant at 0.05 level of significance. This would imply that momentum effect, financial contagion, white noise effect, price volatility and Herding Effect did not have a statistically significant effect on the performance of the FTSE NSE 15 Index.

The regression model as shown in Table 4.10 was as follows:

$$y = 0.784 + 0.257_{x1} + 0.72_{x2} + 0.186_{x3} + 0.074_{x4} + -0.46_{x5} + 1.41\varepsilon$$

Where:

$y$is the performance of FTSE NSE 15 Index, x_1 is the Momentum Effect, x_2 is the Financial Contagion, x_3 is the White noise effect, x_4 is the Price Volatility and x_5 is the Herding Effect. The p value of the overall model was 0.45 implying that the model was noZ statistically significant in respect to the Influence of securities behaviour and performance of FTSE NSE 15 Index.

Table 4.9: Model Summary on FTSE NSE 15 Index

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Stat					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.746[a]	.557	.310	.32796	.557	2.260	5	9	.136	1.599

a. Predictors: (Constant), HB, FC, WN, ME, PV
b. Dependent Variable: FTSENSE15

Table 4.10: Regression Model on FTSE NSE 15 Index

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.784	1.741		.450	.663	-3.153	4.722
	ME	.257	.234	.274	1.098	.301	-.272	.786
	FC	.720	.330	.551	2.183	.057	-.026	1.467
	WN	.186	.348	.138	.533	.607	-.602	.973
	PV	.074	.329	.060	.225	.827	-.670	.818
	HB	-.460	.266	-.435	-1.728	.118	-1.063	.142

4.6 Influence of Securities Behaviour and FTSE NSE 25 Index

The study also tested the Influence of securities behaviour and performance of FTSE NSE 25 Index. The 25 Index captures the 25 most traded companies in the NSE. A point to note is that the constituent firms of this index keep on fluctuating depending on the forces of demand and supply on companies' stocks. Correlation was found that the correlations were -0.395, 0.141,-0.326, 0.491 and -0.483 for momentum effect, financial contagion, white noise effect, price volatility and Herding Effect respectively. The level of significance was 0.073, 0.308, 0.118, 0.032 and 0.034 for the above stated variables respectively. On Pearson correlation co-efficients all behaviours portrayed a weak or negative correlation. In terms of significance, it was established that only the Herding Effect and price volatility variable were statistically significant at 0.05. The P values were 0.032 and 0.034 for the two variables respectively. This could imply that the most liquid stocks in the NSE are highly influenced by price volatility and Herding Effect.

The results from the field analysis produced a model showing the Influence of securities behaviour and performance of FTSE NSE 15 Index. This is shown in tables 4.11 and 4.12. An R square o 0.548 was obtained implying that the dependent variable was influenced by the independent variable to the extent of about 54.8%. The model produced a Durbin Watson value of 1.599, F Value of 2.26, Standard Error Estimate of 0.24 and P value of 0.146. The P value indicated that the results were no Z statistically significant at 0.05 level of significance. This would imply that momentum effect, financial contagion, white noise effect, price volatility and Herding Effect did not have a statistically significant effect on the performance of the FTSE NSE 15 Index. The regression model as shown in Table 4.12 was as follows:

$$y = 2.83 + -0.321_{x1} + 0.212_{x2} + 0.032_{x3} + 0.388_{x4} - 0.217_{x5} + 1.293$$

Where:

$y$is the performance of FTSE NSE 25 Index, x_1 is the Momentum Effect, x_2 is the Financial Contagion, x_3 is the White noise effect, x_4 is the Price Volatility and x_5 is the Herding Effect. The p value of the overall model was -0.103 implying that the model was noZ statistically significant in respect to the Influence of securities behaviour and performance of FTSE NSE 25 Index.

Table 4.11: Model Summary on FTSE NSE 25 Index

Model	R	R Sqre	Adjstd R Sqre	Std. Error of the Est	Change Stat					Durbin-Watson
					R Sqre Change	F Change	df1	df2	Sig. F Change	
1	.740[a]	.548	.296	.24369	.548	2.178	5	9	.146	1.855

a. Predictors: (Constant), HB, FC, WN, ME, PV
b. Dependent Variable: FTSENSE25

Table 4.12: Regression Model on FTSE NSE 25 Index

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.823	1.293		2.183	.057	-.103	5.749
	ME	-.321	.174	-.466	-1.846	.098	-.714	.072
	FC	.212	.245	.220	.865	.410	-.343	.767
	WN	.032	.259	.032	.124	.904	-.553	.617
	PV	.388	.245	.426	1.588	.147	-.165	.941
	HB	-.217	.198	-.278	-1.094	.302	-.664	.231

4.7: Influence of Securities Behaviour and Overall Performance of NSE

The apex of the analysis was establishing the Influence of securities behaviour and the overall performance of

NSE Indices. The Model Regression shown on Table 4.13 gave an R square o 0.667, Standard error estimate of 0.25, F Critical of 3.612, Durbin Watson Value of 1.199 and a p value of 0.045. The above results implied that the factors studied (securities behaviour) account for about 66.7% of the performance of NSE Indices. The remaining 33.3% could be due chance or error, or other factors not studied in this research. The overall model was statistically significant at 0.05 level of significance implying that securities behaviour have a statistically significant relationship with the performance of NSE Indices. This is despite the insignificant Influence of securities behaviour and performance of singular models as portrayed in the discussions above.
The regression model as shown in Table 4.14 was as follows:

$$y = 1.289 + 0.194_{x1} + 0.679_{x2} + 0.113_{x3} + 0.081_{x4} - 0.491_{x5} + 1.319$$

Where:

$y$is the performance of NSE Indices , x_1 is the Momentum Effect, x_2 is the Financial Contagion, x_3 is the White noise effect, x_4 is the Price Volatility and x_5 is the Herding Effect. The p value of the overall model was 0.354 implying that the model was noZ statistically significant in respect to the Influence of securities behaviour and performance of NSE Indices. The standard error of the model was 1.319

Table 4.13: Regression Model on the Influence of Securities Behaviour and Performance of NSE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Stat					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.817[a]	.667	.483	.24852	.667	3.612	5	9	.045	1.199

a. Predictors: (Constant), HB, FC, WN, ME, PV
b. Dependent Variable: PERFORMANCE OF NSE

Table 4.14: Regression Coefficients on the Overall Performance of NSE Indices

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.289	1.319		.978	.354	-1.694	4.273
	ME	.194	.177	.237	1.095	.302	-.207	.595
	FC	.679	.250	.593	2.715	.024	.113	1.244
	WN	.113	.264	.096	.429	.678	-.483	.710
	PV	.081	.249	.075	.324	.753	-.483	.645
	HB	-.491	.202	-.530	-2.433	.038	-.948	-.034

4.8: Test of Hypotheses

The research was based on five hypotheses that were subjected to tests as highlighted on subtopic 4.4 above. Since the research used both primary and secondary data, it's worth noting that in statistics, figures never lie. Therefore, this implies that where the primary data and secondary data would conflict, the secondary data would take preference but the differences noted to form suggestions for further research. For primary data, market informant responses were tested based on the NSE indices and therefore the researcher tested the five objectives against each component of the dependent variable.

The results from the primary data analysis first produced a model showing the Influence of securities behaviour and performance of NSE 20 Share Index. The R square showed a value of 0.641, Durbin-Watson value was 1.457, F value was 3.219, standard error estimate of 0.44 and P value was 0.061. The P value implied that the results were not statistically significant at 5% level of significance meaning that Momentum Effect, Financial Contagion, White noise effect, Price Volatility and Herding Effect did not have a significant effect on the performance of NSE 20 Share Index. The p value of the overall model was -0.428 implying that the model was not statistically significant in respect to the Influence of securities behaviour and performance of NSE 20 Share Index. Therefore, the hypothesis that there is no significant Influence of investor's behaviour and performance of NSE 20 Share index was not rejected at 0.05 level of significance.

Primary data results from the analysis produced a model showing the Influence of securities behaviour and performance of NASI. From the analysis, the R square showed a value of 0.529, Durbin-Watson value was 1.346, F value was 2.023, standard error estimate of 0.37 and P value was 0.169. The P value implied that the results were not statistically significant at 5% level of significance meaning that Momentum Effect, Financial Contagion, White noise effect, Price Volatility and Herding Effect did not have a significant effect on the performance of NSE 20 Share Index. The p value of the overall multiple regression model was 0.231 implying that the model was not statistically significant in respect to the Influence of securities behaviour and performance of NASI. The null hypothesis that Securities Behaviour do not significantly affect the performance of NASI index was

therefore not rejected at 0.05 level of significance.

The results from the field analysis as responded by the market informants produced a model showing the Influence of securities behaviour and performance of FTSE NSE 15 Index. An R square o 0.557 was obtained, a Durbin Watson value of 1.599, F Value of 2.26, Standard Error Estimate of 0.33 and P value of 0.136. The P value indicated that the results were not statistically significant at 0.05 level of significance. This would imply that momentum effect, financial contagion, white noise effect, price volatility and Herding Effect did not have a statistically significant effect on the performance of the FTSE NSE 15 Index. The p value of the overall multi regression model was 0.45 implying that the model was not statistically significant in respect to the Influence of securities behaviour and performance of FTSE NSE 15 Index. The null hypothesis that the Securities Behaviour do not significantly affect the performance of FTSE NSE 15 index was not rejected.

Inferential results from the primary field analysis produced a model showing the Influence of securities behaviour and performance of FTSE NSE 15 Index that had n R square of 0.548, a Durbin Watson value of 1.599, F Value of 2.26, Standard Error Estimate of 0.24 and P value of 0.146. The P value indicated that the results were not statistically significant at 0.05 level of significance. The p value of the overall multiple regression model was -0.103 implying that the model was also not statistically significant in respect to the Influence of securities behaviour and performance of FTSE NSE 25 Index. The null hypothesis that the Securities Behaviour do not significantly affect the performance of FTSE NSE 25 index was also not rejected at 0.05 level of significance.

The apex of the primary analysis was establishing the Influence of securities behaviour and the overall performance of NSE Indices. The model regression gave an R square o 0.667, Standard error estimate of 0.25, F Critical of 3.612, Durbin Watson Value of 1.199 and a p value of 0.045. The overall model was statistically significant at 0.05 level of significance implying that securities behaviour have a statistically significant relationship with the performance of NSE Indices. This is despite the insignificant Influence of securities behaviour and performance of singular models as portrayed in the discussions above. The P value of the overall multiple regression model was 0.354 implying that the model was not statistically significant in respect to the Influence of securities behaviour and performance of NSE Indices. The hypothesis that the Securities Behaviour do not significantly affect the overall performance of NSE indices was therefore rejected.

In respect to the responses received from the market informants, there is no single index observation that was statistically significant on its own. However, conducting an overall model on the significance of the Influence of the securities behaviour and overall performance of the NSE indices, it was found to be statistically significant.

From the primary data, all indices showed insignificant results for correlation with exception of the correlation between momentum effect and NSE 20 share index. The correlation on the secondary data was statistically significant. The simple regression model showing the Influence of momentum effect and performance of NSE indices was 0.03, meaning that momentum effect had only 3% influence on the performance of NSE indices. The regression model however had a P value of 0.486 meaning it was not statistically significant.

For financial contagion, primary data results showed that the indices produced a mixed results: NSE 20 Share and FTSE NSE 15 indices were statistically significant while NASI and FTSE NSE 25 index produced statistically insignificant results.

Future researchers should concentrate on the glaring conflicts from the market informants. For instance, the informants observed that the indices of NSE 20 Share and FTSE NSE 15 index are statistically contagious with the happenings of the outside world. The other two indices were not statistically significant. For the objective of Herding Effect, the market informants were of the opinion that herd formation is statistically significant with respect to NASI and FTSE NSE 25 but insignificant with respect to NSE 20 Share index and FTSE NSE 15 Index. This is contradicting since one would expect the same behaviour to be manifested in the two objectives. The researcher would suggest that future researchers should widen the primary data collection net by also incorporating investors who have been actively trading.

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Study

In respect to the responses received from the market informants, there is no single index observation that was statistically significant on its own. However, conducting an overall model on the significance of the Influence of the securities behaviour and overall performance of the NSE indices, it was found to be statistically significant.

The objective of the Influence of Momentum Effect on the performance of NSE indices was analysed and all indices showed insignificant results for correlation with exception of the correlation between momentum effect and NSE 20 share index. The correlation on the secondary data was statistically significant. The simple regression model showing the Influence of Momentum Effect on the performance of NSE indices was 0.03, meaning that momentum effect had only 3% influence on the performance of NSE indices. The regression model

however had a P value of 0.486 meaning it was not statistically significant.

For financial contagion, primary data results showed that the indices produced a mixed results: NSE 20 Share and FTSE NSE 15 indices were statistically significant while NASI and FTSE NSE 25 index produced statistically insignificant results. In respect to the objective of white noise effect, it was found to have a statistically insignificant Influence of white noise effect and all the components of NSE indices individually, but the secondary data analysis showed otherwise. For objective four on price volatility, the researcher only tested the hypothesis basing on primary data findings. This is because in respect to secondary data, the same objective was an ingredient in the analysis of objective five of Herding Effect. Results in respect to the Influence of price volatility and NSE 20 Share index, price volatility and NASI and price volatility and FTSE 15 Index were not statistically significant at 0.05 level of significance while that of price volatility and FTSE NSE 25 index was statistically significant at 0.05.

The objective of Herding Effect had mixed reactions in respect to primary data. It was found to significantly affect the performance of NASI and FTSE 25 indices while it did not significantly affect the performance of NSE 20 Share index and FTSE NSE 15 indices.

5.2 Conclusions of the Study

Market informants brought to the attention of the researcher that the stocks comprising the NSE 20 share index are highly interlinked with the global markets and that they also highly influence each other. This could be the reason why at times we see all stocks rising in prices (Bull Run) or falling in prices (Bear Run) without a fundamental reason to justify such behaviour. Drawing from the informants view on the securities behaviour, it can be concluded from the hypothesis tests that it is necessary that all the four indices maintained at the NSE continue running. This is because no single index was statistically significant but putting all the indices and getting their composite scores, the observations turned statistically significant. Each index plays a role that cannot be substituted by existence of another index.

It can be concluded that in respect to the objective of financial contagion, there was a statistically significant presence of financial contagion This could imply that our exchange performance is highly contagious of the happenings surrounding it, which could be local or foreign based events. Our exchange is highly affected by the economic booms or downs, exchange rate fluctuations and even global events like recession. On this objective, market participants gave the impression through their responses that the indices that were highly contagious with the external world were the NSE20 Share and FTSE NSE 15 index while the contagion of the NASI and FTSE NSE 25 indices were not statistically significant in respect to financial contagion. This could be because the best firms are found in the NSE 20 share index and the largest 15 firms by market value are found on the FTSE NSE 15 index-by this, they are also among the best firms. In respect to the objective of price volatility, the market informants gave the impression that the 25 most liquid companies listed in the NSE are significantly affected by the price volatility trends in the index. This is due to the fact that being the most liquid firms, price fluctuations really affect the index performance. This however, contradicts their views on the case of financial contagion above.

For the last objective of Herding Effect, the researcher can draw conclusions that herd formations did not have a significant influence on the NSE 20 Share index and FTSE NSE 15 index. The opposite could be said for the all share index and the 25-share index. This shows that herds are least likely to form where the security numbers all less especially the FTSE NSE15 index which contains the 15 largest companies by market capitalisation and the NSE 20 share index which comprises of the best overall performing companies in the exchange.

5.3 Recommendations of the Study

5.3.1 Recommendations for further Study

Future researchers should concentrate on the glaring conflicts from the market informants. For instance, the informants observed that the indices of NSE 20 Share and FTSE NSE 15 index are statistically contagious with the happenings of the outside world. The other two indices were not statistically significant. For the objective of Herding Effect, the market informants were of the opinion that herd formation is statistically significant with respect to NASI and FTSE NSE 25 but insignificant with respect to NSE 20 Share index and FTSE NSE 15 Index. This is contradicting since one would expect the same behaviour to be manifested in the two objectives. The researcher would suggest that future researchers should widen the primary data collection net by also incorporating investors who have been actively trading.

The study on secondary data found that the FTSE 100 was negatively correlated with the performance of NSE 20 Share index and at the same time Standard & Poors and NSE 20 Share index were positively correlated. This behaviour becomes a puzzle that needs to be resolved. This study therefore would recommend future researchers to expand the exchanges to be studied. They can include more developed markets, semi developed markets and even least developed markets in the studying

5.3.1 Recommendations to policy Holders

The researcher would like to recommend to the Nairobi Securities Exchange and Capital Markets Authority to avail all information relating to the securities market for public usage at free cost. Information is power, and withholding of information for public usage would only make the investors less informed and reduce the potential researchers from conducting more research. During the data collection, the researcher would obtain information at NSE website at a cost of Ksh. 350 per folder (Twelve years with each month as a folder would translate to 350*12*12=Ksh. 50,400) in respect to monthly prices. If one was using that information for academic use, it would be obtained at a 10% that previous cost translating to Ksh. 35 per folder (in the case of this research Ksh. 5040). The catch for academic usage of information would be having the possession of an email address of an academic institution. In addition to this, getting other information from NSE data vendors would cost money and this becomes discouraging for researchers.

On the contrary, in developed markets, getting information will not cost you anything more that the internet costs. It was easier to get organised and up to date information on reputable indices such as Standard & Poors and FTSE 100 faster and easier that getting monthly stock prices at the NSE. The CMA should make laws that will make it mandatory for all companies and the NSE to post information to their public portals free. It was notable that some listed companies such as those listed in the GEMS sector did not have functional websites where one would get financial reports with ease. This would actually imply that some of these firms do not qualify for being quoted in the exchange.

The researcher would also recommend to NSE and CMA to ensure that secondary data statistics are availed for the NASI, FTSE NSE 15 and FTSE NSE 25 indices. This data cannot even be obtained from the data vendors at NSE which slows down the uptake of research on stock markets. By providing official verified data, this will increase information on the Kenya securities markets.

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