INFLUENCE OF STOCK MARKET LIQUIDITY ON PERFORMANCE OF STOCKS OF FIRMS LISTED IN NAIROBI SECURITIES EXCHANGE IN KENYA

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A Research Project Submitted to the Graduate School in Partial Fulfillment of the Requirements for the Master of Business Administration Degree in Finance of Egerton University

EGERTON UNIVERSITY

MAY, 2021

DECLARATION AND RECOMMENDATION

Declaration

This research project is my original work and has not been presented in this university or any other for the award of a degree.

Signature _____ Date 20th April 2021

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CMII/11803/16

Recommendation

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

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DEDICATION

I dedicate this project to my family members for their unconditional love, moral and material support throughout my education. Thank you for giving me the strength to do this.

ACKNOWLEDGEMENTS

I would like to thank God for giving me the strength, knowledge and opportunity to further my studies to this level. I also express a hand of appreciation to my entire family for their moral and material support throughout my entire education process. I would like to thank my classmates for their contribution and critics. I would wish to thank Dr. Fredrick Kalui my supervisor for his immense contribution and guidance in the preparation of this project.

Thank you all and God bless you.

ABSTRACT

The stock market in Kenya plays vital role in intermediation between borrowers and lenders hence uncertainty in the market impacts negatively to the economy. Unfortunately, the stock market has not been performing well. The study, therefore, sought to investigate the influence of stock market liquidity on the performance of stocks of firms listed on the Nairobi Securities Exchange. Specifically, the study aimed to: determine the effect of market depth, market breadth, market resilience and market immediacy on the performance of stocks of firms listed in the Nairobi securities exchange in Kenya. The study was guided by liquidity preference theory, trading cost theory and trading volume theory. A survey research design was applied and the study targeted 65 companies listed on the Nairobi securities exchange and the sample was 20 firms that make up the NSE 20 Share index for a period ranging from 2014-2018. Secondary data was collected using a data collection sheet for a period from January 2014 to December 2018. Monthly data on stock market liquidity aspects and stock performance was obtained from the NSE website. It was then averaged annually. Data was analyzed based on the research objectives using Statistical Package for Social Sciences (SPSS vs 24) and results generated using descriptive and inferential statistics. Descriptive statistics included means and standard deviations to describe the characteristics of the study variables. Inferential statistics included correlation and regression analysis to establish the relationship between the study variables. Hypotheses testing was done using regression results. Findings indicated that individually, market depth, market breadth, market resilience and market immediacy had a direct and significant effect on stock performance. Further, a combination of the stock market liquidity components also yielded a positive and significant effect on stock performance. The study concluded that market breadth best explains stock performance, followed by market resilience, market depth and lastly market immediacy. Based on the findings, the study recommended that the government should find ways of regulating the security market and ensuring that market remains liquid. This will build investors' confidence and lead to improved stock performance. Management of various firms should find ways of raising finance, make best investment and financing decisions using the security exchange. The management should also come up with ways of increasing their liquidity and stabilizing their stocks in order to attract investors. The capital markets development authority should educate people on how the security market operates and how best the public can take advantage of the market to make favourable returns on investments.

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LIST OF ABBREVIATIONS AND ACRONYMS

CMDA: Capital Markets Development Authority

CPI: Consumer Price Index

GDP: Gross Domestic product

GPM: Gross Profit Margin

HHL: Hui- Heubel Liquidity

KNBS: Kenya National Bureau of Statistics

NSE: Nairobi Securities Exchange

NYSE: New York Stock Exchange

OEM: Operating Expenses Margin

OLGM: Overlapping Generations Model

ROCE: Return on Capital Employed

ROE: Return on Equity

SPSS: Statistical Package for Social Sciences

VIX: Volatility Index

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Market liquidity affects share prices and stock returns, these are sentiments that were echoed by the Emerging Markets Committee in their 2007 study of Factors influencing liquidity in emerging markets, in their research they identified that the macro drivers of liquidity are depth of the market, breadth of the market, market resilience and market immediacy. Market breadth is used to gauge the general direction of the stock market based on all traded stocks it presents a more holistic performance measure because it accounts for movements across all stocks. Market depth is the market's ability to sustain large market orders without impacting the price of the security. Market resilience is the period taken to reach equilibrium in the event of significant price fluctuations. Such fluctuations are typically caused by either news flows or large trade volumes. A resilient market is a robust market where prices revert to mean fair value within a short period. Market immediacy is the speed at which trades are absorbed by the market. In a liquid market, trades are executed with a minimal time lag (Arogo, 2017).

Securities exchange plays a key role in the development of an economy, it provides companies with an avenue to raise funds in order to launch or expand their business operations. Securities exchange s are an avenue where individuals and companies can invest their surplus funds to get capital gains on their investments. A government can raise funds to finance their budget deficits at the securities exchange and this is done by floating bonds and treasury bills at the securities exchange. Securities exchange acts as a channel through which foreign direct investment finds its way in a country. Foreign nationals can approach a stock broker and buy the required amount of stock in a company through the securities exchange. In stock markets, only the listed securities are traded and securities exchange authorities include the company names in the trade list only after verifying the soundness of the company and listed companies operate on strict rules of the exchange thus ensuring the safety of investments (NSE, 2018).

According to Ryu *et al*. (2017) if markets are not frictionless, that is if markets are beset by some form of illiquidity, then the main building blocks of standard asset prices are shaken. This is because an investor need not be marginal on a security if trading frictions make it suboptimal to trade it. He showed that trading costs can help explain the empirical disconnect

between consumption and asset returns. He demonstrated that in an economy with frictions the price depends additionally on the security's liquidity. According to Acharya and Pedersen (2019) dynamic Overlapping Generations (OLG) Model for the effect of variations in liquidity on asset prices under risk aversion gave rise to liquidity adjusted capital asset pricing model that showed how liquidity risk is captured by three liquidity betas and how liquidity shocks affect current prices and future expected returns. The model demonstrated that liquidity is persistent over time meaning that if a market is illiquid over time then it is more likely to not recover next month that if a market is illiquid the poor performance will be experienced from one period to the next.

According to Kondor and Vayanos (2019) the market of a stock can be said to be liquid if the shares can be rapidly sold and the act of selling has little impact on the stock's price or to look at the bid/ ask spread. The market liquidity of assets affects their prices and expected returns. It is the stock market that makes the stocks a liquid asset unlike the real estate investment. It is the stock market that makes it possible to sell the stocks at any point in time as the securities exchange enables the valuing of securities based on demand and supply factors. This helps the investors know with certainty at any given point in time the value of their investments.

When there is market illiquidity there tends to be rapid changes in stock prices and this in effect affect investor returns and the turnover of stocks traded. This have a lasting effect on investor confidence as potential investors shy away from entering the market and investing their funds and this have an impact on the economy. The NSE 20 share index is greatly affected by market liquidity as a drop in the index means that the market is going down. The NSE 20 share index is a price weight index calculated as the mean of the top 20 best performing counters and since it's a price-weighted index it's affected by market liquidity (NSE, 2018).

1.1.1 Stock Market Liquidity

According to Amihud *et al*. (2015) stock market liquidity is a market's feature whereby an individual or a firm can quickly purchase or sell an asset without causing a drastic change in the asset's price. Liquidity is the ease of trading security and one source of illiquidity is exogenous trading costs such as brokerage fees order processing costs or transaction taxes or demand pressure and inventory risk. Demand pressure arises because not all agents are

present in the market at all times which means if an agent was to sell an asset quickly then the natural buyers may not be available quickly as a result the seller will sell to a market maker who buys in anticipation of being able to later lay off the position. The market maker being exposed to the risk of price changes while he holds the stock must be compensated for the risk. Another source of illiquidity is the difficulty of locating a counterparty that is willing to trade that particular security or a large quantity of a given security. These costs of liquidity should affect security prices if investors require compensation for beating them.

According to Mamoghli (2014), market breadth is a technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. Market breadth is influenced by the bid-ask spread is the amount by which the ask price exceeds the bid price for an asset in the market. It's a reflection of the supply and demand for a particular asset, it's essentially the difference between the highest price that buyer is willing to pay for an asset and the lowest price that a seller is willing to accept to sell it. Confidence and expectations is a factor that affects the breadth of a market, the mood of investors is key. If they receive economic news that gives optimism then they are more likely to buy shares.

Trading infrastructure is another key element that affects the breadth of a market. Technological advancements in trading systems have a positive impact on market breadth. This makes the trading process easy and the process of completing transactions becomes definite this attracts more clients into the market. Ease of access is also a key contributor to positive market breadth when buyers and sellers can conveniently interact in the trading process and there is ease for foreign investors to participate in the trade this will have a positive impact in the breadth of the market, this is also evident when there are no barriers to trade and both buyers and sellers can easily buy or sell whatever the number of stocks they want without any limitations or conditions this have a positive impact on market breadth (Arogo, 2017).

The market depth is the ability to sustain large market orders without impacting the price of the security. It provides an indication of the liquidity and depth for that security or currency. The higher the number of buy or sell orders at each price the higher the depth of the market. It is the size of the order needed to move the market price by a given amount. Market depth is influenced by tick size and this refers to the minimum price increment at which trades may be

made on the market. Market depth is also influenced by price movement restrictions which inhibit the free exchange of the products they trade but instead restrict price movements in well-intentioned ways (Boonvorachote, 2016).

According to Kahuthu (2017) market depth is also influenced by trading restrictions which include future contracts and options position limits and these prevent market participants from adding to depth when they might otherwise choose to do so. Another determinant of market depth is allowable leverage and this takes place when major markets and governing bodies typically set minimum margin requirements for trading various products. While this may act to stabilize the market place, it decreases the market depth because participants otherwise willing to take on very high leverage cannot do so without providing more leverage.

Market immediacy is the speed at which trades are absorbed by the market. In a liquid market, trades are executed in a minimal time lag. Market structure is a factor that affects market immediacy which affects the supply and demand for immediacy this is evident when the trade takes place in either call options or dealer markets. In call options all market participants are required to either wait or trade ahead of their desired time thus no trader gets immediacy. .in dealer markets all participants are provided with immediacy. Liquidity is also a factor that affects market immediacy and this is precipitated by asynchronous arrivals of buyers and sellers whose continuous interactions into order imbalances and inherent friction that limits liquidity because they are all demanding quick transactions (Boudoukh *et al*., 2016).

According to Acharya and Pedersen (2019) the number of transactions impacts market immediacy, the higher the number of transactions per time unit the higher the levels of immediacy. The asynchronous arrival of buyers and sellers grants the market maker transitory pricing power concerning investors demanding immediate execution. According to (Demsetz, 1968) he argued that transaction costs impact liquidity there are order imbalances in the market which creates a role for an intermediary or market maker who supplies liquidity by standing ready to transact when order imbalances arise. The market maker's charge for providing immediacy services represents a potentially important component of transaction costs.

Market resilience according to Adrian *et al*. (2017) is the period taken to reach equilibrium in the event of significant price fluctuations such fluctuations are typically caused by either news flow or large trade volumes. A resilient market is a robust market where prices revert to mean fair prices within a short period. Information asymmetry is an important determinant in the pricing error correction process. Higher levels of information asymmetry should arguably make value traders more cautious and increase their uncertainty about fundamental values this makes the process of pricing correction less responsive and thereby reduce resiliency. Transaction size affects market resilience such that large average transaction size is potentially related to a larger average inventory imbalance of dealers, and may introduce additional pricing errors caused by a dealer's inventory control. This can make pricing error last longer and thereby reduce market resilience.

According to Andreu *et al*. (2015) realized spread reflects the gross trading revenue of liquidity suppliers or the net transaction cost of traders and it is related to the inventory risk of liquidity suppliers. Realized spread is negatively related to resiliency since higher realized spreads correspond to higher transaction costs. According to Bookstaber (2015) transaction frequency impacts market resilience such that if one stock is traded heavily and frequently in the market more traders will keep more watch on it and if there is a temporary pricing error it will be noticed by value traders and be eliminated by their profit-seeking behaviour as soon as possible thus the transaction frequency is positively related to the stock's resiliency.

1.1.2 Performance of Stocks

Performance of stocks of firms listed in NSE is measured by indices; the two indices used to measure the performance of the security exchange are the NSE 20 share index and NSE 25share index. The NSE 20 share index is a price weight index calculated as the mean of the top 20 best performing counters. The constituent companies are selected based on a weighted market performance during the period under review. The NSE 25 share index is a market capitalization weighted index designed to represent the performance of Kenyan companies listed on the NSE providing investors with a comprehensive and complementary benchmark to measure the performance of the Kenyan securities market. For purposes of getting these indices the securities are grouped into sectors: commercial and services sector, banking sector, manufacturing and allied sector, energy and petroleum sector, insurance sector, telecommunication and technology sector, investment sector and investment services sector (Lakhani, 2019).

The performance of stocks of firms listed in the exchange can be evaluated using financial measures and the most common approach to measuring performance is to calculate its total return to shareholders over time (Tseng *et al*., 2018). This approach has severe limitations, however because over short periods total returns to shareholders embody changes in expectations about a company's future performance more so than its actual underlying performance and health. This measures the gains made by a given stock over a given period. It compares the stock price of the stock at the beginning of the period and the stock price at the end of the period. These are core to the operations of a company as it not only boosts the reputation of a company but it can attract more customers to use the products of a company thus making attractive its stocks at the exchange.

The performance of stocks of firms listed in an exchange can also be evaluated by financial ratios. The performance of a company's stock can be determined by examining the payout ratio. This gives insight into a stock's dividends performance. The dividend payout ratio compares dividends per share to Earnings per Share. The higher the payout ratio, the more money the company invests in dividend payments rather than expansion. The payout ratio is important because it tells investors how much of the company's profits are being given back to the investors. Companies with lower payout ratios should experience stronger earning growths (Ahmed, 2009).

The performance of the stock of a firm can be evaluated by analyzing the Earnings per Share (EPS). EPS serves as a measure of how much of a company's net income can be allocated to each share of stock and is considered the most important factor to determine share price and firm value. If a stock's EPS is significantly higher than its stock price it can be considered a solid investment, since it is likely that the stock's value will increase in the future, it is a useful measure of profitability and management's performance. It shows how much money the company is making for its shareholders and not only due to changes in profit but after all the effects of issuance of new shares (Islam, 2014) .

Return on investment (ROI) as demonstrated by Tan *et al*. (2018) is a method that can be used to analyze the performance of stocks of a firm listed in the security exchange. Return on investment is a measurement of the efficiency of converting investment into profits. It compares the total income generated by investment to the capital outlay required upfront. This is calculated by the gains you less the cost and divide by the cost. Performance of stocks

according to (Stringfello, 2010) is affected by factors such as the overall health of the economy where during economic downturns many stock experience price drop. Condition of the stock market where during a bear market investor avoid stocks and this decrease in demand drives prices of stocks lower. The final factor affecting stock performance is the health of the company issuing the stock where poor earnings by the company compels the investors to sell the stocks and drive the price lower thus the performance of a company's stock is tied to the performance of the company.

1.1.3 Nairobi Securities Exchange

Security exchange is where stockbrokers and traders can buy and sell securities. Securities traded on a securities exchange include stock issued by listed companies, united trusts, pooled investment products, bonds and derivatives. To be able to trade securities on a securities exchange the security must be listed there and trade on an exchange is restricted to brokers who are members of the exchange (Ann, 2015). A securities exchange provides companies with the facilities to raise capital for expansion through selling shares to the investing public. Initial public offerings of stocks and bonds are done in the primary market and subsequent trading done in the secondary market.

The NSE is the principal securities exchange for Kenya. Besides equity securities, the NSE offers a platform for the issuance and trading of debt securities it is a full member of the world federation of exchanges. It was founded in 1954 and it offers a world-class trading facility for local and international investors looking to gain exposure to Kenya and Africa's growth. Not only does the securities exchange provide the much-required funds for boosting the business but also provide a common place for stock trading. The government also raises funds to finance its budget deficit by issuing treasury bills and bonds at the securities exchange. It demutualized and self-listed in 2014 (NSE, 2018).

Security exchanges is a reliable barometer to measure the economic condition of a country, these sentiments are echoed by the efficient market hypothesis theory as developed by Thaler (2017) in strong form efficiency share prices reflect all information public and private and no one can earn excess returns and this is reflected in the securities exchange where every major change in the country is reflected in the prices of shares. Investing in shares is open to both individual and institutional investors who are free to invest large or small stock because a person buys the amount of shares that he or she can afford. For investing in the stocks or to

trade in the stock the investor has to go through brokers of the stock market who execute the sell or buy orders of the investor and settle the deal to keep the stock trading alive.

In NSE, securities are bought and sold and in this process of disinvestment and reinvestment helps to investment in most productive investment proposal and this leads to capital formation and economic growth. Investors when making investment decisions in the securities exchange need to know if the securities exchange is up, down or unchanged. They also want to know how far the general price movement proceeded. This information is given by the index and in the Kenyan securities exchange we have the NSE 20 share index which shows by its variation the changes in magnitude and was originally developed for measuring the effect of change in prices. They are used to feel the pulse of the economy and in fact they are described as barometers of the activity the purpose of an index is to give a quick, overall picture of changes taking place. An ideal stock price index is one that can measure fluctuations at the stock market more satisfactorily. It is especially desirable that the index should compare with as great a degree of scientific accuracy as is as practicable the current level of any market at any time with past levels (Marriott *et al*., 2015).

1.2 Statement of the Problem

The stock market plays a significant role of intermediation between borrowers and lenders hence uncertainty in the market impacts negatively to the economy (Kirui, Wawire & Onono, 2014). However, performance of the NSE has been declining. Despite posting a profit before tax of Ksh 233.1 Million in 2016, it was still a 39% decrease from Ksh. 381.5 Million in 2015. The profit before tax of Ksh 381.5 Million posted in 2015 was also a 13.6% decrease from Ksh. 441.8 million posted in 2014. Further, the NSE 20 Share Index recorded a decline of 20.9% from 5113 points on close of December 2014 to close at 4041 points at the close of trading in December 2015 and a further decline of 21.15% from 4,041 points at the close of December 2015 to close at 3,186.21 points at the close of the trading day in December 2016 (Mutulis, 2018). There is a challenge of poor stock performance of firms listed in the NSE.

Previous studies have looked at the relationship between stock market liquidity and stock performance. However, these studies present several knowledge gaps. Studies such as Caprio (2014), Chen (2015), Dooley and O'Sullivan (2016), Liu (2017), Caplin and Martin (2017), and Wu and Xu (2018) presented contextual gaps since they were conducted in different contexts from the current study. The contextual differences make the findings and conclusion

of the investigations not applicable to the current study. In particular, the mentioned studies were conducted in other countries and not Kenya. Further, studies such as Arogo (2017), Musyoki (2017), Al-Abbadi and Abdul-Khaliq (2017), and Tarza Sokpo *et al*. (2017) indicated conceptual gaps since they did not focus on both stock market liquidity and stock performance concepts. Instead, these studies investigated only one of the concepts. Kahuthu (2017) evaluated effects of stock market liquidity on stock returns of companies listed in the Nairobi Securities Exchange, but only concentrated on two aspects of stock market liquidity, that is, market depth and width while there are other aspects of market liquidity that may be important in explaining performance of stocks. It is in the backdrop of the aforementioned knowledge gaps that the current study sought to investigate the influence of stock market liquidity on stock performance of firms listed in NSE, Kenya.

1.3 Objectives of the Study

1.3.1 General Objectives

The general objective of the study was to establish the influence of stock market liquidity on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

1.3.2 Specific Objectives

In order to achieve the overall objective, the specific objectives of the study were to:

i. To determine the effect of market depth on stock performance of firms listed in Nairobi Securities Exchange, Kenya
ii. To determine the effect of market breadth on stock performance of firms listed in Nairobi Securities Exchange, Kenya
iii. To determine the effect of market resilience on stock performance of firms listed in Nairobi Securities Exchange, Kenya
iv. To determine the effect of market immediacy on stock performance of firms listed in Nairobi Securities Exchange, Kenya
v. To determine the combined effect of stock market liquidity on stock performance of firms listed in Nairobi Securities Exchange, Kenya

1.4 Hypotheses of the Study

H_{01}: Market depth has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

H_{02}: Market breadth has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

H_{03}: Market resilience has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

H_{04}: Market immediacy has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

H_{05}: Stock market liquidity has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

1.5 Justification of the Study

The study will be of importance to several groups. The study will enable the government to efficiently regulate the security exchange as price volatility is a key concern for business and for current and potential investors and also in an attempt to safeguard the investments of all the investors. The government can use this study to come up with ways to ensure the market is always liquid and that investor confidence is high at all times.

The study will also be useful to Capital Markets Development Authority which is the policymaker for trading at the NSE in ensuring that investor confidence is boosted and all the participants in the market and their hard-earned investments are well safeguarded and protected.

Further, the study will enlighten the management of various companies seeking to raise finance on how to best make investment decisions, financing decisions using the security exchange. The security exchange is a source of finance for public limited companies and this research can broaden their knowledge on how best to raise finance using the securities exchange.

In addition, the research will be of use to the general public as it provides education on how the security market operates and how best the public can best take advantage of the market to make favourable returns on investments as well as become more aware and informed when making investment decisions at the individual level.

Finally, the study is a significant source of literature on the importance of stock market liquidity for future researchers or those in the academic field. It adds value to the existing

body of knowledge as it recommends ways for improvement of financial performance. Furthermore, this research serves as a stepping stone for newer research on financial performance.

1.6 Scope and Limitations

The study focused on stocks of 65 listed companies in the NSE. The study covered the period from January 2014 to December 2018. Secondary data was obtained from the NSE and the Kenya National Bureau of statistics. The study evaluated the influence of stock market liquidity on performance of stocks of firms listed in the NSE in Kenya.

The study encountered several limitations. Secondary data is always historical and may not represent the current situation of the firms. To mitigate this challenge, the researcher used the most current data as possible depending on availability. Further, the study did not incorporate the views of stakeholders, especially, the management of the listed firms since only secondary data was used. Besides, the study only focused on 20 firms representing all the sectors of the NSE that make up the NSE 20 share index. The findings therefore may only apply to the 20 firms and may not be generalized to other firms.

1.7 Definition of Terms

Liquidity: describes the degrees to which an asset or security can be quickly bought or sold in the market without affecting the asset's price.

Market Breadth: is a technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining. In this study, it was measured as annual spread.

Market Depth: it is the ability to sustain large market orders without impacting the price of the security. It provides an indication of the liquidity and depth for that security or currency. The higher the number of buy or sell orders at each price the higher the depth of the market. In this study, it was measured as annual turnover ratio.

Market Immediacy: it is the speed at which trades are absorbed by the market. In a liquid market trades are executed in a minimal time lag. In this study, it was measured as annual stock Market capitalization.

Market Resilience: the period of time taken to reach equilibrium in the event of significant price fluctuations. Such fluctuations are typically caused by either news flow or large trade volumes. A resilient market is a robust market where prices revert to mean fair

prices within a short period of time. In this study, it was measured using Hui- Heubel Liquidity ratio.

Market Volatility: this means that the price of the security can change dramatically over a short time period in either direction. A lower volatility means that the security's value does not fluctuate dramatically and tends to be steadier.

Stock Market Liquidity: refers to the extent to which a market such as a country's stock market or a city's real estate mark*et al*lows assets to be bought and sold at stable prices.

Stock Performance: is the measure of a stock's ability to increase or decrease the wealth of its shareholder. Performance is typically measured by its fluctuation in price, when the stock price increases the stock shows good performance conversely a decrease in price is a poor performance. In this study, it was measured as annual stock return.

Stock: it is a type of security that signifies proportionate ownership in the issuing corporation. This entitles the stockholder to that proportion of the corporation's assets and earnings.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This section of the study sought to find out what others had written about the subject matter. The section primarily dealt with what other authors had done regarding the subject matter. It comprised theoretical review, conceptual framework, and empirical review, research gaps and summary of literature review.

2.2 Theoretical Review

Theoretical framework is a collection of interrelated concepts; it guides the research and determines what statistical relationships to look for. It provides a particular perspective or lens through which to examine a topic (Osanloo & Grant, 2016).

2.2.1 Liquidity Preference Theory

Liquidity Preference Theory was put forward by Keynes (1936) and assumes that more liquid investments are easy to sell fast for full value. According to Keynes there is desire to hold asset in liquid form to take advantage of market movement regarding the uncertainty and expectations of future changes. The cash held under speculative motive is to make speculative gains by dealing in securities and bonds whose prices and rates of interest fluctuate. It goes further to say that interest rates on short term securities are lower because investors are not sacrificing liquidity for as long as they would be on medium-long term securities (Komine, 2016).

For bonds which are traded at the security exchange if the prices are expected to fall in future, people will sell bonds to avoid making capital losses and hence cash becomes more attractive than bonds, thus at low interest rate liquidity preference is high and at high interest rates securities are attractive and these two scenarios affect the operations of the securities exchange. According to Asensio (2017) there is a relationship between asset demand, bond market and expectations, that is, bond prices are inversely related to interest rates because when interest rates fall bond prices rise and when interest rates rise bond prices fall.

Liquidity preference theory as put forward by Keynes is relevant to the study as it demonstrates market immediacy as a component of market liquidity since it suggests that investments can be easily transferred into cash at a good rate and in a timely fashion thus

when making investment decisions investors can be bought or sold quickly without their price being impacted by the transaction and thus positively impact on the stock market performance.

2.2.2 Trading Cost Theory

This theory was put forward by Amihud and Mendelson (1986) and looks at trading costs that are as a result of trading stock. Focusing on how costs associated with trading in the securities exchange affect stock prices, the author resolved that stocks with a huge margin of bid-ask spreads had higher returns. Another key finding was that there exists a positive relationship between expected stock returns and alternative proxies for individual liquidity levels. Besides, trade associated costs can either increase or decrease as a result of variations in time of transactional cost.

The trading cost theory is relevant to the study as it shows how market width as a dimension of liquidity is related to stock returns. The theory gives a theoretical prediction that market width is positively related to stock return and the overall performance of the securities exchange which was the basis of study's hypothesis testing on the effect of market width on stock performance.

2.2.3 Trading Volume Theory

Trading volume theory was put forward by Jonathan (1986) and is developed based on the assumption that market agents frequently revise their demand prices and randomly encounter potential trading partners. Trading volume is the amount of shares traded in a particular time interval which can be daily, weekly monthly or annually or any other time interval which is appropriate for analysis. Both volume and prices are driven by underlying economic forces and thus convey important information about the working of the market. According to Fan *et al*. (2018) trading volume is an important aspect of the economic interactions in financial markets amongst various investors.

According to Lo (2010), the interaction between prices and quantities in equilibrium yield a rich set of implications for any asset pricing model when an explicit link between economic fundamentals and the dynamic properties of asset returns and volume are derived. He further suggested that the presence of market frictions such as transaction costs can influence the

level of trading volume and serve as a bridge between the market microstructure literature and the broader equilibrium asset pricing literature.

The trading volume theory is relevant to the study as it demonstrates the importance and an insight of market depth as a dimension of liquidity and how it affects the performance of the securities exchange. The theory also shows the role played by information asymmetry in causing price volatility in the security exchange.

2.3 Empirical Literature

2.3.1 Market Depth and Performance of Stocks

Market depth is the ability to sustain relatively large market orders without impacting the price of that security (Tsai & Tsai, 2018). It is closely related to liquidity and volume. If the stock is extremely liquid and has a large number of buyers and sellers purchasing a bulk of shares typically will not result in noticeable price movement. Depth of the market measure provides an indication of the liquidity and depth for that security. The higher the number of buy and sell orders at each price the higher the depth of the market hence used to understand the bid/ ask spread of that security.

Liu (2014) studied the effect of market depth on the performance of stock of companies listed in the NSE. Secondary data was used for this study and a sample of five banks out of the 11 banks listed in the NSE were examined for this study and it was discovered that securities with strong depth of a market will usually have a strong volume and will be quite liquid, allowing traders to place large orders without significantly affecting the market price. Yet those securities with poor market depth could be moved if a trader places a large buy or sell order. This has a direct impact on the NSE 20 Share index as it directly affects the volume of stock traded.

Marvasti and Lamberte (2016) examined the importance of market depth in trading of securities at the NSE, a sample of 4 out of 6 firms in the Agricultural sector were examined for this study and primary data was used for the study. It was discovered that information on market depth is useful to traders because it shows not only where prices are now but where they are likely to be in the near future. Market depth displays information about the prices at which traders are willing to buy or sell a particular trading symbol at a single point in time.

In the global perspective Liu (2017) did a comprehensive study on the causal relationships between trading volume, stock return and illiquidity. The study used a sample of 20 firms listed in the Chinese Stock Market for a period ranging from 2012-2015. A simulation based method was used to estimate the confidence intervals and in the findings the following causal relationships were observed; causality is stronger in short horizons and drops down as the horizon increases; causalities run from return and volume to illiquidity; stock return and trade volume have mutual causal relationships but the return have a stronger effect on trade volume.

These findings were also supported by several other studies in the emerging markets that found a positive statistical relationship between market liquidity and expected returns. In a study on the relationship between liquidity and the returns of stock at the Nairobi securities exchange, Koech (2014) analyzed data from 27 emerging markets from 2014-2017 using both cross-sectional and time series data techniques. The author explained that the positive link between liquidity and returns could be explained by the low global integration in most emerging markets. As a result of the poor integration of the emerging markets, absence of liquidity in the markets will not be a source of risk hence the cross-sectional returns will not decrease in less liquid markets.

In South Africa, Chipaumire and Ngirande (2014) researched market depth effect on the performance of the security exchange, panel data was used for this study and he examined the performance of the Johannesburg Securities exchange for a period ranging from 2009-2014. The study concluded that 75% of the firms observed displayed a strong positive relationship between a favorable market depth and positive performance of the Johannesburg Securities exchange. The live FTSE/ JSE indices rose as a result of high buy and sell orders that were coming through and the prices of stocks remained unchanged, this boosted the activities of the securities exchange.

2.3.2 Market Breadth and Performance of Stocks

Market breadth according to Chen (2015) is used in technical analysis to examine stocks of firms advancing relative the stocks of firms declining; it attempts to gauge the overall direction of the overall market. Positive market breadth occurs when more companies are moving higher than are moving lower and it is used to suggest that the bulls are in control of the momentum. Conversely, a disproportional number of declining securities is used to

confirm bearish momentum. A positive market breadth shows that the stocks of listed companies are rising while a negative market breadth shows that the stocks of the listed companies are falling.

In the developed economies, Chen (2015) did a study on how breadth of a market affect stocks performance and his study centered on stocks listed on the (NYSE) New York Stock Exchange is considered the most active and biggest securities exchange in the world. The duration of the study was from 1995-1999 and primary data was used for this study. His findings revealed that when breadth is low, that is, when few investors have long positions, these signals that short sales constraint is binding tightly and that prices are high relative to fundamentals. Thus, reduction in breadth should focus lower returns.

In China, Caplin and Martin (2017) did a survey of the breadth of firms listed in the Chinese stock exchange between periods of 2010-2015. Controlled observation was used for this study and the researcher identified the specifics of the research and regression model was used to analyze the data that was derived from the observation, the findings revealed that when large numbers of investors are after the same commodity the commodity quickly becomes overvalued. In other words, ownership breadth measures popularity amongst noise traders who are able to move prices. Equal weighted breadth changes contemporaneous correlation with a stock's return is negative. Therefore, retail investors may be causing misevaluation by leaning against price movements and delaying full price adjustments to fundamental news.

In America, Wu *et al*. (2018) studied the influence of market breadth on investor returns on stocks listed in the Chicago stock exchange. The study used secondary data and commenced in 1998 and ended in 2001. The findings revealed that in a market with short sales constraints when an investor holds no long position in a stock, he is likely to have negative information about the stock's fundamental value. Due to short sales constraints, this negative information is only partially incorporated into the stock's price. Thus, when ownership breadth is low there is a large amount of negative news missing from the stock's price and the stocks future returns will be low. This makes the stock least attractive thus the performance of the securities exchange as investors will seek other options.

After the end of the global economic crisis, Dooley and O'Sullivan (2016) evaluated the effect of market breadth on the returns of investors during the global economic crisis. The research covered the period from 2007 to 2010 and primary data was collected. A sample of 30 firms listed on Wall Street was used and the findings concluded that the FTSE 100 of firms declined steadily during the global period as the breadth of all the stocks observed had a downward trend and this resulted to the poor performance of stocks listed and Wall Street in particular had very dismal performance.

In the local perspective, Marriott *et al*. (2015) in their management research project measuring market performance of the Nairobi securities exchange and he used a sample of 10 firms listed in the securities exchange and observed their performance of 5 years ranging from 1986-1991. His study intended to find out the extent at which breadth of the market affected the performance of stocks at the Nairobi Securities Exchange. He used a regression model to analyze his data and his findings were that 94% of all the firms observed when their stocks tended to rise the NSE 20 Share index rose as well. The study concluded that there was a strong positive relationship between positive market breadth and favorable market performance.

2.3.3 Market Resilience and Performance of Stocks

According to Peron (2014) market resilience is the period of time taken to reach equilibrium in the event of significant price fluctuations. Such fluctuations are typically caused by either news flow or large trade volumes. A resilient market is a robust market where prices revert to mean fair prices within a short period-you have made this grammatical mistake countless number of times. When the stock market rises and falls more than one percent over a sustained period of time, it is called a volatile market. Financial markets can be viewed as high complex evolving systems that are very sensitive to economic liabilities.

In his study Chakraborty (2016) did a survey on the effect of market resilience on security returns, the objective of the study was to examine if market resilience after an adverse shock in the market has an effect on the performance of securities leading to volume of shares traded at the Chicago stock exchange. A Sample of 30 firms was selected for this study and the performance of the shares was observed for a 5-year period between 2008- 2013. Panel data for the selected firms were generated and analyzed using ordinary least squares as a method of estimation. The results showed that market resilience means that a security value

can potentially be spread out over a larger range of values. This means that the price of the security can change dramatically over a short time in either direction. A lower volatility means that the security value does not fluctuate dramatically and tends to be more stable. These kinds of trading atmosphere are preferred by investors with a long investment horizon is widely traded and thus increase the volume of shares traded.

After the 2008 crisis Afzal (2015) did a study after the global economic crisis in 2009, he researched on risk tolerance of investors, aim of the study was to find out the risk appetite and how much an investor is willing to risk in the securities exchange. This study was necessary after billions of dollars were lost as a result of the crashing of stock markets during the securities exchange. The study used secondary data and performances of three biggest securities exchange s in the world were examined for four years between 2010- 2014. The securities exchanges that were used for this study was the National stock exchange of India, and the Pakistan stock exchange. The study revealed that risk and reward go hand in hand. The study showed that despite many people losing their hard-earned money the investors were upbeat and believed no pain no gain. The investors believed that all forms of investment carried some degree of risk. The study believed that due to low market liquidity during and after the global economic crisis investors shied away from the securities exchange at inertia leading to the dismal performance of these securities exchange s but gradually began investing again in the securities exchange.

Budd (2018) studied the determinants of risk tolerance concluded that in a market where prices are volatile financial risk tolerance increases the investors' vulnerability to choosing a risky investment. The researcher asserted that risk tolerance is the variability in investment returns that an investor is willing to withstand and this can be swayed by the level of market resilience or how quickly a stock can be able to be stable after a period of adverse shocks. The study classified two types of risk investors aggressive who tended to be more market savvy with deep understanding and conservative risk tolerance who are willing to accept little or no volatility to their investment. Regarding the market volatility the risk appetite of the investors will have an impact on the amount of securities bought or5 sold and this will impact the performance of the securities exchange.

In London, Caprio (2014) did a study on the relationship between market resilience and the performance of the stocks in the London stock exchange. The study used a sample of 25

companies quoted in the London securities exchange and he used secondary data of performance of these stocks for a period of 3 years from 2008- 2011. The study was necessitated by the Global Economic Crisis of 2008 and regression model was used to analyze the data collected for this study. His findings indicated that there is a strong relationship between market resilience and positive performance of stocks. The study concluded that many investors realize that stock markets is a very volatile to invest their money and that it's this volatility that generates the market returns and it takes the strong market resilience to make a securities exchange vibrant especially after a period of calamity in the trading arena. According to Rowan, volatility tends to decline as the stock market rises and increases as the market falls when volatility increases risk increases and returns decrease.
In Kenya, Musyoki (2017) researched the effect of exchange rate volatility on stock market returns at the Nairobi securities exchange. The objective of the study was to establish the causes of stock market volatility and its effects on stock market returns and how resilient the Nairobi Security Exchange was after the general elections. The study used descriptive research design and secondary data obtained from the Central Bank of Kenya was collected from a period of January 2017- December 2017. The sample for this study was 30 firms listed on the Nairobi securities exchange. His findings indicated that information coming into the market, tax, interest rates and inflation were the major source of market volatility as these greatly affected the VIX (volatility index).The results showed time varying in stock market returns and from the asymmetric model bad news has larger impact on stock volatility than good news in the NSE and that the NSE was resilient and any negative news coming in the market had effects in the trading environment only in the short run.

2.3.4 Market Immediacy and Performance of Stocks

Market immediacy according to Broto and Lamas (2016) is the speed at which trades are absorbed by the market. In a liquid market, trades are executed with a minimal time lag. For a market to instill a high level of confidence to the investors it should be able to absorb trades in the shortest time possible without causing major upward or downward swings in the prices of stocks. If the investor has confidence in the immediate and near future economy and his finance then the investor will spend more than he or she will save. When confidence is high, investors will invest more and when confidence is low the invest will save more. This trend has a direct effect on the performance of the NSE.

Basana (2017) studied how Stock Markets reacted to the election of President Obama in 2008 used secondary data obtained from the Indonesian Stock exchange. The study aimed to determine the period of time it will take for stocks to absorb the negative shocks it had suffered in the economic crisis as new policies and a popular government in inception and what was causing markets to improve after the global economic crisis. The findings showed that overconfidence is one of the most robust findings in the field of behavioral science, and is associated with robust trading and risk taking among market participants. The study showed that in aggregate, higher trading activity occurs when investor confidence soars, particularly for smaller stocks. Additionally, investors tend to have a higher risk appetite when confident as shown by increased investment in small stocks with higher risks.

On the regional front, Wanzala (2018) did a study on how to regain market confidence in an era of economic uncertainty. The study was necessitated by the dismal performance of the securities exchange as a result of previous losses incurred by investors at the securities exchange as a resulted of corruption and mismanagement and manipulation of trading activities at the securities exchange . The study focused on a sample of 20 firms listed at the Abuja Securities exchange from a period of January 2012- December 2012 a period when the Nigerian securities exchange was not doing well. Secondary data on share prices and volume of stocks traded was used for this study. Regression model was used to analyze the data that was collected for this study. The results showed that investor confidence was low in that period of the study and that there was a positive relationship between the investor confidence and the performance of the securities exchange. When the investors had high market confidence the securities exchange had positive performance unlike when the investors didn't have confidence the market.

On the local front, James (2014) did a research on the effects of elections on stock market returns at the Nairobi securities exchange. The objective of the study was to find out how elections impacted consumer confidence over time at the securities exchange and the willingness of investors to place their money in securities exchange during and immediately after election periods. The study used secondary data on shares and volume of stocks traded after the 2007 and 2013 general elections in Kenya. The findings revealed that performance of the stock market is influenced by a number of factors among them government activities and general performance of the economy. This has a direct influence on the investor confidence and the amount that an investor is willing to invest in a security exchange.

2.3.5 Stock Market Liquidity and Stock Performance

In Jordan, Al-Abbadi and Abdul-Khaliq (2017) investigated the relationship between inflation rate and stock market performance through Unit root test, co-integration test and finally error correction model in the time period between 1978 and 2015. The findings indicate that the variables are non-stationary at their level and they become stationary in their first difference. Two co-integration equations are showing the long run relationship between variables. There is short and long run relationship as indicated by the statistically significant coefficient in the error correction model. Also based on impulse response the study finds that any positive shock in trading value makes an increase in GDP deflator. However, the reviewed study was not conducted in Kenya and therefore its findings may not be generalized in the local text.

The relationship between stock liquidity and firm efficiency was investigated by Singh *et al*. (2015). Liquidity has a huge effect on the results of companies listed on the stock exchange. People should expect more funding from absorbing buyers on the market when there is a strong supply of trading stocks. The top ten continuously listed NSE indices from 2005 to 2014 were used as the study's sample. The ordinary least sequence and general linear models were used to analyze the relationship between stock market liquidity and firm results. On the dependent variable Tobin's Q, the results revealed a positive relationship between independent variables, return, and age. As measured by Tobin's Q, increased stock market liquidity was associated with higher firm efficiency. However, the previous study used Tobin's Q to calculate firm efficiency, while the current study used annual stock return.

In a study conducted in Vietnam, Ha and Vinh (2017) looked at how stock liquidity affects firm investment. Over a long period of time, the partnership was checked in a group of Vietnamese companies listed on the stock exchange. For panel data analysis, the GMM estimator was used as an econometric technique. The aggregated and disaggregated metrics were used to proxy for firm investment. Market liquidity was used as an input by corporate managers when making investment decisions, according to the findings. Regardless, the research was conducted in the sense of Vietnam.

In Nigeria, Tarza *et al*. (2017) evaluated the effect of inflation on stock market returns on the Nigerian stock exchange market, employing a volatility modeling approach. Using monthly data on stock market returns and consumer price index inflation rate, the paper employed

GARCH and EGARCH volatility modeling techniques for analysis. The study found that CPI inflation is not an important variable in explaining stock market return volatility in Nigeria. The EGARCH model did not find existence of asymmetry in the stock return series; that is good news and bad news have identical impact on stock returns in Nigeria. The GARCH model show high persistence in the stock returns series, though a shock to stock returns has only a temporary impact.

Boloupremo (2020) investigated the relationship between liquidity and stock returns in the Nigerian Stock Exchange by looking at the impact of market liquidity on stock returns. For the period 1985-2015, a vector auto-regression model was used to investigate the effect of liquidity indicators such as trading volume and turnover on stock returns. The higher the market liquidity (trading volume and turnover), the higher the stock index returns, according to empirical findings. After adjusting for market size, a positive relationship between liquidity and stock returns of firms listed on the Nigerian stock market was established during the period studied. However, the study was conducted in Nigeria, which is a different environment from that of Kenya.

In Kenya, Vena (2014) analyzed the effect of inflation on stock prices at the Nairobi Securities Exchange. Particular attention was paid to the effects of inflation on various stock market performance indicators, in terms of market activity and liquidity. An empirical investigation was conducted using monthly data on selected key market indicators from the NSE from the period 1998-2013 and the correlational design method of estimation applied using a regression model to test the effects of inflation on stock market returns. It was revealed that the stock market returns were positively correlated to the rate of inflation.

2.4 Summary of Literature Review and Research Gaps

This section of the study presented a theoretical review, conceptual framework and empirical studies in line with the objectives of the study. The theoretical review used theories that were deemed relevant to the area of study such as, liquidity preference theory, trading cost theory and trading volume theory. While the conceptual framework linked components of market liquidity and their possible influence on the performance of the stocks. This was followed by an empirical review of related studies and their findings. The financial theories and empirical reviews have revealed that there is a relationship between market liquidity and stock performance.

In a study on the relationship between stock market liquidity and economic growth in Kenya (Arogo, 2017) did a study on how stock market liquidity impacts economic growth in Kenya. This study focused on the macroeconomic variables and how they are affected by the stock market liquidity. From survey of relevant literature, it has been found that the study focused on economic growth in Kenya but not the performance of the securities exchange. The current study therefore intended to fill these pertinent gaps in literature by assessing the effect of stock market liquidity on the performance of stocks in the Nairobi Securities Exchange.

Marriott *et al*. (2015) did a management research project measuring stock market performance of the Nairobi Securities exchange. The study showed the key variables that are looked at when evaluating the performance of a securities exchange like share turnover and investor returns and investor confidence but his study failed to show the role played by market liquidity and price volatility in the performance of securities exchange s. Market liquidity and price volatility go hand in hand determining investor behavior and the overall performance of the securities exchange. From the above summarized literature reviews there are only few researchers who have done on the effect market liquidity on the performance of Nairobi Securities Exchange. The current study addressed the gaps by showing how stock market performance is affected by liquidity.

Kahuthu (2017) conducted a study on the effect of stock market liquidity on share returns of companies listed on the Nairobi Securities Exchange. The research showed the roles played by market width and depth on the performance of stocks of companies listed in the Nairobi Securities Exchange. However, the study failed to underscore the importance of other key variables such as market confidence and market volatility on the roles these two play in the performance of stocks and the security exchange itself. It was evident that research in the area of market liquidity on performance of securities exchange has not been done in a more comprehensive approach. Because of this study research gap is demonstrated by scarcity of empirical studies on market liquidity on the exchange performance and how the NSE 20 share index, the study sought to fill out the gap and emphasis was made on the exchange performance and the NSE 20 share index.

2.5 Conceptual Framework

A conceptual framework refers to a group of concepts that are broadly defined and systematically organized to provide a focus, a rationale, and a tool for the integration,

presentation and interpretation of information (Mehmood, 2015). As noted, a well-presented conceptual framework helps to explain the possible connections between the variables. In this study, the conceptual framework shows the connection between independent variables (market depth, market breath, market resilience and market immediacy) and dependent variable (stock performance). Figure 2.1 demonstrates the conceptual framework.

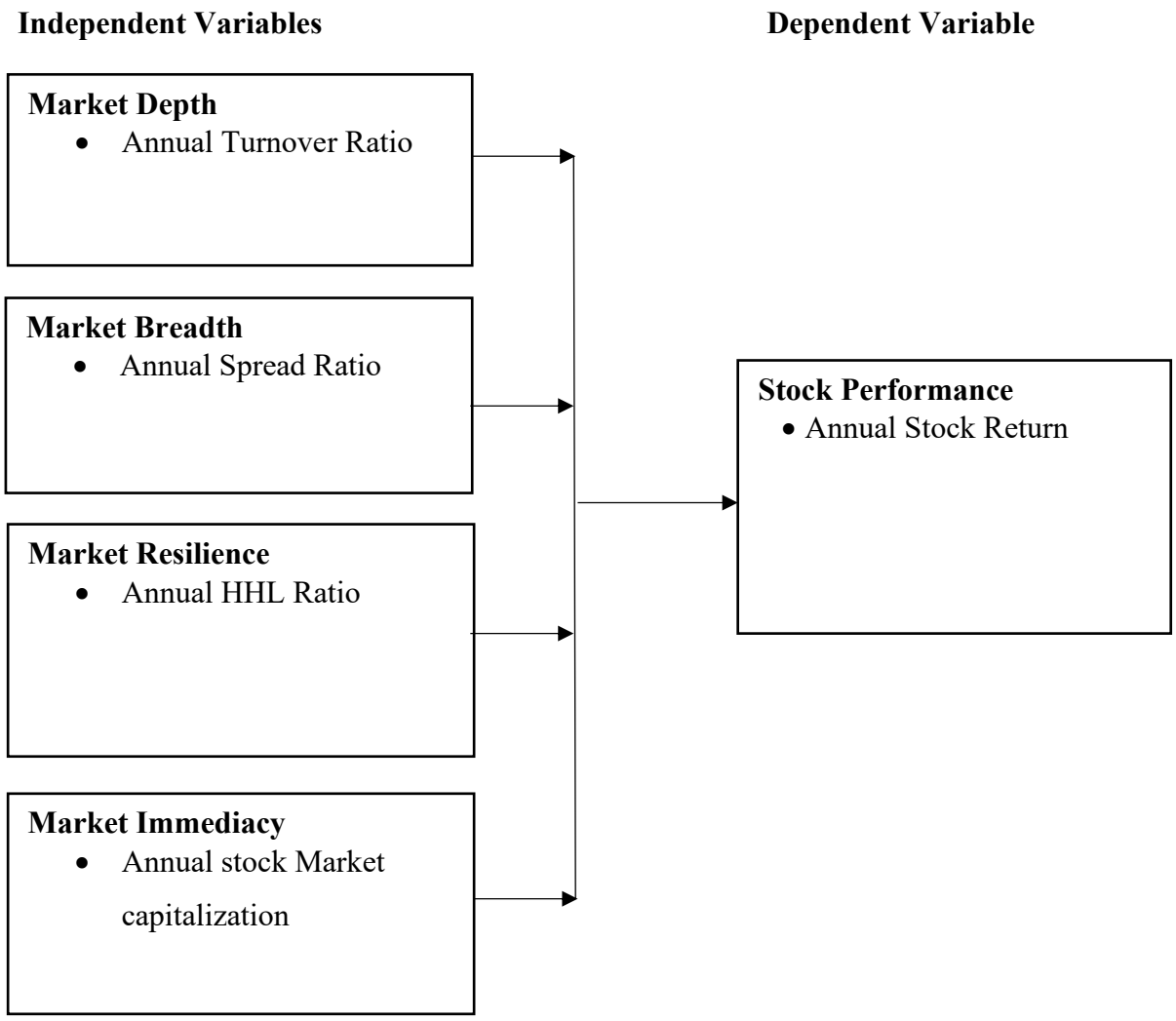

Figure 2.1: Conceptual framework showing the relationship between stock market liquidity and stock performance

The dependent variable in this study was stock performance, which refers to stock's ability to increase or decrease the wealth of its shareholder. Performance is typically measured by its fluctuation in price, when the stock price increases the stock shows good performance conversely a price decrease is a poor performance. In this case, stock performance was measured in terms of annual stock return.

The independent variable comprised of stock market liquidity aspects including market depth, market breath, market immediacy and market resilience. In this study, market depth was measured in terms of annual turnover ratio. Market breadth was measured in terms of annual spread ratio. A resilient market is a robust market where prices revert to mean fair prices within a short period of time. Market resilience was measured in terms of annual Hui- Heubel Liquidity Ratio which attempts to capture the resilience dimensions of liquidity. In a liquid market trades are executed in a minimal time lag. In this study, market immediacy was measured in terms of annual stock Market capitalization.

The study determined independently the effect of market depth on the performance of stocks, the effect of market breadth on the performance of stocks, the effect of market resilience on the performance of stocks and the effect of market immediacy on the performance of stocks. The study then determined combined effect of market depth, market breadth, market resilience and market immediacy on the performance of stocks.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The chapter discusses the research design, the population and sample. It also discusses the instruments used in data collection, the procedure for data collection and the method for data analysis.

3.2 Research Design

The research design used by the study was a survey research design to investigate the influence of stock market liquidity on stock performance of firms listed in the Nairobi Securities Exchange. Descriptive research methods permit the researcher to explore and describe the phenomena as it is and give actual information that can be used to solve some problems (Sekaran & Bougie, 2016). It describes the characteristics of the target group under study by focusing on the what, where and how of a phenomenon. It also reports the way things which include behaviour, attitudes, values and characteristics. Survey design is a study of variables in their natural setting or under usual circumstances; this comprises observation of facts, formulation of hypothesis, collection and classification of data, interpretation of data, formulation of theories, application of facts and predictions (Aghamousa *et al*., 2016).

3.3 Target Population

According to Taherdoost (2016) population refers to the entire group of individuals or objects to which researchers are interested in generalizing the conclusions. According to Mesa (2016) the target population corresponds to the entire set of subjects whose characteristics are of interest to the research team. The target population for this study was the 65 firms listed in the NSE as at December 2018.

3.4 Sample and Sampling Techniques

According to Sureshi (2015) a sample is a group of people, objects or items that are taken from a larger population for measurement and it should be representative of the population to ensure generalization of the findings from the research sample to the population as a whole. The sampling technique used was purposive sampling technique (Aghamousa *et al*., 2016). It is also known as subjective sampling/non-probability sampling technique where the units that are investigated are based on the judgment of the researcher hence the sample size was 20 stocks that make up the NSE 20 share index. The choice of purposive sampling was

justifiable because it allowed the researcher to pick 20 stocks representing all the sectors of the NSE that make up the NSE 20 share index and this represented the characteristics of the population which is all 65 companies quoted in the securities exchange.

3.5 Data Collection Methods

The study used secondary data. Secondary data was preferred for this study because it was already collected by and readily available from other sources and such data are cheaper, you acquire speedy results and are more quickly obtainable than primary data (Zhang *et al*., 2017). Data was collected using a data collection sheet for a period from January 2014 to December 2018. Monthly data on stock market liquidity aspects and stock performance was obtained from the NSE website. It was then averaged annually.

3.6 Data Analysis and Presentation

Data analysis is the process of systematically applying statistical and logical techniques to describe and illustrate, condense and recap and evaluate data. According to Rasnik (2015), various analytic procedures provide a way of drawing inductive inferences from the data. Data was analyzed with help of the Statistical Package for Social Sciences (SPSS vs 24) and results generated using descriptive and inferential statistics. Descriptive statistics included means and standard deviations to describe the characteristics of the study variables. Inferential statistics included correlation and regression analysis to establish the relationship between the study variables. Findings from the data were presented inform of tables and graphs.

Simple linear regression model was used to determine the effect of market depth on stock performance. The model was a follows.

$Y= a + bX_1 + Ɛ$ 3.1

Where

Y= stock performance.

a= constant

b= regression coefficient

X1= market depth

Ɛ= error term

Simple linear regression model was used to determine the effect of market breadth on stock performance. The model was a follows.

$Y = a + bX_2 + \varepsilon$ 3.2

Where

Y= stock performance.

a= constant

b= regression coefficient

X2= market breadth

Ɛ= error term

Simple linear regression model was used to determine the effect of market resilience on stock performance. The model was a follows.

$Y = a + bX_3 + \varepsilon$ 3.3

Where

Y= stock performance.

a= constant

b= regression coefficient

X3= market resilience

Ɛ= error term

Simple linear regression model was used to determine the effect of market immediacy on stock performance. The model was a follows.

$Y = a + bX_4 + \varepsilon$ 3.4

Where

Y= stock performance.

a= constant

b= regression coefficient

X4= market immediacy

Ɛ= error term

A multiple linear regression model was utilized to determine the effect of market depth, market breadth, market resilience and market immediacy on the performance of stocks and had the form:

$Yit = \beta 0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it}$ 3.5

Where

Y = stock performance.

X_1 = market depth;

X_2 = market breadth;

X_3 = market resilience;

X_4 = market immediacy;

i = firm

t = time

ε =Error term and

βo = constant

β_{1-4} = beta coefficient

3.6.1 Diagnostic Tests

These are pre-analysis tests that are conducted on the data set to ensure that it meets the expected threshold (Kothari, 2012). These tests were; normality, multicollinearity, heteroskedasticity and auto correlation.

3.6.1.1 Normality Test

Normality testing was done using Shapiro-Wilk test. A significance value (P value) greater than 0.05, implies that the data is normally distributed. Therefore, the null hypothesis of normal distribution is accepted. However, p value less than 0.05, results to rejection of the null hypothesis, implying the presence of abnormality in the variables data.

3.6.1.2 Multicollinearity Test

Multicollinearity occurs when there is high correlation among the independent variables, which affects the significance of the individual variables. In this study, it was tested using Variance Inflation Factor (VIF). A VIF value more than 10 implies presence of multicollinearity problem, while a VIF value less than 10 implies no multicollinearity problem. Furthermore, tolerance values greater than 0.2 indicates no multicollinearity problem.

3.6.1.3 Heteroscedasticity Test

Heteroscedasticity refers to a situation in which the variance of error term varies across observations. This is contrary to the Ordinary Least Squares (OLS) assumption that $V(\varepsilon_j)$

$=\sigma^2$for all j, meaning that the variance of the error term is constant (homoscedasticity) across observations. Heteroscedasticity test was run using Breusch-Pagan/Cook-Weisberg Test. The threshold was that the chi square probability value should be greater than 0.05, for the null hypothesis of no heteroscedasticity to be accepted.

3.6.1.4 Autocorrelation Test

The test for autocorrelation was done to determine whether residuals are correlated across time. The test was done using wooldridge test for autocorrelation. The null hypothesis of no autocorrelation is rejected if the p value is less than 0.05 and vice versa.

3.7 Operationalization of Study Variables

This section presents operationalization of the study variables.

Table 3.1: Operationalization of Variables

Variable	Operational definition	Measurement of variable
Stock Performance	Is the measure of a stock's ability to increase or decrease the wealth of its shareholder. Performance is typically measured by its fluctuation in price, when the stock price increases the stock shows good performance conversely a decrease in price is a poor performance.	Measured as annual stock return R= $\frac{Pt-Pt-1}{Pt-1}$ Pt-price in current period Pt-1-price in previous period
Market depth	It is the ability to sustain large market orders without impacting the price of the security. It provides an indication of the liquidity and depth for that security or currency. Turnover ratio is a measure of liquidity and the higher the share turnover the more liquid the share of the company	Measured as annual Turnover ratio TR= TS/ MC TS- Total number of shares traded over a period MC- Market capitalization
Market breadth	Is a technique used in technical analysis that attempts to gauge the direction of the overall market by analyzing the number of companies advancing relative to the number declining	Measured as annual spread S=(PA-PB) S- Spread PA- Ask price PB- Bid price
Market resilience	The period of time taken to reach equilibrium in the event of significant price fluctuations. Such fluctuations are typically caused by either news flow or large trade volumes.	Hui- Heubel Liquidity ratio HHL=((PMAX-PMIN)/PMIN)/TR PMAX- Maximum price PMIN- Minimum price TR- Turnover ratio
Market immediacy	It is the speed at which trades are absorbed by the market. In a liquid market trades are executed in a minimal time lag	Measured as annual stock Market capitalization Market cap= Shares outstanding * current market price of shares

3.8 Ethical Issues

According to Resnik (2015) ethics is a discipline that studies standards of conduct such as philosophy, theology, law, psychology or sociology. It is a method, procedure or perspective for deciding how to act and for analyzing complex problems and issues. Such judgments relates to redundant publications and plagiarism, voluntary participation in the research by all the respondents, the research was free of political, academic or financial conflict of interest, the research applied fully the principle of beneficence as the research is not intended to harm any party. In this study, the principle of respect for privacy was upheld. The information was treated with strict confidentiality. All the data collected were stored in private media with access codes to prevent unauthorized access. As noted by Sekaran (2016) the principle of veracity was upheld in this study, the research represents the true happenings and all data was obtained by legal means. The researcher also sought research permit from the National Commission for Science, Technology and Innovation (NACOSTI).

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

This chapter deals with data analysis, presentation and interpretation of the results. The main objective of the study was to investigate influence of stock market liquidity on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The data analysis is conducted in line with the study objectives.

4.2 Descriptive Statistics Results

This section provides descriptive summary results for the study variables. Specifically, the study summarizes the mean, standard deviation, min and max values of each variable in each year. Table 4.1 shows descriptive results in terms of mean, standard deviations, minimum and maximum for each year.

Table 4.1: Descriptive Statistics for variables

Variables		N	Mean	Std. Deviation	Minimum	Maximum
Stock Performance	2014	20	-0.001559	0.0053164	-0.013	0.0104
	2015	20	-0.000172	0.0062314	-0.0133	0.0121
	2016	20	-0.000676	0.0043871	-0.0075	0.0089
	2017	20	0.000584	0.00603	-0.0166	0.0117
	2018	20	0.002212	0.0070771	-0.0132	0.0165
	Total	100	0.000078	0.0058993	-0.0166	0.0165
Market Depth	2014	20	0.5815	0.1304758	0.3	0.78
	2015	20	0.5825	0.1282216	0.38	0.79
	2016	20	0.5825	0.1167487	0.42	0.75
	2017	20	0.6405	0.106102	0.45	0.78
	2018	20	0.62	0.1321881	0.39	0.79
	Total	100	0.6014	0.1231081	0.3	0.79
Market Breadth	2014	20	54.65	22.651304	21	96
	2015	20	62	24.445428	21	97
	2016	20	59.5	22.947308	26	96
	2017	20	64.2	22.572923	22	97
	2018	20	69.2	24.592682	22	100
	Total	100	61.91	23.488271	21	100
Market Resilience	2014	20	0.032991	0.0353552	0	0.1364
	2015	20	0.052336	0.0558915	0	0.1875
	2016	20	0.036655	0.0387756	0	0.1273
	2017	20	0.055748	0.0455648	0	0.1551
	2018	20	0.055984	0.0500792	0	0.1353
	Total	100	0.046743	0.0458964	0	0.1875
Market Immediacy	2014	20	9.650163	0.8567705	7.5567	11.1912
	2015	20	9.680253	1.1631668	6.7324	11.4604
	2016	20	9.591582	0.8216938	8.1676	11.0113
	2017	20	10.056879	0.7546449	8.8169	11.291
	2018	20	9.999318	1.1799759	7.4447	12.3416
	Total	100	9.795639	0.9716873	6.7324	12.3416

Table 4.1 shows descriptive summary results in terms of mean, standard deviations, minimum, maximum, skewness and kurtosis for all the years.

Table 4.2: Descriptive Summary

Variable	Obs	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Stock Performance	100	0.000078	0.0059	-0.0166	0.01647	-0.034	0.612
Market Depth	100	0.6014	0.12311	0.3	0.79	-0.271	-1.042
Market breadth	100	61.91	23.4883	21	100	-0.145	-1.166
Market resilience	100	0.04674	0.0459	0	0.1875	0.862	-0.234
Market immediacy	100	9.79564	0.97169	6.73239	12.3416	-0.394	0.49

The results in Table 4.2 indicate a mean of 0.0000778 for stock performance, 0.6014 for market depth, 61.91 for market breadth, 0.04674 for market resilience, and 9.79564 for market immediacy of all firms listed in Nairobi Securities Exchange, Kenya for the period between 2014 and 2018.

4.3 Trend Analysis Results

This section provides trend analysis results for the variables: market depth, market breadth, market resilience and market immediacy.

4.3.1 Market Depth

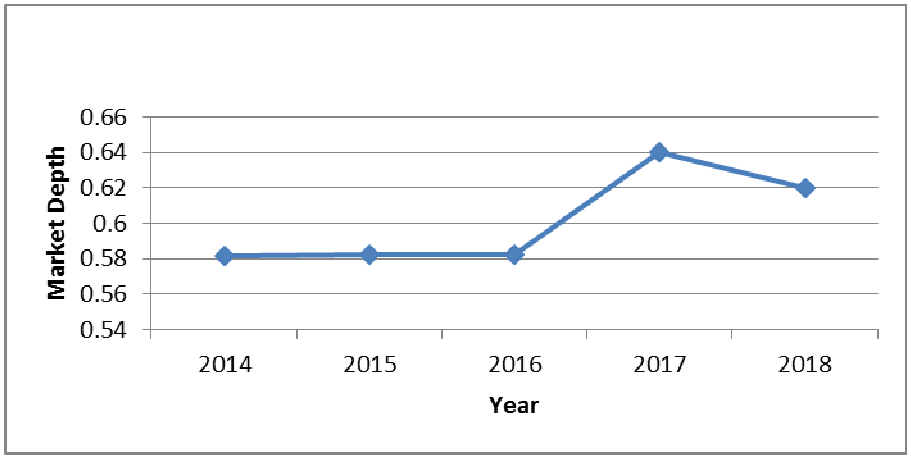

Figure 4.1: Market Depth trend analysis

The graph shows the change in market depth of firms listed in Nairobi Securities Exchange, Kenya over the measurement period from 2014 to 2018. Results indicate that value of market depth was constant between 2014 and 2016. It then increased up to 2017 after which it dropped in the last period. Market depth is expected to have a direct influence on stock performance.

4.3.2 Market Breadth

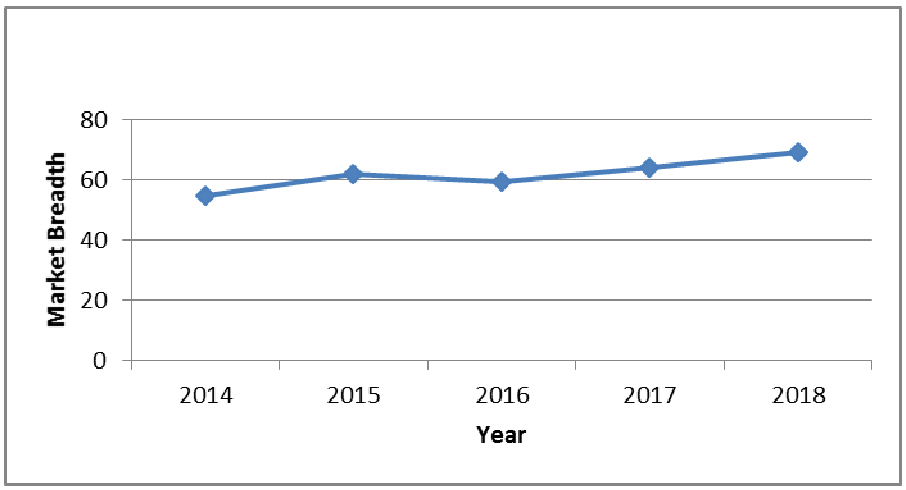

Figure 4.2: Market Breadth trend analysis

The graph above shows the change in market breadth of firms listed in Nairobi Securities Exchange, Kenya over the measurement period from 2014 to 2018. Results indicate that value of market breadth increased slightly throughout the study period. Market breadth is expected to have a direct influence on stock performance.

4.3.3 Market Resilience

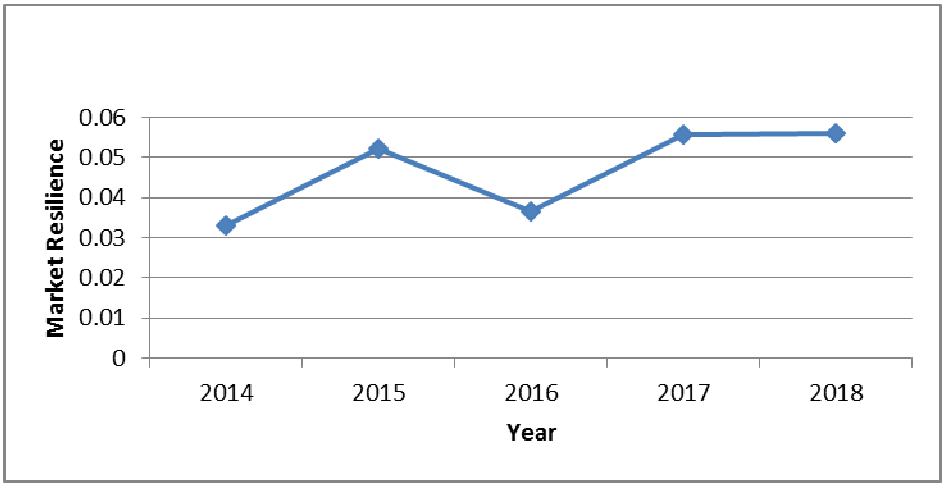

Figure 4.3: Market Resilience trend analysis

The graph shows the change in market resilience of firms listed in Nairobi Securities Exchange, Kenya over the measurement period from 2014 to 2018. Results indicate fluctuations in market resilience throughout the study period. Market resilience is expected to have a direct influence on stock performance.

4.3.4 Market Immediacy

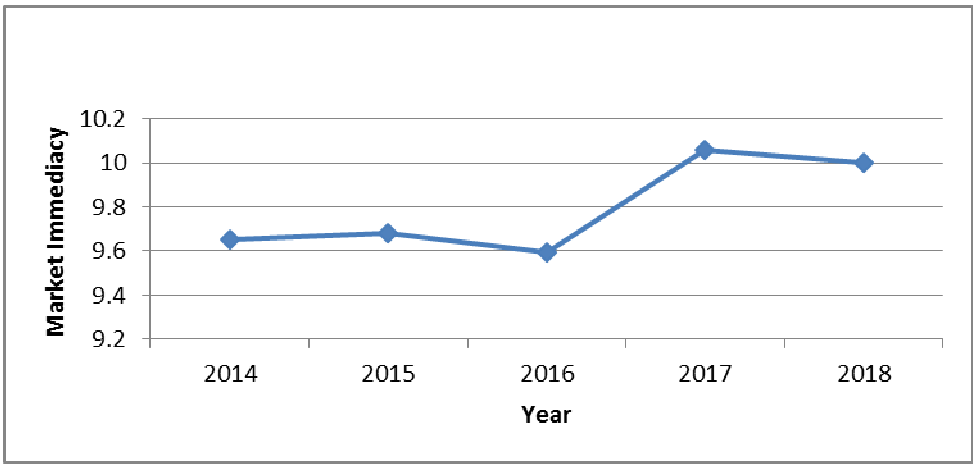

Figure 4.4: Market Immediacy trend analysis

The graph shows the change in market immediacy of firms listed in Nairobi Securities Exchange, Kenya over the measurement period from 2014 to 2018. Results indicate that value of market immediacy was constant between 2014 and 2015, dropped slightly up to 2016, then increased towards 2017. After which, it decreased slightly towards 2018. Market immediacy is expected to have a direct influence on stock performance.

4.3.5 Stock Performance

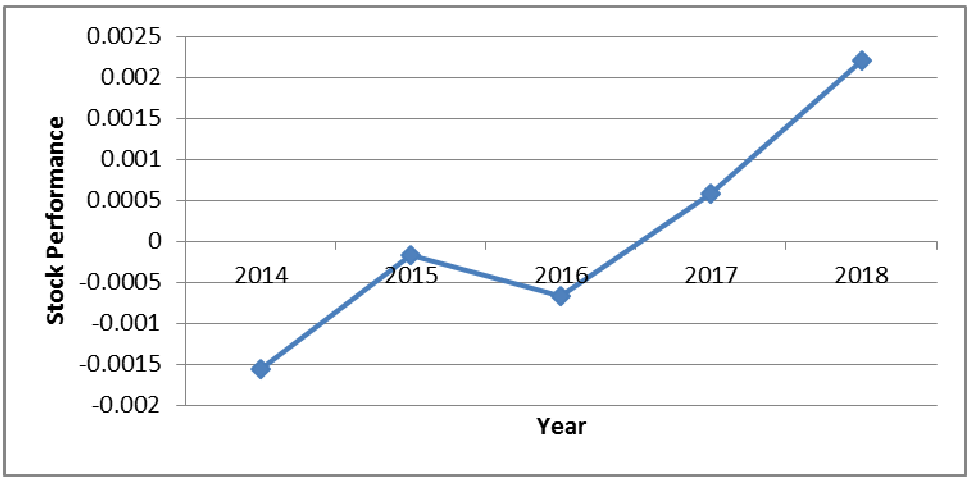

Figure 4.5: Stock Performance trend analysis

The graph shows the change in stock performance of firms listed in Nairobi Securities Exchange, Kenya over the measurement period from 2014 to 2018. Results indicate that value of stock performance was negative between 2014 and 2016. However, the firms reported positive stock performance in 2017 and 2018. Fluctuations in stock performance could be attributed to several factors that may be economical and political in nature.

4.4 Diagnostic Tests Results

The following diagnostic tests were conducted on the study data to ensure that results obtained would be accurate and reliable.

4.4.1 Normality Test

Normality test was conducted using Shapiro-Wilk test and results presented in Table 4.3.

Table 4.3: Shapiro-Wilk Test of Normality

Variables	Statistic	df	Sig.
Stock Performance	.989	100	.568
Market Depth	.953	100	.125
Market breadth	.949	100	.401
Market Resilience	.880	100	.243
Market immediacy	.985	100	.320

The findings above indicate that all the variables had significance values (sig.) greater than 0.05. This led to acceptance of the null hypothesis of normal distribution and thus the study data was normally distributed.

4.4.2 Multicollinearity Test

Multicollinearity test was conducted using VIF. Results are presented in Table 4.4

Table 4.4: Multicollinearity Test using VIF

Variables	VIF
Market Depth	6.606
Market Breadth	5.101
Market Resilience	3.544
Market Immediacy	7.181
Stock Performance	6.606
Overall	**5.8076**

The findings indicate an overall VIF value of 5.8076, which was less than 10. This means that there was no Multicollinearity problem, that is, the independent variables were not highly correlated.

4.4.3 Heteroskedasticity Test

Heteroskedasticity test was conducted using Breusch-Pagan / Cook-Weisberg test. Results are shown in Table 4.5.

Table 4.5: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of Revenue
chi2(1) = 0.91
Prob > chi2 = 0.3412

The findings reveal indicate a probability value of 0.3412, which is greater than 0.05. This means that the null hypothesis of constant variance of error terms was accepted. Therefore, there was no heteroscedasticity problem.

4.4.4 Autocorrelation Test

Test of Autocorrelation was conducted using Wooldridge test. Findings are in Table 4.6.

Table 4.6: Wooldridge test for Autocorrelation

Wooldridge test for autocorrelation
H0: no first-order autocorrelation
F(1, 19)= 0.468
Prob>F = 0.5024

The findings indicate a probability value of 0.5024, which is greater than 0.05 at 95% confidence interval. This means that the null hypothesis of no autocorrelation was accepted. Therefore, the residuals were not auto correlated across time.

4.5 Inferential statistics Results

This study used Pearson's Correlation, simple linear regression and multiple linear regression to analyze the research objectives.

4.5.1 Correlation Results

This section provides results on the correlation between market depth, market breadth, market resilience, market immediacy and stock performance. Results are illustrated in Table 4.7.

Table 4.7: Correlation Matrix

		Stock Performance	Market Depth	Market Breadth	Market Resilience	Market Immediacy
Stock Performance	Pearson Correlation	1.000				
	Sig. (2-tailed)					
	N	100				
Market Depth	Pearson Correlation	.648**	1.000			
	Sig. (2-tailed)	0.001				
	N	100	100			
Market Breadth	Pearson Correlation	.732**	.741**	1.000		
	Sig. (2-tailed)	0.000	0.000			
	N	100	100	100		
Market Resilience	Pearson Correlation	.791**	.701**	.723**	1.000	
	Sig. (2-tailed)	0.000	0.000	0.000		
	N	100	100	100	100	
Market Immediacy	Pearson Correlation	.686**	.709**	.764**	.786**	1.000
	Sig. (2-tailed)	0.001	0.000	0.000	0.000	
	N	100	100	100	100	100

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

Results reveal that market depth and stock performance had a direct and significant correlation (r=.648, p=0.001). This means that an increase in market depth is associated with an increase in stock performance. Results also indicate that market breadth and stock performance had a direct and significant correlation (r=.732, p=0.000). This means that an increase in market breadth is associated with an increase in stock performance. Further, results reveal that market resilience and stock performance had a direct and significant correlation (r=.791, p=0.000). This means that an increase in market resilience is associated with an increase in stock performance. In addition, results show that market immediacy and stock performance had a direct and significant correlation (r=.686, p=0.001). This means that an increase in market immediacy is associated with an increase in stock performance.

4.5.2 Regression Analysis

This section provides results on influence of stock market liquidity on stock performance of listed firms at 20 NSE share index. Testing of hypothesis was done using simple and multiple linear regression to determine the influence of stock market liquidity on performance of stocks of firms listed in NSE in Kenya. Fitness of the model division was based on the F statistic and the corresponding P values. The decision on whether to accept or reject the null hypothesis was based at 95% confidence interval.

4.5.2.1 Effect of Market Depth and Stock Performance

The objective of the study was to determine the effect of market depth on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The study used simple linear regression to test the hypothesis which stated that market depth had no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya. Tables 4.8, 4.9 and 4.10 provide model summary, ANOVA and coefficient results respectively.

Table 4.8: Model Summary; Effect of Market Depth on Stock Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.648a	0.42	0.414	0.00452

a Predictors: (Constant), Market Depth

Results indicate R square of 0.42. This implies that market depth accounts for 42% of variations in stock performance. The remaining 58% can be attributed to other factors not included in this model.

Table 4.9: ANOVA; Effect of Market Depth on Stock Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.001	1	0.001	70.877	.000b
	Residual	0.002	98	0		
	Total	0.003	99			

a Dependent Variable: Stock Performance

b Predictors: (Constant), Market Depth

Results reveal an F statistic of 70.877, with p value of 0.000, which is less than 0.05 at 95% confidence interval. This denotes that the model was statistically significant. Therefore, market depth is a good predictor of stock performance.

Table 4.10: Coefficients; Effect of Market Depth on Stock Performance

Model		Unstandardized Coefficients			
		B	Std. Error	t	Sig.
1	(Constant)	-0.019	0.002	-8.215	0.000
	Market Depth	0.031	0.004	8.419	0.000

a Dependent Variable: Stock Performance

Y = -0.019+0.031X1

Stock Performance =-0.019+0.031 Market Depth

Result indicated that market depth had a direct and significant effect on stock performance. This was supported by regression coefficient, 0.031 and p value, 0.000 at 5 percent level of significance. This implies that increase in market depth by one unit would result to increase in stock performance by 0.031 units.

The findings are consistent with that of Liu (2014) who studied the effect of market depth on the performance of stock of companies listed in the Nairobi Securities Exchange and found a direct impact on the NSE 20 Share index as it directly affects the volume of stock traded. Similarly, Marvasti and Lamberte (2016) discovered that information on market depth is useful to traders because it shows not only where prices are now but where they are likely to be in the near future. Additionally, Chipaumire and Ngirande (2014) concluded that 75 percent of the firms observed displayed a strong positive relationship between a favorable market depth and positive performance.

The null hypothesis, **H_{01}:** Market depth has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya, was rejected based on findings in table 4.10, which showed a t statistic of 8.419>1.96. Therefore, market depth had a significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

4.5.2.2 Effect of Market Breadth on Stock Performance

The second objective of the study was to determine the effect of market breadth on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The study used simple linear regression to test the hypothesis which stated that market breadth had no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya. Tables 4.11, 4.12 and 4.13 provide model summary, ANOVA and coefficient results respectively.

Table 4.11: Model Summary; Effect of Market Breadth on Stock Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.732[a]	.536	.532	.0040379

a Predictors: (Constant), Market Breadth

Results indicate R square of 0.536. This implies that market breadth accounts for 54% of variations in stock performance. The remaining 46% can be attributed to other factors not included in this model.

Table 4.12: ANOVA; Effect of Market Breadth on Stock Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	1	.002	113.315	.000[b]
	Residual	.002	98	.000		
	Total	.003	99			

a Dependent Variable: Stock Performance

b Predictors: (Constant), Market Breadth

Results reveal an F statistic of 113.315, with p value of 0.000, which is less than 0.05 at 95% confidence interval. This denotes that the model was statistically significant. Therefore, market breadth is a good predictor of stock performance.

Table 4.13: Coefficients; Effect of Market Breadth on Stock Performance

Model		Unstandardized Coefficients			
		B	Std. Error	t	Sig.
1	(Constant)	-.011	.001	-9.891	.000
	Market Breadth	0.332	.031	10.645	.000

a Dependent Variable: Stock Performance

Y = -0.011+0.332X2

Stock Performance =-0.011+0.332 Market Breadth

Result indicates that market breadth had a direct and significant effect on stock performance. This was supported by regression coefficient, 0.332 and p value, 0.000 at 5 percent level of significance. This implies that increase in market breadth by one unit would result to increase in stock performance by 0.332 units.

The findings are in line with Chen (2015) who did a study on how breadth of a market affect stocks performance and his study centered on stocks listed on the New York stock exchange and found that when breadth is low i.e. when few investors have long positions, these signals that short sales constraint is binding tightly and that prices are high relative to fundamentals. Thus, reduction in breadth should focus lower returns. Similarly, an increase in breadth should result to high returns. Dooley and O'Sullivan (2016) also established that market breadth had a positive influence on stock returns.

The null hypothesis, **H_{02}:** Market breadth has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya, was rejected based on findings in table 4.13, which showed a t statistic of 10.645>1.96. Therefore, market breadth had a significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

4.5.2.3 Effect of Market Resilience on Stock Performance

The third objective of the study was to determine the effect of market resilience on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The study used simple linear regression to test the hypothesis which stated that market resilience had no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya. Tables 4.14, 4.15 and 4.16 provide model summary, ANOVA and coefficient results respectively.

Table 4.14: Model Summary; Effect of Market Resilience on Stock Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.791[a]	.626	.622	.0036252

a Predictors: (Constant), Market Resilience

Results indicate R square of 0.626. This implies that market resilience accounts for 63% of variations in stock performance. The remaining 37% can be attributed to other factors not included in this model.

Table 4.15: ANOVA; Effect of Market Resilience on Stock Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	1	.002	164.166	.000[b]
	Residual	.001	98	.000		
	Total	.003	99			

a Dependent Variable: Stock Performance
b Predictors: (Constant), Market Resilience

Results reveal an F statistic of 164.166, with p value of 0.000, which is less than 0.05 at 95% confidence interval. This denotes that the model was statistically significant. Therefore, market resilience is a good predictor of stock performance.

Table 4.16: Coefficients; Effect of Market Resilience on Stock Performance

Model		Unstandardized Coefficients			
		B	Std. Error	t	Sig.
1	(Constant)	-.005	.001	-9.015	.000
	Market Resilience	.102	.008	12.813	.001

a Dependent Variable: Stock Performance

Y = -0.005+0.102X3

Stock Performance =-0.005+0.102 Market Resilience

Result indicates that market resilience had a direct and significant effect on stock performance. This was supported by regression coefficient, 0.102 and p value, 0.001 at 5 percent level of significance. This implies that increase in market resilience by one unit would result to increase in stock performance by 0.102 units.

The findings concur with that of Caprio (2014), who did a study on the relationship between market resilience and the performance of the stocks in the London stock exchange and found that there is a strong relationship between market resilience and positive performance of stocks. Chakraborty (2016) also found similar findings.

The null hypothesis, **H_{03}:** Market resilience has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya, was rejected based on findings in table

4.16, which showed a t statistic of 12.813>1.96. Therefore, market resilience had a significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

4.5.2.4 Effect of Market Immediacy on Stock Performance

The fourth objective of the study was to determine the effect of market immediacy on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The study used simple linear regression to test the hypothesis which stated that market immediacy had no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya. Tables 4.17, 4.18 and 4.19 provide model summary, ANOVA and coefficient results respectively.

Table 4.17: Model Summary; Effect of Market Immediacy on Stock Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.686[a]	.471	.466	.0043122

a Predictors: (Constant), Market Immediacy

Results indicate R square of 0.471. This implies that market immediacy accounts for 47% of variations in stock performance. The remaining 53% can be attributed to other factors not included in this model.

Table 4.18: ANOVA; Effect of Market Immediacy on Stock Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	1	.002	87.281	.000[b]
	Residual	.002	98	.000		
	Total	.003	99			

a Dependent Variable: Stock Performance

b Predictors: (Constant), Market Immediacy

Results reveal an F statistic of 87.281, with p value of 0.000, which is less than 0.05 at 95% confidence interval. This denotes that the model was statistically significant. Therefore, market immediacy is a good predictor of stock performance.

Table 4.19: Coefficients; Effect of Market Immediacy on Stock Performance

Model		Unstandardized Coefficients			
		B	Std. Error	t	Sig.
1	(Constant)	-.041	.004	-9.280	.000
	Market Immediacy	.004	.00043	9.342	.003

a Dependent Variable: Stock Performance

Y = -0.041+0.004X4

Stock Performance =-0.041+0.004 Market Immediacy

Result indicates that market immediacy had a direct and significant effect on stock performance. This was supported by regression coefficient, 0.004 and p value, 0.003 at 5 percent level of significance. This implies that increase in market immediacy by one unit would result to increase in stock performance by 0.004 units.

The findings are similar to those of Wanzala (2018) who did a study on how to regain market confidence in an era of economic uncertainty. The results showed that investor confidence was low in that period of the study and that there was a positive relationship between the investor confidence and the performance of the securities exchange. When the investors had high market confidence the securities exchange had positive performance unlike when the investors didn't have confidence the market.

The null hypothesis, **H_{04}:** Market immediacy has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya, was rejected based on findings in table 4.19, which showed a t statistic of 9.342>1.96. Therefore, market immediacy had a significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

4.5.2.5 Effect of Stock Market Liquidity on Stock Performance

The fifth objective of the study was to determine the effect of market immediacy on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The study used multiple linear regression to test the hypothesis which stated that stock market liquidity had no significant influence on stock performance of firms listed in Nairobi Securities Exchange,

Kenya. The sub-section provides regression findings on the combined effect of stock market liquidity components on stock performance.

Table 4.20: Model Summary; Effect of Stock Market Liquidity on Stock Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.810a	0.657	0.642	0.00353

a Predictors: (Constant), Market immediacy, Market Resilience, Market breadth, Market Depth

Results indicate R square of 0.657. This implies that jointly, market depth, breadth, resilience and immediacy accounts for 66% of variations in stock performance. The remaining 34% can be attributed to other factors not included in this model.

Table 4.21: ANOVA; Effect of Stock Market Liquidity on Stock Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.002	4	0.001	45.406	.000b
	Residual	0.001	95	0.00		
	Total	0.003	99			

a Dependent Variable: Stock Performance

b Predictors: (Constant), Market immediacy, Market Resilience, Market breadth, Market Depth

Results reveal an F statistic of 45.406, with p value of 0.000, which is less than 0.05 at 95% confidence interval. This denotes that the model was statistically significant. Therefore, stock market liquidity is a good predictor of stock performance.

Table 4.22: Coefficients; Effect of Stock Market Liquidity on Stock Performance

Model		Unstandardized Coefficients			
		B	Std. Error	t	Sig.
1	(Constant)	-0.013	0.006	-2.004	0.048
	Market Depth	0.021	0.006	3.626	0.007
	Market breadth	0.232	0.024	9.852	0.000
	Market Resilience	0.08	0.015	5.485	0.001
	Market immediacy	0.003	0.001	2.301	0.047

a Dependent Variable: Stock Performance

The estimated equation was as follows:

$Y = -0.013+0.021X_1+0.232X_2+0.08X_3+0.003X_4$

Stock Performance =-0.013+0.021Market Depth+0.232 Market Breadth+0.08 Market Resilience+0.003 Market Immediacy

Following the joint regression, results reveal that market depth had a direct and significant effect on stock performance (coefficient=0.021, p value =0.007). The findings are consistent with that of Liu (2014) who studied the effect of market depth on the performance of stock of companies listed in the Nairobi Securities Exchange and found a direct impact on the NSE 20 Share index as it directly affects the volume of stock traded. Similarly, Marvasti and Lamberte (2016) discovered that information on market depth is useful to traders because it shows not only where prices are now but where they are likely to be in the near future. Additionally, Chipaumire and Ngirande (2014) concluded that 75 percent of the firms observed displayed a strong positive relationship between a favorable market depth and positive performance.

Market breadth had a direct and significant effect on stock performance (coefficient=0.232, p value =0.000). The findings are in line with Chen (2015) who did a study on how breadth of a market affect stocks performance and his study centered on stocks listed on the New York stock exchange and found that when breadth is low i.e. when few investors have long positions, these signals that short sales constraint is binding tightly and that prices are high relative to fundamentals. Thus, reduction in breadth should focus lower returns. Similarly, an increase in breadth should result to high returns. Dooley and O'Sullivan (2016) also established that market breadth had a positive influence on stock returns.

Market resilience had a direct and significant effect on stock performance (coefficient=0.08, p value =0.001). The findings concur with that of Caprio (2014), who did a study on the relationship between market resilience and the performance of the stocks in the London stock exchange and found that there is a strong relationship between market resilience and positive performance of stocks. Chakraborty (2016) also found similar findings.

Market immediacy had a direct and significant effect on stock performance (coefficient=0.003, p value =0.047). The findings are similar to those of Wanzala (2018) who did a study on how to regain market confidence in an era of economic uncertainty. The results showed that investor confidence was low in that period of the study and that there was a positive relationship between the investor confidence and the performance of the securities exchange. When the investors had high market confidence the securities exchange had positive performance unlike when the investors didn't have confidence the market.

The null hypothesis, **H_{05}:** Stock market liquidity has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya was rejected based on ANOVA findings in table 4.21 (the calculated F statistic, 45.406> critical F statistic, 2.47). The ANOVA results also indicate P value of 0.000 < 0.05, indicating a statistical significant relationship between stock market liquidity and stock performance. This means that combined stock market liquidity had a significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

4.6 Hypotheses Testing Results

This section presents a summary of hypotheses testing results based on regression results indicated in previous section.

Table 4.23: Hypotheses Test Results

Hypotheses	T statistic , F statistics	Decision
i **H_{01}:** Market depth has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya	8.419>1.96	Rejected
ii **H_{02}:** Market breadth has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya	10.645>1.96	Rejected
iii **H_{03}:** Market resilience has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya	12.813>1.96	Rejected
iv **H_{04}:** Market immediacy has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya	9.342>1.96	Rejected
v **H_{05}:** Stock market liquidity has no significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya	45.406>2.47	Rejected

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter provides summary of the major findings, conclusions and recommendations as well as suggestions for further research. This is done as per the study objectives. The study targeted firms listed at the NSE, where secondary data was collected for a period from January 2014 to December 2018. Data was sourced from NSE website and KNBS. The main objective of the study was to investigate influence of stock market liquidity on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

5.2 Summary

The general objective of the study was to investigate influence of stock market liquidity on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The study came up with several key findings on the influence of stock market liquidity on stock performance. The findings are summarized as per the research objectives.

The first objective of the study was to determine the effect of market depth on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The correlation results indicated a direct and significant relationship between market depth and stock performance. Further, the regression results revealed that market depth had a direct and significant effect on stock performance. This implied that an increase in market depth would result to improvement in stock performance. From the regression findings, the null hypothesis was rejected implying that market depth had a significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

The second objective of the study was to determine the effect of market breadth on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The correlation results indicated a direct and significant relationship between market breadth and stock performance. Further, the regression results revealed that market breadth had a direct and significant effect on stock performance. This implied that an increase in market breadth would result to improvement in stock performance. From the regression findings, the null hypothesis was rejected implying that market breadth had a significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

The third objective of the study was to determine the effect of market resilience on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The correlation results indicated a direct and significant relationship between market resilience and stock performance. Further, the regression results revealed that market resilience had a direct and significant effect on stock performance. This implied that an increase in market resilience would result to improvement in stock performance. From the regression findings, the null hypothesis was rejected implying that market resilience had a significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

The fourth objective of the study was to determine the effect of market immediacy on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The correlation results indicated a direct and significant relationship between market immediacy and stock performance. Further, the regression results revealed that market immediacy had a direct and significant effect on stock performance. This implied that an increase in market immediacy would result to improvement in stock performance. From the regression findings, the null hypothesis was rejected implying that market immediacy had a significant influence on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

The fifth objective of the study was to determine the combined effect of stock market liquidity on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The multiple regression results indicated that combined stock market liquidity elements had a direct and significant effect on stock performance. This implied that an increase in stock market liquidity elements would result to improvement in stock performance. From the regression findings, the null hypothesis was rejected implying that stock market liquidity elements had a direct and significant effect on stock performance of firms listed in Nairobi Securities Exchange, Kenya.

5.3 Conclusions

Following the findings, the study concluded that market depth had a direct and significant effect on stock performance. This finding implies that an increase in market depth will improve the stock performance of firms listed in Nairobi Securities Exchange, Kenya. Market depth was found to best explain stock performance separately compared to when combined with other stock market liquidity aspects.

From the results, the study concluded that market breadth had a direct and significant effect on stock performance. This finding implies that an increase in market breadth will improve the stock performance of firms listed in Nairobi Securities Exchange, Kenya. Market breadth was found to best explain stock performance separately compared to when combined with other stock market liquidity aspects.

From the results, the study concluded that market resilience had a direct and significant effect on stock performance. This finding implies that an increase in market resilience will improve the stock performance of firms listed in Nairobi Securities Exchange, Kenya. Market resilience was found to best explain stock performance separately compared to when combined with other stock market liquidity aspects.

Based on the results, the study concluded that market immediacy had a direct and significant effect on stock performance. This finding implies that an increase in market immediacy will improve the stock performance of firms listed in Nairobi Securities Exchange, Kenya. Market immediacy was found to best explain stock performance separately compared to when combined with other stock market liquidity aspects.

From the findings, the study concluded that stock market liquidity had a significant effect on stock performance of firms listed in Nairobi Securities Exchange, Kenya. This finding implies that an increase in any of the stock market liquidity elements would result to an increase in stock performance. Further, the study concluded that market breadth best explains stock performance, followed by market resilience, market depth and lastly market immediacy.

5.4 Recommendations

Based on the findings, the study makes several recommendations.

5.4.1 Policy

It was established that stock market liquidity had a positive and significant influence on stock performance. The study recommends to the government to find ways of regulating the security market and ensuring that market remains liquid. This will build investors' confidence and lead to improved stock performance.

5.4.2 Practice

Further, the study recommends that management of various firms should find ways of raising finance, make best investment decisions and financing decisions using the security exchange. The management should also come up with ways of increasing their liquidity and stabilizing their stocks in order to attract investors.

In addition, the study recommends that the capital markets development authority should educate people on how the security market operates and how best the public can take advantage of the market to make favorable returns on investments as well as become more aware and informed when making investment decisions at the individual level.

5.5 Suggestion for Further Research

The study investigated the influence of stock market liquidity on stock performance of firms listed in Nairobi Securities Exchange, Kenya. The focus was on four components: market depth, market breadth, market resilience and market immediacy, which accounted for 66 percent of variations in stock performance. Future studies can consider other aspects that can be attributed to the remaining 34 percent. Further, the study narrowed down to 20 firms, which make up the NSE 20 share index. However, future studies could consider including all the companies quoted in the security market.

REFERENCES

Acharya, V. V., & Pedersen, L. H. (2019). Economics with Market Liquidity Risk. *Critical Finance Review, special issue on "Liquidity: Replications, Extensions, and Critique", Forthcoming, NYU Stern School of Business*. https://papers.ssrn.com/sol3/papers.cfm

Adrian, T., Fleming, M., Shachar, O., & Vogt, E. (2017). Market liquidity after the financial crisis. *Annual Review of Financial Economics*, *9*(1), 43-83. https:// doi/abs/10.1146/annurev-financial-110716-032325

Afzal, M. (2015). Impact of global financial crisis on stock markets:Evidence from Pakistan and India. *Journal of Business Management and Economics, 3*(7). 275-282. http://www.e3journals.org/cms/articles/1342846725_Afzal.pdf

Aghamousa, A., Aguilar, J., Ahlen, S., Alam, S., Allen, L. E., Prieto, C. A., & Baltay, C. (2016). The DESI experiment Part I: science, targeting, and survey design. https://arxiv.org/abs/1611.00036

Ahmed, A. H. (2009). *Corporate governance and dividend policy in Kenya: Asurvey of companies listed at the Nairobi Securirties Exchange, Nairobi* [Unpublished Master's thesis] University of Nairobi. http://erepository.uonbi.ac.ke/handle/11295/13024

Al-Abbadi, H. A., & Abdul-Khaliq, S. (2017). The relationship between inflation and stock market performance in Jordan. *European Journal of Business and Management, 9*(2), 142-150. http://journals.essrak.org/index.php/Business/article/view/198

Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of financial Economics*, *17*(2), 223-249. https://www.sciencedirect.com/science/article

Amihud, Y., Hameed, A., Kang, W., & Zhang, H. (2015). Stock liquidity and the cost of equity capital in global markets. *Journal of Applied Corporate Finance*, *27*(4), 68-74. https://onlinelibrary.wiley.com/doi/abs/10.1111/jacf.12147

Andreu, L., Sarto, J. L., & Serrano, M. (2015). Implications of manager replacement: evidence from the Spanish mutual fund industry. *Applied Economics*, *47*(13), 1366-1387. https://www.tandfonline.com/doi/abs/10.1080/00036846.2014.997921

Ann, M. (2015). *Extreme risk and the perfomance of firms listed in the Nairobi Securities Exchange* (MBA Thesis, The University of Nairobi). http://erepository.uonbi.ac.ke/handle/11295/93425

Arogo, P. (2017). *The relationship between stock market liquidity and economic growth in Kenya* (MBA Thesis, The University of Nairobi). http://erepository.uonbi.ac.ke/bitstream/handle/11295/102804

Asensio, A. (2017). Insights on endogenous money and the liquidity preference theory of interest. *Journal of Post Keynesian Economics and Social Development*, *40*(3), 327-348. https://doi/abs/10.1080/01603477.2017.1319248

Basana, S. R. (2017). *Effect of 2008 and 2016 US Presidential Election in the Indonesian Stock Market* (Doctoral dissertation, Petra Christian University). https://ojs.petra.ac.id/ojsnew/index.php/man/article/view/20614

Boloupremo, T. (2020). Stock Market Liquidity and Firm Performance in the Nigerian Stock Exchange. *International Journal of Commerce and Finance*, *6*(1), 31-40. http://ijcf.ticaret.edu.tr/index.php/ijcf/article/view/150

Bookstaber, R., Foley, M. D., & Tivnan, B. F. (2016). Toward an understanding of market resilience: market liquidity and heterogeneity in the investor decision cycle. *Journal of Economic Dimenisions in Social Interaction and Coordination*, *11*(2), 205-227. https://link.springer.com/article/10.1007/s11403-015-0162-8

Boonvorachote, T., & Lakmas, K. (2016). Price volatility, trading volume, and market depth in Asian commodity futures exchanges. *Kasetsart Journal of Social Sciences*, *37*(1), 53-58. https://www.sciencedirect.com/science/article/pii/S2452315116000059

Boudoukh, J., Brooks, J., Richardson, M., & Xu, Z. (2016). *The complexity of liquidity: The extraordinary case of sovereign bonds* (No. w22576). National Bureau of Economic Research. https://www.nber.org/papers/w22576

Broto, C., & Lamas, M. (2016). Measuring market liquidity in US fixed income markets: A new synthetic indicator. *The Spanish Review of Financial Economics, 14*(1), 15-22. https://www.sciencedirect.com/science/article/pii/S2173126816000036

Budd, B. Q. (2018). CEO ability and firm performance: Stock market. *Journal of Economics and Finance, 42* (1), *138-154. https://link.springer.com/article/10.1007/s12197-017-9390-1*

Caplin, A., & Martin, D. (2017). Defaults and attention: the drop out effect. *Revue économique, 68*(5), 747-755. https://www.cairn.info/revue-economique-2017-5-page-747.htm

Caprio, G. (2014). *Financial Regulation After the Crisis: How Did We Get Here, and How Do We Get Out*? London. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2350564

Chakraborty, T. (2016). Resilience of Indian Equity Versus Derivatives Markets: An Analysis Using VaR Approach. *IUP Journal of Applied Finance*, *18*(3). 95-108. http://search.ebscohost.com

Chen, J. (2015). Breadth of ownership and stock returns. *Journal of Financial Economics*, *66*(2-3), 171-205. https://www.sciencedirect.com

Chipaumire, G. & Ngirande, H. (2014). How Stock Market Liquidity Impact Economic Growth in South Africa. *Journal of Economics, 5*(2), 185-192. https://www.tandfonline.com/doi/abs/10.1080/09765239.2014.11884995

Demsetz, H. (1968). The cost of transacting. *The Quarterly Journal of Economics*, *82*(1), 33-53. https://academic.oup.com/qje/article-abstract/82/1/33/1849310

Dooley, L., & O'Sullivan, D. (2016). Inter-organizational Innovation: Collaborative Breadth and Depth within the low-technology SME sector. In *ISPIM Innovation Symposium* (p. 1). The International Society for Professional Innovation Management (ISPIM).https://search.proquest.com/openview/ef1e6a761e402692a2f78e2a31f0e124/1?pq-origsite=gscholar&cbl=2040562

Fan, X., Lv, X., Yin, J., & Liang, J. (2018). Quantifying market efficiency of China's regional carbon market by multifractal detrended analysis. *Energy Procedia*, *152*, 787-792. https://www.sciencedirect.com/science/article/pii/S1876610218307914

Ha, D. T., & Vinh, V. X. (2017). Stock market liquidity and firm investment: evidence from Vietnam. *Journal of International Business and Economics*, *5*(1), 67-74. http://jibe-net.com/journals/jibe/Vol_5_No_1_June_2017/6.pdf

Islam, R. (2014). How Earning Per Share (EPS) affects on Share Price and Firm Value. *European Journal of Business Practise and Management, 6(17)*,97-108. http://dspace.bracu.ac.bd/xmlui/handle/10361/6343

James, K. (2014). *The effect of general elections on stock prices for firms listed in the Nairobi Securities Exchange. Nairobi* [Unpublished MBA thesis], University of Nairobi. http://erepository.uonbi.ac.ke/handle/11295/76583

Jonathan, K. (1986). A theory of trading volume. *Journal of Finance*, *41*, 1069-1087. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-6261.1986.tb02531.x

Kahuthu, L. W. (2017). *The effect of stock market liquidity on stock returns of companies listed in the Nairobi Securities Exchange. Nairobi* [Unpublished MBA thesis], Strathmore University. https://su-plus.strathmore.edu/handle/11071/5594

Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money*. London: Palgrave Macmillan. https://www.elgaronline.com

Kirui, E. Wawire, N.H.W, & Onono, P. O. (2014). Macroeconomic variables, volatility and stock market returns: A case of Nairobi Securities Exchange, Kenya. *International*

Journal of Economics and Finance, 6(8), 214 – 228. http://ir-library.ku.ac.ke/bitstream/handle/123456789/11632

Koech, P. (2014). *Relationship between liquidity and return of stock at the Nairobi Securities Exchange.* Nairobi [Unpublished MBA thesis], University of Nairobi. http://erepository.uonbi.ac.ke/handle/11295/12680

Komine, A. (2016). Recent research on Keynes. *The History of Economic Thought*, *58*(1), 120-138. https://www.jstage.jst.go.jp/article/jshet/58/1/58_120/_article/-char/ja/

Kondor, P., & Vayanos, D. (2019). Liquidity risk and the dynamics of arbitrage capital. *The Journal of Finance*, *74*(3), 1139-1173. https://doi/abs/10.1111/jofi.12757

Lakhani, S. A. (2019). *Effect of macro-economic factors on the stock market performance of NSE 20 constituent companies in Kenya* (Doctoral dissertation, United States International University-Africa). http://41.204.183.105/handle/11732/4632

Liu, Q. Z. (2014). The effects of market depth on the arrival rate of orders. *Journal of Systems Science Econometrics and Business Science Complexity*, *27*(6), 1192-1203. https://link.springer.com/content/pdf/10.1007/s11424-014-1247-5.pdf

Liu, X., Liu, Y., & Ma, S. (2017, May). Liquidity, Stock Return and Trading Volume: Measuring Causality at Multiple Horizons. In *Proceedings of the 2017 International Conference on Data Mining, Communications and Information Technology* (pp. 1-5). https://dl.acm.org/doi/abs/10.1145/3089871.3089903

Lo, A. W. (2010). Bubble, rubble, finance in trouble?. *The Journal of Psychology and Financial Markets*, *3*(2), 76-86. https://doi/pdf/10.1207/S15327760JPFM0302_02

Mamoghli, E. R. (2014). Measuring liquidity in an emerging market: The Tunis Securities exchange. *International Journal of Economics and Financial Issues*, *4*(4), 920. https://search.proquest.com/openview/68a900d0b1a8b0bfba27d97db8422ade/1?pq-origsite=gscholar&cbl=816338

Marriott, P., Tan, S. M., & Marriott, N. (2015). Experiential learning–A case study of the use of computerised stock market trading simulation in finance education. *Accounting Education*, *24*(6), 480-497. https://doi/abs/10.1080/09639284.2015.1072728

Marvasti, A., & Lamberte, A. (2016). Commodity price volatility under regulatory changes and disaster. *Journal of the Modern Day Business Empirical Finance*, *38* (1), 355-361. https://www.sciencedirect.com/science/article/pii/S092753981630072X

McConnell, G. K. (1994). The effect of market segmentation and illiquidity on asset prices: Evidence from exchange listings. *The Journal of Finance*, *49*(2), 611-636. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-6261.1994.tb05154.x

Mehmood, K. K. (2015). *Moderating effect of corporate parenting roles on the relationship between product diversification strategies and corporate performance of listed companies on Bursa Malaysia* (Doctoral dissertation, Universiti Utara Malaysia). http://etd.uum.edu.my/id/eprint/5407

Mesa, J. N. (2016). Sampling: how to select participants in my research study?. *Anais brasileiros de dermatologia*, *91*(3), 326-330. https://www.scielo.br/scielo.php

Musyoki, J. (2017). *Effect of exchange rate volatility on stock market returns at the Nairobi Securities Exchange.* Nairobi [Unpublished MBA thesis], University of Nairobi. http://erepository.uonbi.ac.ke/handle/11295/102621

Mutulis, M.V. (2018). The Effect of fiscal policy on the performance of the Nairobi securities exchange in Kenya. *International Journal of Economics, Commerce and Management, 6*(6), 294-311. http://erepository.uonbi.ac.ke

Nairobi Securities Exchange (2018). NSE Integrated Report and Financial Statements. https://www.nse.co.ke

Ngirande, G. C. (2014). How stock market liquidity impact economic growth in South Africa. *Journal of Applied Economics and Business Development Process*, *5*(2), 185-192.https://doi/abs/10.1080/09765239.2014.11884995

Osanloo, A., & Grant, C. (2016). Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your "house". *Administrative issues journal: connecting education, practice, and research*, *4*(2), 7-17. https://aij.scholasticahq.com/article/7.pdf

Peron, T. (2014). The structure and resilience of financial market networks. *Chaos: An Interdisciplinary Journal of Nonlinear Science and Business Process*, *22*(1), 113-117. https://aip.scitation.org/doi/abs/10.1063/1.3683467

Rasnik, A. S. (2015). *Responsible conduct of research.* London: Oxford university press. https://books.google.com/books

Ryu, D., Kim, H., & Yang, H. (2017). Investor sentiment, trading behavior and stock returns. *Applied Economics and Modern Day Business Letters*, *24*(12), 826-830. https://www.tandfonline.com/doi/abs/10.1080/13504851.2016.1231890

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons. https://books.google.com/books

Sharma, A. J. (2014). The behavioural finance: A challenge or replacement to efficient market concept. *International Journal of Finance and Business Management, 31*(3) 263-277. https://ijesc.org/upload/188576e4e8764e0280c812942ca8a044.

Singh, T., Gupta, M., & Sharma, M. (2015). Stock market liquidity and firm performance. *Accounting*, *1*(1), 29-36. https://www.researchgate.net/publication/284751145

Stringfello, A. (2010). *Intergrated marketing communications.* Boston: Cengage AU. https://au.cengage.com/c/isbn/9780170443005

Sureshi, K. (2015). Design, data analysis and sampling techniques for clinical research. *Annals of the Indian Modern Academy of Neurology*, *14*(4), 287-300. https://www.ncbi.nlm.nih.gov/pmc/articles/pmc3271469/

Taherdoost, H. (2016). Sampling methods in research methodology; how to choose a sampling technique for research. *Electronic Trading and Process Journal, 16(5),* 18-27. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3205035

Tan, F., Hou, X., Zhang, J., Wei, Z., & Yan, Z. (2018). A deep learning approach to competing risks representation in peer-to-peer lending. *IEEE Transactions on Neural Networks and Influence in the Modern Day Learning Systems*, *30*(5), 1565-1574. https://ieeexplore.ieee.org/abstract/document/8488590/

Tarza Sokpo, J., Iorember, P. T., & Usar, T. (2017). Inflation and Stock Market Returns Volatility: Evidence from the Nigerian Stock exchange 1995Q1-2016Q4: An E-GARCH Approach. *International Journal of Econometrics and Financial Management*, *5*(2),69-76. https://papers.ssrn.com/sol3/papers.

Thaler, R. H. (2017). Behavioral economics. *Journal of Political Economy*, *125*(6), 1799-1805. https://www.journals.uchicago.edu/doi/full/10.1086/694640

Tsai, H. C., & Tsai, I. (2018). Market depth in the UK housing market. *Economic research-Ekonomska istraživanja*, *31*(1), 406-427. https://hrcak.srce.hr/file/295504

Tseng, M., Mahmoodzadeh, S., & Gencay, R. (2018). Impact of Algorithmic Trading on Market and every right Quality: A Reconciliation. *Available at SSRN 3038542*. https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID3212063_code2260832.pdf?abstractid=3038542

Vayanos, D. (2012). *Theories of liquidity.* Hanover: Now modern generation publishers. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2268580

Vena, H. (2014). *The effect of inflation on the stock market returns of the Nairobi securities exchange* [Unpublished MSC thesis] The University of Nairobi. https://chss.uonbi.ac.ke/sites/default/files/chss/MSC%20finance%20final%20copy%206th%20Nov%202014.pdf

Wanzala, R. W. (2018). Estimation of market immediacy by coefficient of elasticity of trading three approach. *The Journal of Finance and Data Science*, *4*(3), 139-156. https://www.sciencedirect.com/science/article/pii/S2405918817300740

Wu, Y., & Xu, W. (2018). Changes in Ownership Breadth and Capital Market Anomalies. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2988428

Zhang, X., Kuchinke, L., Woud, M. L., Velten, J., & Margraf, J. (2017). Survey method matters: Online/offline questionnaires and face-to-face or telephone interviews differ. *Computers Perfomance Compared to in Human Behavior*, *71(4)*, 172-180. https://www.sciencedirect.com/science/article/pii/S0747563217300791

APPENDICES

Appendix I: Introduction letter

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OFFICE OF THE DIRECTOR GRADUATE SCHOOL

Ref: CM11/11803/16 Date: 21st February, 2020

The Director General
National Commission for Science Technology and Innovation,
P. O. Box 30623-00100
NAIROBI.

Dear Sir,

RE: REQUEST FOR RESEARCH PERMIT – MR. ERICK JORAM ALUSA
REG. NO. CM11/11803/16

This is to introduce and confirm to you that the above named student is in the Department of Accounting, Finance & Management Science, Faculty of Commerce, Egerton University.

He is a bona-fide registered MBA student in this University. His research topic is **"Influence of Stock Market Liquidity on Performance of Stocks of Firms Listed in Nairobi Securities Exchange in Kenya."**

He is at the stage of collecting field data. Please issue him with a research permit to enable him undertake the studies.

Your kind assistance to him will be highly appreciated.

Yours faithfully,

26 FEB 2020

Prof. Nzula Kitaka
DIRECTOR, BOARD OF POSTGRADUATE STUDIES

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Appendix II: Composition of NSE 20 Share Index

	COMPANY
1	Sasini Limited
2	Kenya Airways Limited
3	Nation Media Group
4	Scangroup Limited
5	Centum Investment Company Limited
6	Kenya Commercial Bank
7	The cooperative bank of Kenya
8	Standard Chartered Bank Limited
9	Barclays Bank Limited
10	Equity Bank Limited
11	CFC Stanbic Holding Limited
12	East African Breweries Limited
13	British American Tobacco
14	Athi River Mining Limited
15	Bamburi Cement Limited
16	KenolKobil Limited
17	Kenya Power Limited
18	Kenya Electricity Generating Company Limited
19	British American Investment Company (Kenya) Limited
20	Safaricom Limited

Appendix III: Data Collection Sheet

Company	**Month/ Variable**	**Stock Performance** (Annual Stock Return)	**Market Depth** (Annual Turnover Ratio)	**Market Breadth** (Annual Spread Ratio)	**Market Resilience** (HHL Ratio)	**Market immediacy** (Annual stock Market capitalization)
1	**January**					
1	**February**					
1	**March**					
1	**April**					
1	**May**					
1	**June**					
1	**July**					
1	**August**					
1	**September**					
1	**October**					
1	**November**					
1	**December**					
1	**Average annual data**					

Appendix IV: Publication Extract

International Journal of Business Management and Processes
http://journals.essrak.org/index.php/Business

International Journal of Business Management and Processes (IJBMP)
Vol 5. Issue No.4. March, 2021. PP 34-53. ISSN 2616-3209

INFLUENCE OF STOCK MARKET LIQUIDITY ON PERFORMANCE OF FIRMS LISTED IN NAIROBI SECURITIES EXCHANGE IN KENYA

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Abstract

The stock market in Kenya plays a vital role intermediation between borrowers and lenders hence uncertainty in the market impacts negatively to the economy. Unfortunately, the stock market has not been performing well. Despite posting a profit before tax of Ksh 233.1 Million in 2016, it was still a 39% decrease from Ksh. 381.5 Million in 2015. The study sought to investigate the influence of stock market liquidity on performance of firms listed on Nairobi securities exchange. It was guided by liquidity preference theory, trading cost theory and trading volume theory. A survey research design was applied and the study targeted 65 listed companies with sample size of 20 firms for a period ranging from 2014-2018. Secondary data was collected using a data collection sheet. Descriptive and inferential data analysis was done with the aid of Statistical Package for Social Sciences (SPSS version 24.0). Findings indicated that individually, market depth, market breadth, market resilience and market immediacy had a direct and significant effect on stock performance. Further, a combination of the stock market liquidity components yielded a positive and significant effect on stock performance. The study concluded that market breadth best explains stock performance, followed by market resilience, market depth and lastly market immediacy. This study is significant because it will enable the government to efficiently regulate the security exchange as it attempts to safeguard the investments of all the investors and help management of various firms on how best they can use the security exchange to raise finance.

Key Words: *Liquidity, Market breadth, Market depth, Market immediacy, Market resilience*

Introduction

Market liquidity has an effect on share prices and stock returns, these are sentiments that were echoed by the Emerging Markets Committee in their 2007 study of Factors influencing liquidity in emerging markets, in their research they identified that the macro drivers of liquidity are depth of the market, breadth of the market, market resilience and market immediacy. Market breadth is used to gauge the general direction of the stock market based on all traded stocks it presents a more holistic performance measure because it accounts for movements across all stocks. Market depth is the market's ability to sustain large market orders without impacting the price of the security. Market resilience is the period of time taken to reach equilibrium in the event of significant price fluctuations. Such fluctuations are typically caused by either news flows or large trade volumes. Market immediacy is the speed at which trades are absorbed by the market. In a liquid market, trades are executed with a minimal time lag (Arogo, 2017).

Appendix V: Key Data Analysis Output

Firms	Year	Stock Perfomance	Market Depth	Market Breadth	Market Resilience	Market Immediacy	Inflation
7	2018	0.016469746	0.79	100	0.11111111	12.34155034	7.99
11	2018	0.013469676	0.79	98	0.07222222	11.54658034	7.99
12	2015	0.012051512	0.79	97	0.1875	11.4603942	7.99
7	2017	0.011736579	0.78	97	0.15506329	11.29103622	7.99
12	2014	0.010437687	0.78	96	0.13636364	11.19122093	7.99
19	2018	0.009411926	0.77	96	0.13529412	11.06937641	7.99
3	2015	0.00921244	0.77	95	0.12951807	11.06621976	7.99
3	2018	0.009072789	0.77	95	0.12790698	11.03777901	7.99
7	2016	0.008917477	0.75	94	0.12727273	11.01133338	7.99
14	2018	0.007940854	0.75	93	0.125	11.00636457	7.99
1	2015	0.007865324	0.75	93	0.11764706	10.92134891	7.99
2	2018	0.007205821	0.75	91	0.11707317	10.91918715	7.99
14	2017	0.006962156	0.74	91	0.11555556	10.91254605	7.99
17	2018	0.005852785	0.74	90	0.11320755	10.85667912	7.99
11	2016	0.005735731	0.74	90	0.11111111	10.80145458	7.99
15	2017	0.005661278	0.73	90	0.10144928	10.75456589	7.99
10	2017	0.005299341	0.73	90	0.1	10.751956	7.99
10	2015	0.005215776	0.72	88	0.1	10.74579281	7.99
6	2016	0.004836228	0.72	86	0.09550562	10.68237894	6.88
16	2017	0.003812636	0.71	82	0.0952381	10.67175444	6.88
18	2017	0.003676721	0.71	81	0.09375	10.65618667	6.88
13	2018	0.003521127	0.71	81	0.09289617	10.65164586	6.88
8	2015	0.003264263	0.7	81	0.08791209	10.57929381	6.88
17	2017	0.003108164	0.7	79	0.08333333	10.57438913	6.88
13	2015	0.003044351	0.7	77	0.08181818	10.56988957	6.88
19	2017	0.003031974	0.7	77	0.08045977	10.52861673	6.88

2	2017	0.003017332	0.69	77	0.08	10.30669873	6.88
18	2016	0.003004849	0.69	76	0.075	10.2651049	6.88
3	2014	0.002778357	0.69	76	0.075	10.24433356	6.88
7	2014	0.00270963	0.67	75	0.06666667	10.24180382	6.88
11	2014	0.002704241	0.67	75	0.06451613	10.2109922	6.88
14	2014	0.00254558	0.66	75	0.05660377	10.15240433	6.88
11	2015	0.002271114	0.66	75	0.05540897	10.13156794	6.88
15	2014	0.002173322	0.66	74	0.05434783	10.10919875	6.88
8	2016	0.00205121	0.65	73	0.05	10.03936607	6.58
13	2016	0.002000414	0.65	72	0.04819277	10.01316007	6.58
12	2016	0.001701143	0.65	71	0.04819277	10.01063912	6.58
1	2017	0.001651641	0.65	71	0.04545455	9.994740055	6.58
18	2014	0.00157448	0.64	71	0.04545455	9.974440394	6.58
1	2014	0.001243437	0.64	70	0.04347826	9.880861396	6.58
12	2018	0.001174358	0.64	70	0.04210526	9.873799771	6.58
16	2016	0.001022286	0.62	69	0.04166667	9.827530552	6.58
10	2018	0.000997293	0.61	68	0.04081633	9.802065896	6.58
18	2018	0.000949732	0.61	68	0.04072398	9.790841676	6.58
18	2015	0.000820176	0.61	63	0.04	9.775095851	6.58
9	2017	0.000784985	0.6	63	0.03571429	9.738251792	6.58
5	2015	0.000634831	0.6	63	0.03314917	9.711358438	6.58
9	2015	0.00056976	0.59	62	0.03092784	9.700863879	6.58
10	2014	0.000500393	0.59	61	0.02941176	9.694839963	6.58
17	2016	0.000414594	0.59	60	0.02941176	9.673573796	6.58
1	2018	0.000412229	0.58	60	0.02941176	9.652517086	6.58
20	2018	0.00020603	0.58	58	0.02857143	9.610408003	6.32
3	2017	-6.87285E-05	0.58	58	0.02777778	9.593281654	6.32
20	2017	-0.000137334	0.57	57	0.02762431	9.586087572	6.32
8	2017	-0.00021176	0.56	57	0.02564103	9.584400401	6.32
14	2015	-0.000274499	0.56	54	0.02564103	9.555845557	6.32
4	2014	-0.000476807	0.56	53	0.02258065	9.514451097	6.32

20	2016	-0.000617623	0.55	53	0.01960784	9.500040573	6.32
7	2015	-0.000803389	0.54	53	0.0188172	9.499729615	6.32
6	2018	-0.000804917	0.54	52	0.01785714	9.448000224	6.32
16	2014	-0.0010202	0.53	51	0.01449275	9.432971233	6.32
16	2015	-0.001021242	0.52	50	0.01162791	9.425689445	6.32
3	2016	-0.001372684	0.51	49	0.01156069	9.37507389	6.32
4	2018	-0.001399482	0.51	49	0.01036269	9.371102261	6.32
11	2017	-0.001619376	0.5	45	0.01036269	9.339252634	6.32
2	2016	-0.002380119	0.5	45	0.01010101	9.315304833	6.32
9	2018	-0.002495722	0.48	43	0.01010101	9.295991654	6.32
9	2016	-0.00256246	0.48	42	0.01010101	9.289017841	6.32
13	2014	-0.002759953	0.48	42	0.00796813	9.237700523	6.32
15	2018	-0.002780792	0.48	42	0.00502513	9.057879016	4.69
13	2017	-0.002891367	0.47	41	0.00343643	8.944482672	4.69
5	2017	-0.002905741	0.47	40	0	8.941878977	4.69
15	2016	-0.003127762	0.47	39	0	8.904210193	4.69
20	2014	-0.003130743	0.46	39	0	8.852364085	4.69
15	2015	-0.003320683	0.45	38	0	8.827682845	4.69
9	2014	-0.003336173	0.45	36	0	8.824790598	4.69
6	2017	-0.003427405	0.45	33	0	8.816905693	4.69
19	2015	-0.00382906	0.44	33	0	8.708734472	4.69
19	2016	-0.003912417	0.43	31	0	8.640814434	4.69
6	2015	-0.004014013	0.43	30	0	8.575557278	4.69
14	2016	-0.00418726	0.43	29	0	8.425794958	4.69
20	2015	-0.005120502	0.42	27	0	8.301029996	4.69
1	2016	-0.005271084	0.42	27	0	8.205240189	4.69
5	2016	-0.005357395	0.42	26	0	8.167586691	4.69
8	2018	-0.005365716	0.41	25	0	8.122150319	4.69
17	2014	-0.005665529	0.4	24	0	7.837911514	4.69
2	2014	-0.005768835	0.39	22	0	7.556673269	4.69
16	2018	-0.006375475	0.39	22	0	7.444669231	4.69

Appendix VI: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **845537**

Date of Issue: **16/March/2020**

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