EFFICIENCY OF CAPITAL MARKET: A CASE STUDY ON DAR-ES-SALAAM STOCK EXCHANGE AND THE IMPACT IT HAS ON INVESTORS.

BY

MOMBO GILLIAN FELICIAN

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

SUMMER 2014
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MOMBO GILLIAN FELICIAN

A Research Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY -AFRICA

SUMMER 2014
STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: ___________________________ Date: ___________________________

Mombo Gillian Felician (ID No. 628300)

This project has been presented for examination with my approval as the appointed supervisor.

Signed: ___________________________ Date: ___________________________

Mr. Samuel Wainaina

Signed: ___________________________ Date: ___________________________

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ABSTRACT

The purpose of the study was to determine the efficiency of capital market in Dar es Salaam Stock Exchange and its impact on investors. The study was guided by the following research objectives; to evaluate the current state of determinants of capital market efficiency, to analyze the implication of determinants of capital market efficiency to investors and to identify the best adopted practices used to promote capital market efficiency.

The study adopted a descriptive research design. The population of the study was 15 institutional investors, 180,000 individual investors and 7 brokerage firms. The study adopted convenient sampling method. Data was collected using a structured questionnaire, analyzed using descriptive statistics such as percentages and frequency distribution tables and presented using tables and figures. Correlation was used to show causal relationship between analyzed variables. Statistical Package for Social Sciences was used as a data analysis tool.

In regards to determinants of capital market efficiency, the findings indicated that 55% of respondents strongly agreed that DSE market was able to accommodate large stock orders. The results were consistent with Chordia, Roll and Subrahmanyam (2005) study that postulated a liquid market facilitates efficiency when it can accommodate larger order flow. The findings illustrated that 50% of respondents strongly disagreed that brokers in the market preferred to be anonymous. This was consistent with study done by Foucault, Moinas and Theissen (2006), which explained that informed traders preferred anonymous trading, while liquidity traders did not prefer anonymity. Hence a large number of respondents’ agreed that DSE to some extent is liquid.

To investigate the implication of determinants of Capital Market Efficiency to an investor, research findings indicated that 50% of professional respondents strongly agreed that high liquidity enables investors to actively exchange shares without large price changes. These findings corresponds to Wuyts (2007) who explained that liquidity leads to lower transaction costs which enabled investors to participate more in exchanging securities without a large effect on price. On the other hand both individual investors (46%) and professional investors (52%) strongly disagreed that investors diversify their
stocks cheaply. This contradicts with a study done by Coffee (1991) who explained that a market should have policies which promote liquidity which in turn it will lead to obvious benefits to the investor such as to cash their investments quickly and cheaply.

To find out the measures used to promote efficiency, the findings revealed that 61% of the respondents agreed to large extent that demutualization in DSE will help segregating the current members ownership and trading rights. This findings are similar are supported by Kenyataa (2009), who explained that demutualization leads to separation of ownership and trading rights which will lead for stock markets to be modern exchanged markets. The findings also indicated 57% of respondents agreed that demutualization will enhance investors participation in DSE. Therefore, the findings matches the findings of Hart (1996) who explained demutualization will lead to a flexible governance structure, access to global markets and more synergy and consolidation of stock exchange and it will increase investors participation.

Based on the research findings, it’s recommended that DSE to use innovative ways to increase on the liquidity of the stock market. On regulation system it should focus on cost and benefit analysis in promoting development of the exchange. The media was advised to disclose all relevant information on DSE so as to increase awareness. DSE should increase liquidity through price transparency. Use of electronic trading should be considered so as to increase the market liquidity. To increase on efficiency of DSE, it was suggested that government agencies, increase number of products, and to find ways to educate the public on investing in stock exchange.

The main conclusion of this study is that investors in DSE face liquidity challenges during diversifying their securities. Technology has increased in time, cost and information efficiency in DSE. Moreover, investors in DSE have confident and rely on the market for their investments. On transparency in DSE, most investors agreed that transparency is mainly on information rather than price. On the other hand, on best adopted measures used to promote efficiency, majority of respondents agreed that demutualization will improve on efficiency and governance structure. Moreover majority of respondents agreed technology improvement will also increase in efficiency. However majority of respondents disagreed that financial market liberalization will promote efficiency in DSE.
For recommendations on future research, there is a need to fill the knowledge gap on the discrepancies of the study that stock market can have strong regulation system yet the transparency and liquidity of the stock exchange is low.
ACKNOWLEDGEMENT

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DEDICATION

This project is dedicated to my parents who have taught me perseverance is a source of excellence and success. To my siblings who have been a source of encouragement and support.

In addition, this project is dedicated to all my friends who have been a great source of motivation and inspiration. Lastly, I dedicate to all those who believe in the richness of learning and knowledge.
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<td>BOT-</td>
<td>Bank of Tanzania</td>
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<tr>
<td>CMA-</td>
<td>Capital Market Authority</td>
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<tr>
<td>CMSA-</td>
<td>Capital Market and Securities Authority</td>
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<td>DSE-</td>
<td>Dar es Salaam Stock Exchange</td>
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<td>DSEI-</td>
<td>Dar es Salaam Stock Exchange Index</td>
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<td>EMH-</td>
<td>Efficient Market Hypothesis</td>
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<td>SPSS-</td>
<td>Statistical Package for Social Science</td>
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Problem

Financial Market is a market in which financial assets (securities) such as stocks and bonds traded. It’s where one party transfers funds in the market by purchasing financial assets such as stocks, bonds, derivative previously held by another capital. Financial market facilitates the flow of funds and there by facilitate financing and investing by households, firms, and government agencies. Financial markets are divided into two; the markets which facilitates short term funds known as money market and markets which facilitates long term funds called capital markets (Madura, 2003).

Capital Market is a market that facilitates the flow of long term funds (Madura, 2003). Capital market perform important functions such as it facilitates the transfer of investible funds from economic agents in financial surplus to those in financial deficit, which is achieved by selling securities shares or bonds to those with surplus funds hence governments, companies, local authorities, supranational organizations get access to large pool of capital for financing their activities (Foley, 1991).

Capital markets in emerging markets have become important venture for improving income for individuals and firms. However these economies face a major challenge of few firms listed in the stock exchanges. The firms listed in the stock exchange suggest propositions that few firms and investors know the benefits of listing and investing respectively, and the stock exchanges lack appropriate structure and technology for the market to be fully effective and efficient (Norman, 2011).

Stock exchange market is the standardized and organized financial capital market. Stock market is a crucial market in the competitive world; individuals, institutions and governments participate either by investing or raising funds in a formalized and standardized manner. Stock market is a formal market that trades different financial instruments at a specific price and time, with a set of rules and regulations according to the laws of the specific country (Benning, 2007). Hence the efficient functioning of this
market is important to all the investors and companies listed in that particular market (Massele et al., 2013).

Capital market efficiency depicts a state where market price is able to provide accurate signals for resource allocation. In the market, firms are able to make production-investment decision, and investors may choose among the securities that present ownership of firm activities under the assumption that security prices at any time fully reflect all available information (Fama, 1969). The ability of a stock market to contribute to the financial development and growth of an economy depends on its informational, operational and allocation efficiency (Lagoarde-segot and Lucey, 2008).

The efficiency of stock market can be determined by information efficiency which is closely related to the information in stock markets (Zou, 2011). Fama (1969) supports this statement that market efficiency is largely influenced by informational efficiency and it’s measured by the amount and speed with which information is incorporated into prices. Engel and Morris (1991) assert in an efficient market, stock prices reflect the market value of future dividends which depends on profits.

Grossman (1998) identified informational efficiency and market liquidity as predictors of stock market efficiency and stock market performance. He also showed there is a link between liquidity and information efficiency in promoting efficiency in the stock market. Mecagni and Sourial, (1999) also identified that regulatory environment, transparency and liquidity as necessary factors in improving efficiency.

Healy and Palepu (2001) identified that corporate disclosure is an important factor in functioning of an efficient capital market in form of regulated financial reporting such as financial statements, management meetings and voluntary communication such as management forecasts, press release. Furthermore, market capitalization is identified also to be an important determinant in measuring the efficient of stock market since it’s an indication of the size of the stock market (Yasmin and Yusuf, 2008).

Over the past two decades financial markets and especially stock market have increasingly grown both in developed and developing market. Factors such as macroeconomic stability, privatization of state owned enterprise, domestic financial reforms and capital account liberalization have aided to the growth of financial market (Claessen et al., 2002).
Emerging capital markets face a lot of challenges, across the sub-Saharan Africa enormous frustration is sensed due to laagered pace of stock market development. Structures, policies and procedures have being developed but lack of public confidence and a high degree of illiteracy have being major setbacks for growth of the capital Markets. Moreover the lack of confidence is brought about by the low market liquidity, which faces potential investors to sit on sidelines rather than engaging in trading (CMA, 2008).

Dar es Salaam Stock Exchange was incorporated in the 19th September 1996 under Cap 212 as a private company limited by guarantee (Cap, 212; DSE, 2011). It was followed by enactment of the capital market and Securities act 1994 which is the industry regulatory body established with the mandate of promoting an orderly, fairly and efficient capital market in Tanzania (DSE, 2011). As of May 2014, their 18 listed companies where by 12 companies are domestic and 6 are cross listed companies. The first companies to be listed are Tanzania Oxygen Limited (TOL) and Tanzania Breweries Limited (TBL) in 1998 (DSE, 2011). While the latest domestic companied listed is Maendeleo Bank in 2013. The first foreign company to cross listed is Kenya Airways Limited (KQ) in 2004 (DSE, 2014).

DSE has two indices, the all share Index DSEI, which is a market weighted index and Tanzania Stock Index. According to DSE Annual Report (2013), the market capitalization of listed companies in the DSE as of December 2013 is TZS billions 14,057.92 and the market capitalization of listed companies in percentage GDP was 10%. Never the less the DSE has been facing challenges in accelerating growth in Tanzania since it’s one of the emerging stock markets in Africa.

The DSE is governed by a Governing council which consists of members drawn from; the chief executive officer licensed dealing members, members representing listed companies, institutional investors, professions, and member representing the public. The Central Depository System (CDS) in DSE acts like a bank for securities where various securities are deposited in safe custody to facilitate trading for DSE. Trading is conducted through an Automated Trading System (ATS) which electronically matches bids and offers. The ATS is integrated with the CDS to facilitate automated validation of securities
holdings and straight through processing of securities transaction. The clearing and settlement of securities is T +3 for stocks and T+1 for government securities (DSE, 2013).

1.2 Statement of the Problem

Hasan, Malkamaki, and Schmiedel (2002) investigated 49 stock exchanges in North and South America, Europe and Asia-Pacific region over the period 1989-1998 to test the influence of technology and automation on the productivity and efficiency of stock market. This study found out that investment in technology related developments effectively influenced cost and revenue efficiency which in turn lead to efficient stock market. Lesmond(2005) investigated the relationship between liquidity and stock market efficiency in emerging markets in Taiwan and Russian stock market, in which the study concluded that countries with weak political and legal system have high liquidity cost which leads to stock market inefficiency.

Uziela (2012) determined factors that promote efficiency in Baltic Stock market to be market participant, information availability and corporate (financial) disclosure. In his study, he concluded that absence or inefficiency of the three factors leads to major impediments of stock market efficiency. Additionally study Lagoarde-segot and Lucey (2008) investigated information efficiency in the Middle–Eastern North African (MENA) stock market and its relation to the general efficiency of the MENA stock market. This study yielded different results in the MENA stock markets, they determined more factors that affected efficiency such as market depth and corporate governance.

Moreover, Yasmin and Yusuf (2008) investigated the effect of market capitalization on Dhaka Stock Exchange efficiency and the implication of market capitalization to investor’s decision making the findings indicated that high volume of transaction per day increased efficiency of Dhaka Stock Exchange. Mensah, Berko, and Adom (2012) also tested the significance of automation in the Ghana Stock market, if automating increases the efficiency of the stock market. The study showed that automation has improved the efficiency of the exchange.

Mwesigwa, Tumwine, and Atwine (2013) investigated role of liquidity and informational efficiency on Uganda Stock market performance and efficiency. The resulted showed that there is a positive relationship between liquidity and capital market efficiency.
Additionally, Gakeri (2011) also explored the legal norms and regulation in enhancement of securities markets and efficiency of stock market in Sub-Saharan Africa.

Although there have been several studies (Yasmin and Yusuf, 2008; Healy and Palepu 2001; Lesmond 2005) concerning the issue of determinants of the stock market efficiency and its relevance to the investors decision making process, none was found to have attempted to determine the current state of the determinants of stock market efficiency to an investor in the Dar es Salaam Stock Exchange. This research sought to analyses state of the determinants of the stock market efficiency and they impact on investment decision making in the DSE.

1.3 General Objective

The general objective of this study was to assess the efficiency of the Dar es Salaam Stock Exchange and its impact on investors.

1.4 Specific Objectives

The specific objectives of this study were;

1.4.1 To evaluate the current state of determinants of stock market efficiency.

1.4.2 To analyze the implication of determinants of capital market efficiency to an investor.

1.4.3 To identify the best adopted practices used to promote capital market efficiency.

1.5 Importance of Study

A systematic research of the research question will help different stakeholders to develop appropriate change, policies, recommendation to develop an efficient capital market in Tanzania.

1.5.1 Dar es Salaam Stock Exchange

The Study will help DSE in the day to day operational activities, the study determined the efficiency of the DSE and the implication to the investors. Furthermore it will help DSE to identify different measures that will promote efficiency which in turn will lead to
attraction of more companies to list and attract potential investors to invest in the DSE which will spur the financial development of Tanzania.

1.5.2 Policy Makers
The findings of this will provide policy makers such as Capital Market and Security Authority (CMSA), Bank of Tanzania (BOT), World Bank with new policies, regulatory frameworks, procedures, and organizational structure of how to regulate the DSE to be an effective and efficient stock market. Furthermore it will help in identifying the best practices to promote efficiency in capital market which will have an impact in attracting and sustain investors.

1.5.3 Other Emerging Capital Markets
The findings of this study will also help other emerging capital markets to analyze determinates of stock exchange efficiency in their particular stock exchange. And equip them with the needed knowledge on how to develop appropriate measures for their respective capital markets to be effective and efficient.

1.5.4 Financial Institutions
Financial institutions such as investments banks, private equity funds, mutual funds, and pension funds among others will benefit from the study by understanding policies, procedures and attraction of potential investor since the Tanzanian population will be exposed to the knowledge of stock exchanges and its benefits.

1.5.5 Investors
This study will be of benefit for both individual and institutional investors, knowing the indicators of capital market efficiency and its implication on the investors in making informed decision making.

1.5.6 Academicians and Learning Institutions
The study will increase the knowledge pool of determinants of stock market efficiency and its implication on investors. Moreover the academicians will benefit in the findings of the best practices that promote efficiency in the capital market. The research has also revealed areas for more academicians to research on in the future trends.
1.6 Scope of the Study

The scope of this study was in Dar es Salaam, the Dar es Salaam Stock Exchange (DSE). The population was individual and institution investors in DSE, and authorized brokerage firms in DSE. The data collection period for this study was done in a period of three weeks from 21st April to 10th May 2014.

The main limitations of the study were the cooperation from the institution and investors, since the study relied mostly on the primary data so as to get first-hand information on issues on DSE. The study had to convince the targeted response of the importance of the study as well as provide different incentives to encourage their heartedly participation.

1.7 Definition of Terms

1.7.1 Stock Market

Stock exchange is a market in which shares held by investors are traded in act of trading officially the shares held by investors. It is a process of converting securities officially. Securities are converted through formalized institutions such as London Stock Exchange, Dar es Salaam Stock Exchange (Benning, 2007).

1.7.2 Capital Market Efficiency

Capital market efficiency is a market in which prices provide accurate signals for resource allocation, it’s a market in which firms can make production-investment decision, and investors can choose among the securities that present ownership of firm activities under the assumption that security prices at any time fully reflect all available information (Fama, 1969).

1.8 Chapter Summary

This chapter explained on the general overview of Dar es Salaam stock exchange and revealed the research objectives of the study. The main objective of the study was to assess the efficiency of the Dar es Salaam Stock Exchange and its impact on investors. The specific objectives of this study was to evaluate the current state of determinants of stock market efficiency, to analyze the implication of determinants of capital market
efficiency to an investor and to identify the best adopted practices used to promote capital market efficiency.

Chapter two reviews the literature of different scholars on the determinants of efficient capital market and chapter three enlightened on the research methodology of the study, the methods and procedures which were used to carry out the study. Chapter four presents the results and findings of the study. Chapter five highlights the summary, discussion, conclusion and recommendations of the study.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter viewed the related literature on the determinants of capital market efficiency, the implication of the determinants of capital market efficiency and different measures used to promote efficiency. It studied literature on indicators of efficiency such as liquidity, market capitalization, regulation, information transparency, technology and corporate disclosure. In line with that, it studied the implication of this determinant to an investor, how investor can interlink their decision making with the determinants of capital market efficiency. Furthermore it analyzed different measures which can be used to promote efficiency in capital markets. Finally the chapter ended with the chapter summary which recapped on major points of the chapter.

2.2 Determinants of Efficient Capital Market

Fama (1969) defines an efficient market as market in which prices of the securities reflect true available information at any time. Fama explains that an economy capital market is efficient when all the resource allocation process is due to production investments decision made under assumptions that security prices at any time reflects all available information.

The ability of a stock market to contribute to the financial development and growth of an economy depends on its informational, operational and allocation efficiency (Lagoarde-segot and Lucey, 2008). An efficient securities market relies on the availability of accurate information, expansive base of investors where by they can process the information presented to them. The legal protection of the investors rights and liquid market which lacks excessive transaction costs or restrictions.

2.2.1 Liquidity

An early definition of liquidity was found by Keynes (1930) considered an asset to be liquid if it’s more tradable on short notice without loss. He defined market liquidity as “a market is liquid if traders can quickly buy or sell large number of shares without large price effects”.

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In addition, Glen (1994) defined market liquidity as the ability to buy and sell particular stock with less market impact. This means the efficiency of trading system determines the simplicity that investors can buy and sell their shares thus, political, environment, macro-economic variables affects market liquidity.

A more specific definition of liquidity was founded by Black (1971), Harris (1990) and O’Hara (2004) whereby they distinguished four dimensions in liquidity. First is width, this referred to the bid-ask spread for a given number of shares and commissions and fees to be paid per share. Secondly, immediacy is how quickly trades of a given size can be done at a given cost. The third one is depths, which meant number of share that can be traded at given bid and ask prices. And the finally dimension was resiliency, it was characterized how fast prices relapsed to former levels after they changed in response to larger order flow imbalances initiated by uninformed traders. The four dimensions, do not stand independently, they interact with each other. For example, if a trader is ill and does not need to trade immediately, he/she may obtain better prices and be able to trade a large amount at a given price. Hence in this case width and depth depend on immediacy.

As recognized by Fama (1970) and Chordia, Roll and Subrahmanyam (2005) that a market that it’s efficient over a daily horizon might not have completely unpredictable returns from trade from time to time. An efficient market should allow investors to absorb new information about fundamental values. Liquidity facilitates market efficiency when the market capacity can accommodate larger order flow during the period when the market is liquidity.

Some of the recent studies reveal that securities mispricing is greater in illiquid markets (Kumar and Lee, 2006; Sadka and Scherbina, 2004; Wurgler and Zhuravskaya, 2002). The studies did not examine directly the deviation of securities price for fundamental values because the terminal cash flows of the securities are unobservable. As an alternative the researches relied on strong assumptions relating mispricing to observable alternatives for market efficient to estimate its relationship with liquidity.

Mendelson and Pedersen (2005) explained importance of liquidity in the stock market. It attracts firms to cross list in liquid markets. Liquidity also acts as a key indicator in the competition with other exchanges for order flow which is clear indicator of market efficiency. Further liquidity is a determinant of asset returns hence it influences decision on optimal capital structure. That’s is affirm can either finance investments inform of
shares, bonds or debt or internal finance will depend on the liquidity of the stock of the company. — Ellul and Pagano (2005) also establish that liquidity risk in the secondary market is a determinant of the under pricing of initial public offering. Additionally firms with more liquid equity have lower leverage and are more likely to finance through equity rather than debt which is an attraction to investors.

On the other hand some scholars (Blume and Keim, 2012; Mwesigwa, Tumwine, and Atwine, 2013) view that liquidity is a representation for non-informational trading, which is referred to as noise trading which is said to harm informational efficiency. Noise trading refers to making investments decision regarding buy and sell of securities without the use of fundamental values. Some behavioral finance models, limits rational agents from making aggressive bets against noise traders. These studies reveal that if liquid markets have more noise trading than illiquid markets and rational agents did not offset noise trader’s demand, then securities price in liquid markets might be inefficient relative to prices in illiquid markets.

2.2.1.1 Liquidity and Market Micro-Structure

The terminology market microstructure was investigated initially by (Garman, 1976), Garman investigated market making and inventory costs. Hence market microstructure has then been a collective term for financial literature describing economic forces affecting trades, quotes and prices that are the process which investors demand are translated into transaction. Market Microstructure consists of two participant, market makers and outside customers. In the group of outside customers they experience liquidity event, which lead them to notice a gap at a current price between their desired holding of a particular assets and their current holdings of that asset. Wuyts (2007) explains the relation of market micro structure and decomposition of the bid-ask spread into two components; first due to asymmetric information while the other part due to inventory costs, and market makers risk aversion. Adverse selection of components of bid-ask spread is not economically significant for small traders but increases with trade size.

2.2.1.2 Market Design and Liquidity

Wuyts (2007) reviewed the influence of transparency on liquidity. In general the results showed that more pre-trade transparency that is dissemination of ask-bid price lead to
higher liquidity where by the bid- ask spread is narrower and the price setters who have more knowledge on the price, protect themselves against losses to traders. In addition, the informed traders find that an auction market offers lower trading cost than a dealer market. Boehmer, Saar, and Yu (2005) also portrays the influence of pre-trade transparency by making the NYSE limit order book public which increased the pre-trade transparency. They found out traders changed their strategies due to this event thus traders submitted smaller limit orders and cancelled limits orders in the book more often. Further trading shifted from floor brokers toward electronic trading.

Foucault, Moinas and Theissen (2006) analyzed the effect of anonymity to liquidity. Anonymity refers to the degree to which the identity of market participant is revealed. The findings showed that informed traders preferred anonymous trading, while liquidity traders did not prefer anonymity. Furthermore hiding information of liquidity traders led to increase of bid-ask spread, since suppliers can’t make distinction between informed and uninformed traders. Jain (2005) explained the shift from trading floor to electronic trading on 120 stock exchanges and the impact it has on liquidity. Jain found out the cost of capital of listed firm declines and monthly trading turnover increased. Also the results showed that trading system offers lower spreads for liquid stocks while trading floor was more competitive for less liquid stock.

2.2.2 Technology

Increased integration and consolidation of financial markets and institutions, have led to changing technology and regulatory environment that altered the competitive behavior within the stock exchanges industry. Subsequently stock exchanges are now behaving more like ordinary firms adjusting to the dynamic environment changes which are characterized be increased automation, changing organizational governance and creating alliances so as to compete for increased market share, cost reduction and revenue maximization. The trends of changing stock exchange industry to adjust to the changing environment have been popular both in domestic as well as in global arena. (Hasan, Malkamaki, and Schmiedel, 2002).

The consequence of advancement in informational and communications technology has set to improve on the efficiency of the securities market. Technology has reduced the barriers to entry for providing financial services which in turn lead to minimization of transaction turnaround time costs. Additionally technology has allowed information to be
dispersed to a wide base of investors in real time and at low cost. On the other hand improvement in technology have made it easier for corporate insiders and financial intermediaries to improve on customer order flow by speedily trade on private information about customer order flow or company valuation (Avolio, Gildor, and Andrei, 2002).

Advancement of technology has lead to many firms to save money on staff and paper work through electronic order processing, billing and email. Hence a number of companies have used internet to provide competitive advantage in the increasing challenging financial industry. This in turn has lead to introduction of brokerage accounts which has revolutionize the stock market training in terms of volume and volatility (Ashraf and Joarder, 2009).

Electronic trading systems can enhance operational efficiency through two main channels. The first is the decrease in transaction charges reflecting the lower staffing costs resulting from the extensive use of computers, and the reductions in the costs related to maintaining a branch network made possible by the utilization of internet technology. The second is enabling the integration of all processes from the front-office to the back-office, or Straight Through Processing (STP), beginning with electronic order transmission, followed by the confirmation of transactions, monitoring of positions, and final settlement. Hence electronic trading offers cost efficiencies to customers as well, by lowering search costs for the best price available at the time of placing orders (Malone, Yates and Benjamin, 2001).

2.2.2.1 Forms of Technology Used In Stock Market

The emergencies of alternative trading systems have altered institutional trading practices. Trading systems have been grouped into two categories; crossing systems such as Informal Technology in a Global Society (ITG’s) in which institutional orders are brought together and are crossed at some prevailing price. Electronic Communication Networks (ECNs) such as Instinet which allows counter parties to trade anonymously at negotiated prices (Conrad, Johnson, & Wahal, 2003). These systems have developed in many stock exchanges. For instance the presence of nine ECNs account for 40% of the dollar volume of trading in NASDAQ securities (SEC, 2003).
Harris (2002) explains other forms of trading systems in the stock markets. Continuous limit order book which is an electronic limit order book, traders continuously post bids and offers on the system for other participants to view. A limit order is an order to buy a specified quantity of a security at or below a specified price, or sell above a specified price. The order book displays orders and typically ranks them by price and then by time a limit order book does not typically display the user’s identity, the order’s entry time, or the period for which the order is good this means limit order book promotes anonymity between traders and investors which is debatable if it impacts on the market efficiency. Moreover Winnie and Catherine (2005) explained that traders tend to provide liquidity when the bid-ask spread is large and the order book is thin.

2.2.3 Regulation

Securities regulation refers to the regulation of public issuers of securities, asset management products, primary and secondary markets, and market intermediaries. Capital market possesses unique characteristics which in turn affects the manner in which they are regulated. The unique feature is that on trading there is little or no contract between the issuers of shares and the investors purchasing the shares, further between parties in secondary trading (Malcolm, Tilden, Coope, and Xie, 2009).

The legal regime is the bedrock of strong and efficient security market hence there is a need to establish a regulatory arrangement that meets the needs of investors and issuers, generates capital inflows and promotes growth (Bratton and Joseph, 1999). For example the ground work of the United States and United Kingdom securities have strong legal and regulatory framework. Investment typically depend on experience and continuity (Coffee, 1999) for instance explains despite large scale privatization by the government the Czesh securities market failed in the 1990’s because investors had no confidence in the entire system.

Studies have shown that the legal regime plays a central role in the developmet of securities market (Milhaupt, 2009;Latimer, 2000) the legal framework determines the effeciency of the securities markets including how efficient capital can be raised and allocated. Furthermore it determines the intensity of regulations to ensure that ther is no over or under regulation. The studies acknowledges that despite the fact that ther are varying levels of enforcement between jurisdictions, the underpinnig reality is that as
long as the system is present, it seems to protect investors, and security markets will strive.

Choi (2002) postulated that the law has central role to play in the development of securities market. Its evident from studies that countries with deep securities have legal regimes that fulfill key functions in support of the markets and protection of property rights while retaining the capacity to adapt new markets realities and shift in demand for legal governance resulting from soci and economic condition.

Put it differently Gakeri (2011) postulated the legal framework must facilitate the proper functioning of the securities markets by ensuring the relevant disclosure requirement are complied with and the necessary institutional framework in place. In turn it will boost investor confidence and maintain market stability and importantly the legal regime should assimilate supportive cultural and institutional structures.

To clearly portray the importance and goal of regulation in the security market Ibrahim (2007) states that, in sum capital markets cannot flourish without an appropriate legal framework that reduces subjective decision making and encourages transparent and objective enforcement of laws and related regualtory framework. Ibrahim insists that ceratinity as the working and fairness of the system will attract more participation in financial markets and will curb interest groups that benefit from its weakness. On the other hand law also build social and cultural factors that enjoy similar obedience such as customary law.

On the other hand Roy (2002) argued that eventhough regulation makes the market efficient by increasing the amount of information available to the public, it’s a trend for companies to disclose less information in terms of quantity and quality to the market participants such as analyst, investors, traders and the market in general.

Hubbard and Thornton (2006) proposed that effective regulation requires some economic analysis. They explained that even though different regulation commissions have applied cost and benefit analysis to the proposed rules and regulation, they believed more can be done to assure regulations are achieving the intended effects in protecting the investors. Hence regulation commissions and self-regulatory organizations need to engage in a more risk based process, by focusing on the economic costs and benefits if regulation for companies and investors while strengthening shareholders protection.
2.2.4 Transparency

Transparency is the ability of market participant to observe information about the trading process. Information refers to the knowledge on price, the order flow, anonymity. Transparency can be divided into pre and post transparency. Pre transparency refer to dissemination of the bid and ask price of the stock, the depth and width of the price while post trade – transparency refers to the publication of trade and their details such as the prices and sizes (Gilson, 2000).

Madhavan (2000) did a survey on market micro structure which referred transparency as a major topic of interest. Madhavan summarized four major findings that, first transparency is relevant and affects price discovery, secondly some disclosure is better than no disclosure, thirdly complete transparency can reduce liquidity and lastly changes in transparency affect different groups.

Baker and Helene (2012) studied the effects of different grades of transparencies across different trading structure; they were more interested on the adverse selection in exchanges that differ in their level of transparency. They found that access to transparency by market makers is a bigger factor in transaction cost for customers than access to information by customer themselves.

2.2.4.1 Price Transparency

Price transparency helps investors obtain price information easily, which allows them to make useful comparisons of costs of alternative choices. Price transparency help understand the investors how prices are set and to know the intrinsic value of the stock. Since markets as efficient when prices reflect all available information and when prices adjust swiftly as new information arrives hence price transparency is of great role in promoting efficiency of the market (Zou, 2011).

The effects of price transparency in relate to the effect of publicity about pricing practices are inappropriate and they lead to regulatory involvement or investor backlash. For instance (Christie and Schultz, 1994) noticed that NASDAQ dealers almost never quoted prices using odd eights (i.e. 1/8, 3/8, 5/8 and 7/8) for many high volume stocks companies such as Microsoft, Intel and Apple. This practice in turn created quarter dollar minimum spread between asks and bids which increased trading profits for the dealers.
2.2.4.2 Information Transparency

Till to date there is no universal accepted meaning of information, believes that information is observation results based on which probability changes according to the conditions probability. The later scholars Chen (1998), made efforts to agree on one view point that information in economics in essence, states in economic and even probabilistic knowledge difference caused by difference among market participant. The informational efficiency of stock prices matter in two main ways according to first, investors care about whether various trading strategies can earn excess returns that is beat the market and second if stock prices accurately reflect all information, new investment capital goes to its highest valued use.

Zou (2011) explained that in practical stock markets, information asymmetry among different stakeholders is universal. For instance, institutional investors close to the information posed more information more than those individual investors who are far from the information. Furthermore the information is time sensitive that is investors who first receive bullish information can mobilize capital in time to preemptively buy cheap stocks, while participants who later receive information only follow the trend and purchase stock with prices already raised.

On the other hand Zou (2011) explained investors who receive bearish information earlier can sell stocks earlier to avoid loss, while participant receiving information later can only close positions with loss or get hooked. Furthermore Chen (1998), acknowledged that there is a significant difference between investors asynchronous receiving information hence speculative gains by making use of information may far exceed the normal investment returns. In turn if the market is occupied by such opportunities, imbalance between supply and demand can never be eliminated and prices continuously rise or loss and the market become unstable.

2.2.4.3 Corporate Disclosure

Corporate disclosure is important for the functioning of an efficient capital market. Firms provide disclosers through regulated financial reports which include financial statements, management discussion and other regulatory requirements. Moreover some other firms engage in voluntary communication include management forecasts, conference calls, and presentation internet sites. Additionally other disclosures including firm information
intermediaries like industry experts, financial analysts and the financial media platform (Healy and Palepu, 2001).

For a security market to function properly some requirements are crucial such as the availability of relevant, timely, accessible and reliable information. The quality of financial information as a result of sound financial reporting is of great importance for an efficient stock market. Corporate disclosure plays important role in capital market efficiency, information and incentive problems hinder the efficient allocation of resources in capital market. Therefore disclosure and the institution help to mitigate this problem (Kothari, 2001).

Information transparency is explained by Zou (2011) whereby information disclosure refers to disclosure of financial information of listed companies, but it should also include disclosure of natural states of all factors and events directly or indirectly impacting the market. Hence to increase disclosure the listed companies should disclose complete financial information, business status, competitive status, capital and dividend status, and the industry statues it belongs. Also the relevant state departments and media should disclose the macroeconomic information of the related stock. Finally, both institutional and individual investors should be willingly to pay the cost for mining and judging information related to stock markets.

2.2.5 Transaction costs

Trading of financial assets in secondary markets takes place at a variety of costs mainly refereed to transaction costs. However the level and behavior of transaction costs may be an indicator of market overall degree of efficiency both in operational and informational terms. Transactional cost is acknowledged in operational efficiency in terms of explicit cost. The costs include the expenses that are directly charged by brokers known as brokerage fees, the stock exchange known as exchange fees. In addition any inflexibility caused by processing order flow such as trading hours, taxes on trading volumes (Kang, 2012). Moreover transaction cost is also acknowledged in informational efficiency in terms of information asymmetry between the buyer and seller of a particular asset. Such transaction costs are referred to implicit cost because information asymmetries are not directly observable. Explicit cost lead to over pricing or underpricing of securities (Kissel, 2006).
Lesmond (2005) explained that reduction in transaction cost might lead to introduction of poorly informed participants in the markets that they would otherwise access information through professional intermediary who could screen some information which lead to information disadvantage to the investors. Instead of increase of market efficiency due to reduction of transaction cost, the market will be affected by less uninformed participants who hinder market efficiency and create social costs. Furthermore Lesmond discovered that online auctions, business to business (B2B) exchange and other new forms of trading mechanisms are affected by reduction of transaction cost.

Transaction cost can be measured by stock turnover in correspondence to trading intensity. Lesmond (2005) explained this method that’s stock turnover is the ratio of physical volume traded and amount of shares outstanding for each class and firm. The implication of this method relates is that a higher turnover would lead to higher liquid in which in turn lead to low cost for that security. However the method is deemed to be inadequate of transaction cost at times of crisis, volume turnover, and uncertainties of the security.

In turn, Ahimud (2002), proposed another method of measuring transaction cost. The measure uses the ratio between a stocks daily’s return absolute value and its daily financial volume trading. The concept of price impact corresponds to this measure, in that it measures the reaction of prices to the flow of buy and sells orders. This method implied the higher the value of that measure, the higher the stock transaction costs. Nevertheless the measure does not result in cost estimation.

Gu and Hitt (2001) developed a model that analyzed the adverse effects of declining of transaction cost. They observed a relationship between intermediary fees and investor’s participation. That an investor can either access the market directly which the investor will incur transaction costs or can use an agent by paying a fixed fee. The model proposed agents are risk neutral, have zero transaction costs, possess perfect information regarding the value of the stock while investors are risk averse, have positive transaction cost and possess worse information regarding an asset than the agent. The model concluded that an investor will choose a transaction medium that will provide the highest expected utility.

Furthermore the effects of transaction cost and price volatile is observed by (Liu, 2004). The results portrayed that as transaction cost decline, more investors enter the market directly. The presence of this informed investors leads to creation of fluctuation in the
demand and supply of the risky asset leads to price fluctuation. In addition, Gu and Hitt (2001) examined the relationship between social welfare and transaction costs. Social welfare can be understood as the aggregation of all investors’ utilities and the utilities of the agents. The utilities of investors and agents are decomposed into the value of transaction, the total transaction costs, cost of imperfect (noise) information and lastly cost of uncertainty in assets returns. The results showed in a market with two types of investors the lower transaction cost won’t change the valuation of transaction, only the total transaction cost of noise and cost of uncertainty will increase hence reduction of transaction cost reduces social welfare.

2.3 Implication of Determinants of Capital Market Efficiency to an Investor

The determinants of capital market efficiency are a part of a well-functioning securities market which relies on the availability of accurate information, a wide base of investors, whom can process this information and legal protection of these investors right and a secondary liquid market without excessive transaction cost or constraints. When such conditions are fulfilled, securities are said to be broader and more efficient with effective consequences for investments, resource allocation, and cost efficient.

2.3.1 Implication of Liquidity

A liquid stock market allows savers to sell shares easily, in-turn it leads to firm to raise equity capital on favorable terms, by facilitating longer-term and more profitable investments. Liquidity leads to lower transaction costs which enable investors to be actively exchanging securities without an adverse effect on price. On the other hand illiquidity in the stock market leads to many profitable long-term investments not to be undertaken because savers become reluctant to tie up their investments for a long period of time (Jain, 2005).

Liquidity leads to lower transaction costs which enable investors to be actively exchanging securities without an adverse effect on price. Coffee (1991) explained the US policies that promoted liquidity which lead to obvious benefits to the investor. Thus investors can cash their asset quickly and diversify cheaply however the same policies lead to impair of corporate governance by encouraging diffuse stock holders and discouraging active investing.
Wuyts (2007) explained the reason why investors are more likely to participate in the market is that they can be able to buy and sell stocks easily, quickly and at a low cost or when liquidity is high. In a market where liquidity is high, there is a greater number of participant which they limit the price impact of traders and hence increase of the stability in the markets. Moreover in a model proposed by Vayanos (2004) showed that a period of high volatility are associated with flight to liquidity that’s risk premium investors require an increase of per unity of volatility hence more returns. Vayanos also explained illiquid assets become riskier since their market betas increase. Hence liquidity can be viewed as risk reducing and investor will be willing to hold assets that have greater liquidity.

Mendelson and Pedersen (2005) demonstrated that investors prefer stocks that are liquid and transparency is a major factor which improves liquidity. Never the less investors’ concern is broader than the average level of liquidity since what matters is the liquidity of the stock at the time of transaction. Mostly investor prefer firms with predictable liquidity since investors can be able to anticipate the trends of trading costs associated with the transaction. Hence a stock liquidity increases uncertainty attached to a stock which in turn limits the investor’s flexibility.

The International Forum (2010) explained the relationship between use of electronic trading and liquidity of the market. The forum explained a research paper on the background to the Joint Report on the Flash Crash which revealed an interesting fact that towards the end of the Flash Crash, some high-frequency traders intensified their activities as market liquidity declined dramatically. Declining market liquidity meant the absence of their usual trading counterparties, and thus these high-frequency traders repeated and intensified their automatic high-speed trading among themselves. Their activities led to sizable price volatility in a very short period of time.

2.3.2 Implication of Technology

Advancement in information and communication technology has lead institutional and retail investors to enjoy ease on trade execution via technology innovations such as online accounts. In turn these changes have expanded market participation and facilitated increases in trading volume. Furthermore, Avolio, Gildor, and Andrei (2002) revealed that technology has impacted in improving the quality of investors legal rights this is by technology has made possible for new regulations to be known to investors. This was due to For instance management conference calls which were previously limited only to
favored investments bank analysts and large fund managers, now they are available to the general public through internet telecasts.

Furthermore a noticeable contribution of technology to the financial markets is cheap, real time delivery of immense amounts of data. Both institutional and retail investors with accessibility to internet connection now have access to 24-hour a day to news, current and historical prices, economic data, financial reporting data, analyst forecasts, investments advice and opinions of other investors. Moreover web technology provides investors with continuous updates about the performance of their investments portfolios (Ashraf and Joarder, 2009).

Increase in transparency may protect investors while it can also benefit market makers if there is an increase in volume. For retail investors, financial services on the web offer great benefits. The primary benefit is the reduced cost of transactions for all concerned as well as the ease and the convenience. Web-driven financial transactions bypass traditional hurdles such as logistics (Conrad, Johnson, and Wahal, 2003).

The wider use of electronic trading systems enables customers to directly access a larger number of markets, which in turn blurs the distinctions between interdealer markets and dealer-customer markets. Even where customers may not have direct access to interdealer markets, they may still enjoy benefits. For instance, higher transparency in dealer-customer markets, and trading at prices closer to interdealer market prices, reflecting higher transparency in the interdealer market and the introduction of electronic trading systems for customers that quote prices closely linked to the interdealer-market prices (Steil, 2002).

On the other hand, technology improvement has led to manipulation of the market algorithms, incorporate information available on limit-order books to estimate current supply-demand imbalances that might be open to exploitation. It’s important to note that such information gathering activities are necessary for properly functioning markets, and that human dealers are also engaged in similar activities. At the same time, it is true that illegal attempts to manipulate the market may be hidden behind such information gathering activities. Hence the high-speed algorithmic trading makes such illegal market manipulation ever more sophisticated and harder to detect. Hence insiders or people who
have access to the market information will have impact on the investor’s decision making process (International Forum 2010).

### 2.3.3 Implication of Regulation

The strict enforcement of the laws and regulations is necessity for the protection of investors, otherwise, the laws and regulation would only remain on papers without being actual effective. Lack of sound and efficient regulatory system leads to agency problem from the outlook of corporate governance, managers of the firms might not act in the best interest of their share holders including the investors Milhaupt (2009).

An efficient capital market is a product of standard regulations that are implemented diligently. U.S. Chamber of Commerce (2008) explained the effects of proper regulation of capital market to investors. Individuals need regulation reforms since they rely on capital market for their investments. Many investors are depending on the capital market to fund for their retirement, college tuition and higher quality life.

On the other hand International Capital Market Association (2013) explained that regulations are now counterproductive and they yield negative effects to the investors. The study showed that many of regulation overlaps, conflict with each other and their inconsistent with regulaltory initiatives and have consequences from their cumulative impact on investors as well as stock markets. This in turn has led to higher issue cost for investors as well as corporates and higher portifolio management risks for an end investors. In addition it has led to slow down of the speed and efficiency of the settlement process of the investor and a volatile price action of the stocks.

Katz (2009) proposed that a better regulated capital market has benefits in driving economic activity and expansion to ensure efficient operation in business. This is implemented by connecting those with capital and those who need capital, by developing products and services that manage financial risk and lastly by providing investors access to diverse investemt opportunities. Furthermore Hubbard and Thornton (2006) proposed to maintain and enhance the value of public markets, neccesary organisation should do a better job of assessing and evaluating the benefits and costs of legal and regulatory system and strengthen the right of shareholders including investors.


2.3.4 Implication of Transparency

Economist such as Fama (1965) explained the information sensitivity among investors. Fama believes that irrational or less informed trades also known as noise traders have less or no impact on asset price they do not affect market efficiency. While sophisticated investors will trade against the uninformed investors and they will push price close to their intrinsic values. Furthermore in the course of trading less informed traders will lose money and will be cleared from the market. This explanation only holds in the assumption that informed investors can full arbitrage from less informed investors which Black (1986) explained the assumption only holds when the informed investors have unlimited financial resources as well as infinite time horizon.

Due to nature of capital market that the parties in the exchange process have little or no contact, hence investors rely on provided information which must be accurate, timely, and relevant and information on the condition of companies in which they are to invest. This information in turn enables investors to rationally decide whether to invest or not to invest in a company. Furthermore the information provided leads to wide participation in the market, which means there is level of new information amongst potential investors. In contrast to this lack of this information to this information or when some investors insiders have more information than others it will lead for investors with less information reduce amount of trading they were willing to trade (Gilson, 2000).

For a security market to function properly some requirements are crucial such as the availability of relevant, timely, accessible and reliable information. Lack of the later characterized information, will lead to investors misprice securities. Additionally investors might prefer holding cash rather than investing in securities traded in financial market (Baker and Helene, 2012).

According to Vayanos (2004) transparency provided investors necessary information such as future cash flows, it reduces uncertainty about intrinsic value which it reduces the sensitivity liquidity to market shock. Additionally Winnie and Catherine (2005) proposed for transparent stocks, the firm – level liquidity is irrelevant to be subjected to market wide liquidity shocks this is due to that more firm specific information permits investors to differentiate between stocks.
More transparency is associated with more informative prices which in turn lead to hinder liquidity because traders are most likely to be unwilling to reveal their trade intention. Hence more transparency has different effects on all market participants. Example informed traders prefer less transparency while liquidity traders prefer more disclosure (Healy and Palepu, 2001).

2.3.5 Implication of Transaction Costs

A lower transaction costs enable investors to pay (receive) the fair value whenever they buy/ sell securities. Which in turn it would encourage willingness to hold securities among investors as they would be assures of cashing their investments at a reasonable price (Kang, 2012).

Studies such as (Clearly, Kerr, and Schmitz, 2002; Liu, 2004) revealed that reduction in transaction cost have had benefits to investors as well as relevant shareholders. It has led to direct cost savings, indirect benefits through enhancements in agency costs, monitoring and coordination within existing organization and markets and further it has led to creation of new types of market structures which are more efficient. On the other hand Samer and Hassan (2003) explained not all transaction costs are beneficial since lower transactions in other market scenario leads some participants to become more informed than others.

Gu and Hitt (2001) explained the relationship between an investor and use of intermediary such as an agent. In the model they propose that when individual direct transaction cost reduces that is direct participation of the market, the agent reduces its fee but the price between the transaction costs and agent fee increases. In this proposition results suggest that transaction cost declines but the agent receives less revenue and a smaller share of transaction even though the agent have cost advantage in accessing the market and better information than investors.

Baker and Helene (2012) give evidence that higher transaction cost is of benefit for growth and investors. They explain that an increase in transaction cost can drives out noise traders who make the markets more volatile and highly informed trades who succeed at arbitrage gaining would be turned to normal investors. In addition to that they believe high transaction cost lead to free up of resources by reducing the volume of
trading hence resource will be available for other investments which will increase productivity and growth.

2.4 The Best Adopted Measures Used To Promote Efficiency

Understanding different measures used in developed, emerging and developing stock markets to promote efficiency in their particular stock market is of great importance in this study since it gave insights on the challenges, success of each measure and hence it facilitated choosing the appropriate strategy for Dar es Salaam Stock Exchange and benchmark with the best stock market in the global market.

2.4.1 Demutualization of Stock exchange

Traditionally stock exchanges have been mutual structured; access to trading floor was restricted to intermediary’s members. In addition, regulatory barriers creating regional or national monopolies protected trading business. The mutual structures assured the monopoly power and the extraction of monopoly rents as empirical evidence (Pirrong, 1999).

The benefits of demutualization as stated by include a more flexible governance structure, greater investor participation in the governance of the exchange, greater flexibility and access to global markets, faster and more complete consolidation of stock exchanges to enhance available synergies and increased resources for capital investments raised by way of offerings by the exchange either equity or private investment to unlock stock exchange value (Hart, 1996).

According to Kenyataa (2009), he supported demutualization since it segregates the current members ownership and trading rights without belabouring the practice and the stock market will be in line with modern exchanges and future for all stock exchanges. He mentioned different stock exchange which have succesfully implemented demutualization process Toronto Stock Exchange (Canada), Chicago and New York Stock Exchanges (USA), Australian Stock Exchange (Australia), Hong Kong Stock Exchange (Asia) and Johannesburg Stock Exchange (Africa).

The main advantage of demutualization is also its main set back, demutualization separates trading and ownership rights diversifying the exchange shareholder base while
the traditional owners of stock exchanges members lose power and influence in exchange decisions; hence it’s naturally that they will resist demutualization. Fleckner (2005) reported that, this is what caused the first time NYSE to demutualize in 1999 due to resistance of the members.

Steil (2002) pointed out that a high level of direct competition between exchanges makes it difficult for members to block reforms and protect their intermediation rights, becoming more open to governance reforms and outside ownership. Despite being the largest stock NYSE faced stiff competition; domestic rivals had also demutualized some like NASDAQ adopting a more entrepreneurial attitude.

Capital Market Authority (2007) clearly investigated on challenges and benefits of demutualization, the findings postulated that Kenya is ripe for demutualization from the support offered by the market players and the government as well as technology that market players are experiencing. However the main challenge was the tension between Capital Market Authority (CMA) and Nairobi Stock Exchange (NSE) with politicking of the NSE leadership. The market players are however very optimistic about the process as they demutualization felt will improve governance and market efficiency which will make NSE competitive against alternative trading systems. The research recommends that the CMA should not overplay its supervisory role to interfere with NSE plans and government should also participate in facilitation of demutualization process.

2.4.2 Technology Improvement

As capital market grow in emerging economy, automation of the stock market is regarded as a major step towards integrating the financial market in pursuit for economic growth and efficient stock market. The literature assets that the introduction of automation on the stock market enhances information flow and efficiency, as information are quickly transmitted to all relevant agents and the markets. However, there is still a lack of research that analyses the role of automation in stock market efficiency even though few that exist there is a mix in empirical findings (Steil, 2002).

Freund and Pagano (2000) used non parametric statistical analysis to measure the degree of market efficiency before and after automation at the New York and Toronto Stock Exchanges. Their result indicated that the level of information efficiency in the exchanges remained effective the same during automation period. In addition the findings further
reveal automaton in the exchanges coincides with an improvement in market efficiency in Toronto Stock Exchange relative to the New York Stock Exchange.

Using parametric and non-parametric approaches analyzed the degree of informational efficiency before and after automation in Jamaica (JSE), Trinidad and Tobago (TTSE) strong exchange mixed results that exchanges are highly inefficient before and after automation period. Further Benouda and Mezzez (2003) found out automation of the Tunisia Stock exchange (TSE) increased liquidity of shares, decreased returns but it did not have any impact on volatility or efficiency.

On the other hand Smith (2008) used Unit Root Random walk and GARCH model to analyses the efficiency of Ghana Stock Exchange (GSE) pre and post automation sample period, the result were GSE was highly inefficient after both times, suggesting that automation have not yielded the needed impact towards improving the efficiency.

On the other hand technology has led to market vulnerability induced by the presence of electronic trading. In particular, algorithmic trading is vulnerable to unpredictable events. Example in May 2010 the Flash Crash caused a violent fluctuation in prices over some ten minutes in the U.S. equity which was due to the start of the Flash Crash episode, one algorithm’s automated execution of a very large sell order confused and dislocated other algorithms. As a result, many market participants, whether algorithmic or human, refrained from buying, and thus market liquidity decreased sharply, leading to unusual turbulence in several stocks. Mechanistic algorithms may not be able to respond properly to unexpected and unprecedented events in the same way as humans, who have common sense. In such circumstances, the human brain performs better than the digital computer (International Forum 2010).

The preceding reviewed indicated that a lot of investigation has being don’t on stock market efficiency across different markets in the world, never the less little has been done on the potential role of electronic listing in stock market efficiency both in developed and especially in emerging markets.

2.4.3 Transparency

The (U.S. Chamber of Commerce , 2008) advocated that the US capital market to start adapting to global accounting and auditing standards as a way of making a strong capital market. The proposal is said to support foreign companies listed in the United States to
use International Financial Reporting Standards (IFRS) to reconcile their financial statement.

Gilson (2000) explained the relationship of transparency and corporate governance and how it impacts on capital market efficiency. Corporate governance involves the monitoring of the corporation performance and monitor capacity to respond to poor performance. On the other hand transparency involved the ability of equity market to observe corporates performance. Hence corporations have an incentive to voluntarily provide financial information in order to lower its cost of capital. However, Gilson argued that delivering information to investor is easily the challenge is delivering credible information is hard. Hence an efficient capital market requires good corporate governance which has a capacity to make credible disclosure of financial results.

According to Zou (2011), suggested that to improve the information efficiency of stock markets, we should let the prices of stock fully reflect all information relate to pricing and guide investors to reasonable anticipate relevant information so as the prices’ should portray the intrinsic value of the stock. In his research he concluded that informational efficiency will be in optimal state only when the markets operation and information transmission mechanisms are fully effective and its information completeness degree is optimal.

2.4.4. Regulation

Numbers of regulators in the Canada stock market have taken necessary steps in making security system more efficient. (Canada Bankers Association (CBA), 2003) explains the steps including National Instruments which have helped to reduce differences in regulatory systems and has led to efforts in creation of Uniform Securities Law. Other progresses include mutual reliance system where provinces and territories can rely on fair judgment in relation to related material and also creation of electronic filing system to promote fairness and accuracy. Furthermore CBA adds that there is a need for governments and ministries to commit on improving the securities regulatory system.

A number of stock markets show their regulation effectiveness in relation to capital market efficiency. Example the U.S Chamber of Commerce’s Center for Capital Markets Competitiveness (CCMC) is an entity that ensures the nation’s capital markets are the most fair, efficient and innovative to players of the capital market. In 2008 the CCMC
chambers proposed way in which regulation can promote efficiency; first by establishing modern and coherent regulatory system. Implementing a global corporate financial reporting, by restoring fairness to legal, regulator and enforcement process and lastly by promoting innovation and long term interests of all investors (U.S. Chamber of Commerce, 2008).

Carson (2011) explained the important of self-regulation as part of the regulatory structure of securities market in developing as well as developed economies. Use of Self-regulatory organizations (SRO) leads to more efficient capital market, which enable business to get public equity and debt market for capital at reasonable cost. However, Carson explains that the value of self-regulation has been debated. This is due to forces such as commercialization of exchanges, globalization of capital markets, development of stronger regulator authorities have affected the effectiveness of self-regulation.

### 2.4.5 Financial Market Liberalization

Financial Market liberalization have been pervasive amongst many countries, especially liberalization of equity markets have important implications on growth and investment. Hence financial liberalization is of crucial importance to market efficiency.

Kim and Singal (2000) studied the impact of market opening in emerging markets and find that benefit are likely to outweigh the perceived risks associate with foreign portfolio flows. This increase in efficiency was followed by better allocation of capital and an increase in the productivity of capital. However the main challenge of financial liberalization is that it’s complex and it takes many years to mature. Hence the markets have to take care of announcement dates, and more vigorous methods to promote the maturity of the liberalization (Kim and Singal, 2000).

Perera (2012) analyzed the effects of stock market liberalization on emerging equity prices, the evidenced showed that liberalization reduced the cost of capital, allowing risk sharing between domestic and foreign agents. Using panel data from developing countries, Perera found that financial liberalization is associated with higher marginal return to capital and reduce variation in expected marginal returns (Perera, 2012).

Using both parametric and non parametric tests (Odabasi, Aksu, and Akgiray, 2004) observed Turkish stock exchange has become efficient over the period 1989-2003 that proxies used for information asymmetry have explanatory power in terms of speculative
trading. They argued that foreign trades may have information advantage due to better access to expertise and talents and local market participants emphasize the impact of their trades improving market participant.

Ewah, Esang, and Bassey (2009) contended that, the liberalization of capital market contributes to the growth of the Nigeria capital market, yet its impact at the macro-economy is quite negligible. While in another exposition the Romanian capital market the market is inefficient and hence cannot contribute to economic growth in Romania. The study further show that financial liberalization has made East–Asian capital markets such as Singapore, Hong Kong and Bangkok develop over time to the extent that they are presently regarded as international centers of Asia. In contrast the past years saw comparatively little change in the capital market of Sub-Saharan Africa.

Generally the efficiency of the stock market is of importance to the growth of the nation economy as well as the increase in investors both locally and foreigners. Stock markets such as NASDAQ, New York Stock Exchange, and London Stock Exchange are a great booster of the nation’s economy. Hence analyzing the Dar es Salaam Stock Exchange, knowing the challenge and applying the best measures to the stock exchange it will lead to the efficient stock market which on the other hand increases the nation’s generally economic development.

2.5 Chapter Summary

This chapter explained different literature that related to capital market efficiency, determinates of capital market efficiency and the implication of determinates of capital market efficiency to the investors. It explained the concept of market efficiency, determinates of capital market efficiency which are liquidity, technology, transparency, regulation and transaction cost. Furth more it explained the determinants of the market efficiency to the investor’s decision making process. Finally it explained and acknowledged different measures that can be used to promote efficiency and the outcomes of this measure. Chapter three explained on the research methodology, the methods and procedures that was used to conduct this study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the research methodology and procedure which were used for collecting and analyzing data in the study of efficient Capital Market the case of Dar Stock Exchange. Research design, population, the sampling frame, data collection, data analysis and finally the chapter summary are discussed in this chapter.

3.2 Research Design

This study employed the descriptive research design. Cooper and Schindler (2008) view descriptive research design as creating a profile of decision regarding what, where, how, much by what means concerning an inquiry or a research study. Moreover descriptive research design enabled the researcher to reduce biases associated with qualitative data. The study sought to measure the efficiency of capital market efficiency the case of DSE and the impact it has on investors. The nature of this research prompted the use of quantitative approach. Therefore, a descriptive design was justified for this study as the research sought to make inferences on determinants of capital market efficiency, implication of capital market efficiency and measures used to promote stock market efficiency. The independent variables in this study were the determinant of efficiency in the capital market, the implication of the determinants to investors of DSE and different measures used to promote stock market efficiency. The dependent variable was efficiency of the DSE.

3.3 Population and Sampling Design

3.3.1 Population

Cooper and Schindler (2008) defined population as the total of the elements upon which inferences can be made. A sample is concerned with the selection of a subset of individual from a population in order to estimate characteristic of the whole population.
The population of the study comprised of the players in the stock market industry. These include institutional and individual investors and authorized brokerage firms in DSE. The target population of institutional and individual investors was obtained from the Central Depository System (CDS) database. The target population of brokerage firms was obtained from Capital Market Securities and Authority (CMSA). The companies listed and the authorized stock brokers are listed in appendix. The population was made up 180,000 investors, 15 institutional investors, and 7 Brokerage firms. The researcher targeted 2 target respondents in each institution organisation and 2 respondents in each brokerage firm.

3.3.2 Sampling Design

3.3.2.1 Sampling Frame

Cooper and Schindler (2008), described sampling frame as a complete list of all the cases in the population from which your sample was to be drawn. In this study, the criteria for selecting the sampling frame of authorized brokerage firms was obtained from the Capital Market Securities and Authority (CMSA) and sampling frame for individual and institutional investors was obtained from Central Depository System (CDS) database in DSE. The sampling frame was made up 180,000 investors, 15 institutional investors and 7 brokerage firms which was obtained on February 2014. This ensured the sampling frame was current, complete and relevant for the attainment of the study.

3.3.2.2 Sampling Technique

This study adopted a non-probability. Jankowicz (2005) explained non-probability as a sampling technique that does not use chance selection instead they rely on personal judgment of the researcher. The researcher adopted convenient sampling technique which attempts to take subjects under study which are conveniently accessible to a researcher. This is because convenience sampling is easier for the researches to select the target sample, also it’s a best sampling technique to gain ideas about a particular subject and finally provides a greater speed for data collection. The researcher implemented sample representatives, and diversity to conduct convenience sampling (Cooper and Schindler, 2008). The researcher used convenience sampling for authorized brokerage firms, individual and institutional investors.
3.3.2.3 Sample Size

The sample size is a smaller set of the larger population (Cooper and Schindler, 2008). Cooper and Schindler (2008) argue that the sample size is important for economic reasons. An under-sized study can be a waste of resources for not having the capability to produce useful results, while an over-sized one uses more resources than are necessary. The researcher adopted a confidence level of 90% and margin of error is 10%. To obtain a sample size that has an adequate size relative to the goals of the study, the researcher adopted Yamane’s formula is as follows:

\[
n = \frac{N}{1 + N (e^2)}
\]

Where \(n\) is the sample size, \(N\) is the population size and \(e\) is the margin of error (Yamane, 1967).

\[
n = \frac{180,000}{1 + 180,000 (0.1)^2}
\]

\[
n = 100
\]

The researcher used census in choosing the sample size of institutional investors and brokerage firms (Professional Respondents). This was because the population was small and the elements of the population were different from each other. According to the CDS database and CMSA, institutional investors were 15 and brokerage firms were 7 respectively. The researcher targeted 2 respondents from both the institutional investor’s organization and the brokerage firms.

Table 3.1: Sample Size Distribution

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample Size</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Investors</td>
<td>100</td>
<td>69%</td>
</tr>
<tr>
<td>Institutional Investors</td>
<td>30</td>
<td>21%</td>
</tr>
<tr>
<td>Brokerage firms</td>
<td>14</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>144</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

3.4 Data Collection Methods

The research relied on primary data collection. Data was collected using questionnaires which were developed on the basis of research objectives. Cooper and Schindler (2008)
explain that questionnaire are an important data collection tools because they provide an effective and efficient way of gathering information within a very short time. The questionnaire comprises of closed and open ended questions. Closed ended questions were used since they are not only easy to analyse but also they facilitated harmonisation of information obtained from the respondents. More over open ended questions were used to explore issues in more depth since respondents use their own words and opinions to answer the questions. The first questionnaire addressed to institutional investors and brokerage firms (professional respondents) comprised of four sections; First section contain the background information of the respondents, the second section addressed the determinants of capital market efficiency, the third section gathered data on implication of the determinants of efficiency to an investor and the fourh section comprised on different measures to promote efficiency of the stock exchange. On the other hand the second questionnaire addressed to individual investors comprised of two sections; First section comprised of background information of the respondents, and the second section addressed the implication of determinants of efficiency to an investor. A 5-point likert scale applied and it expressed it consist of a series of statements that express strongly agree to strongly disagree.

3.5 Research Procedures

The questionnaires were formulated for the two categories of respondents institutional and brokerage firms (professional respondents) and individual investors. A pilot test was first conducted to adhere to the fundamentals described by Cooper and Schindler (2008) who defines pilot test as a tool that should be adminstired so as to detect weakness in the research design and the instruments. The pilot test was set for 15 respondents which were distributed to 5 brokers, 5 individual investors, and 5 institutional so as to test the reliability, capability and relevance of the tool. The questionnaires were self administered by the researcher through hand delivery. The researcher used emails and text messages to increase the response rate. The questionnaire were distributed and collected after 2 weeks.

3.6 Data Analysis Methods

The collected data was coded according to each variable of the study. Then the data was edited and was statistically analyzed by the Statistical Program for Social Scientists
The study used descriptive statistics. According to Cooper and Schindler (2008), descriptive analysis involves a process of transforming a mass of raw data into tables, charts, with frequency distribution and percentages, which are a vital part of making sense of the data. In this study, the descriptive statistics such as percentages and frequency distribution were used to analyze the demographic profile of the participants. The demographic data was tabulated using frequency and percentages. Correlation was used to investigate the relationship between the variables used. Correlation was useful in establishing degree of relationship between analyzed variables. In order to describe the data, the study used percentage of each variable.

3.7 Chapter Summary

This chapter highlighted the various methods and procedures the researcher adopted in conducting research on effectiveness of capital market, the case of DSE. The chapter was organized in the following structure: the research design, population and sample, data collection methods, sampling design and sample size, research procedures, data analysis methods and lastly the chapter summary. The population consisted of institutional investors and brokerage firms (professional respondents) and individual investors. The study used convenient sampling method to select the sample size. The data was collected using two structured questionnaire addressing institutional investors and brokerage firms (professional respondents) and individual investors. The questionnaire was pre-tested by the professional’s respondents and individual investors. Chapter four presented an analysis of the information gathered from the field on the basis of the research specific objectives.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction
This chapter addresses the results and findings on efficiency of the stock market the case study of Dar es Salaam Stock exchange and the impact it has on the investors. The findings are outlined according to the specific objectives of the study. The findings are based on the responses from the questionnaires filled and information gathered on the research objectives. The first research objective determined the current state of determinants of stock market efficiency. The second objective explained on the implication of determinants of stock market efficiency on investors, and the third objective was to identify best adopted measures which are can be used to promote the efficiency of the stock market.

Table 4.1: Response Rate Analysis

<table>
<thead>
<tr>
<th>Category</th>
<th>Target Respondents</th>
<th>Response</th>
<th>Response Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Investors</td>
<td>30</td>
<td>30</td>
<td>100%</td>
</tr>
<tr>
<td>Brokerage Firms</td>
<td>14</td>
<td>14</td>
<td>100%</td>
</tr>
<tr>
<td>Individual Investors</td>
<td>100</td>
<td>80</td>
<td>80%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>144</strong></td>
<td><strong>124</strong></td>
<td><strong>86%</strong></td>
</tr>
</tbody>
</table>

As demonstrated in the study 86% of the target respondent’s responded to the study while 14% did not respond. Thus, the response rate was representative enough to answer the research objectives.

4.2 Demographic Analysis
This section analyzed the general information of brokerage firms and institutional investors (Professional Respondents) and individual investors.

4.2.1 Institutional Investors and Brokerage Firms Respondents (Professional Respondents)
This section analyzed on the professional respondent’s demographic information. The demographic section was organized as follows: the position held in the firm, time of participation in DSE, level of academic education, level of professional education and lastly investors target group.
4.2.1.1 Respondents Position in the Firm

The findings on figure 4.1 illustrated that 23% of respondents were investment analysts, 18% of respondents were financial managers, 16% were brokers, and 14% of respondents were manager researchers. The findings indicated that most respondents had high level of responsibility in their respective firm.

![Respondents Position in the Firm](image)

**Figure 4.1: Respondents Position in the firm**

4.2.1.2 Years Participated in DSE

The results on number of years participated in DSE revealed that 46% of respondent participated between 3-5 years, 32% of respondents participated between 6-10 years, and 16% of responded were over 10 years. The results showed that a large number of respondents have experience and knowledge on DSE as indicated in Table 4.2.
Table 4.2: Years Participated in DSE

<table>
<thead>
<tr>
<th>Number of years Participated in DSE</th>
<th>Data Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td>3-5 years</td>
<td>20</td>
</tr>
<tr>
<td>6-10 years</td>
<td>14</td>
</tr>
<tr>
<td>Less than 2 years</td>
<td>3</td>
</tr>
<tr>
<td>Over 10 years</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
</tr>
</tbody>
</table>

4.2.2.3 Level of Academic Education

This section analyzed the level of education from the respondents in the study. The brokerage firms and institutional investor’s questionnaire and individual investors' question. The results revealed 61.4% brokers and institutional investors’ respondents were graduates and 50% of individual investors respondents were graduates. The findings revealed that most of respondents were relatively well educated as indicated on Figure 4.2.

![Level of Academic Education](image)

**Figure 4.2: Level of Academic Education**

4.2.2.4 Level of professional Education

The findings in Figure 4.3 revealed that 36% of respondents had CPA, 34% of respondent had ACCA, and 23% of respondent had CMSA dealer certification. This reveals that most of the respondents are relatively professionally educated.
4.2.2 Individual Investors Respondents
This section analyzed the respondents from individual investors. The demographic information of the individual investors consisted of; gender of respondents, number of years investor has invested in the stock market industry and the level of academic education.

4.2.2.1 Gender
This section analyzed the gender of the individual investors, the results revealed that 54% of respondents were male and 46% of respondents were female. That reveals that most of the respondents were male as indicated on Table 4.4.
4.2.2.2 Level of Academic Education
This section analyzed the level of academic education of the individual investors’ respondents. The results discovered that 50% of respondents were graduates, 36% of respondents were post-graduate and 14% of respondents were 14%. The results are indicated in Figure 4.5.

![Level of Academic Education](image)

**Figure 4.5: Distribution of level of Academic Education**

4.2.2.3 Number of years she/he invested the industry.
This section analyzed the number of years individual investors have invested in the stock market. 34% of respondents have invested for between 1-5 years, 54% of respondents have invested between 5-9 years, and 12% of respondents have invested between 10-12 years. The findings reveal that most of respondents have invested in DSE for 9 years and below as indicated in Table 4.3.

**Table 4.3: Number of Years Invested in the Industry**

<table>
<thead>
<tr>
<th>Number of years she/he invested the industry</th>
<th>Data Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td>1-4</td>
<td>27</td>
</tr>
<tr>
<td>5-9</td>
<td>43</td>
</tr>
<tr>
<td>10-12</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>
4.3 Determinants of Capital Market Efficiency

This section aimed at analyzing the determinants of capital market efficiency in the DSE. This was measure by variable such as liquidity, technology, regulation, transparency and transaction costs.

4.3.1 Liquidity

This section measures the liquidity of DSE market. Liquidity measures the ability to buy and sell particular stock with less market impact O’Hara (2004). The findings revealed that 55% of respondents strongly agreed that the market is able to accommodate large stock orders which influence the liquidity in the market. However 50% 0f the respondents strongly disagreed that brokers in the market prefer to be anonymous. Moreover 51% of the respondents disagreed that stock price quickly returned to former levels after they changed in response to large stock orders .Lastly 64% of the respondents strongly disagreed that brokers determine commission and fees to be paid using bid-ask spread. The findings reveal that most respondents perceive the DSE market to some extent is liquid. The findings are indicated in Table 4.4.

Table 4.4: Liquidity

<table>
<thead>
<tr>
<th>Liquidity</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brokers buy and sell large number of share without large changes in price.</td>
<td>21 49%</td>
<td>13 30%</td>
<td>2 5%</td>
<td>6 14%</td>
<td>1 2 %</td>
</tr>
<tr>
<td>Brokers determine commission and fees to be paid using the bid-ask spread.</td>
<td>28 64%</td>
<td>12 27%</td>
<td>- -</td>
<td>3 7%</td>
<td>1 2%</td>
</tr>
<tr>
<td>Stock price return to former levels after they changed in response to large stock orders.</td>
<td>21 48%</td>
<td>18 51%</td>
<td>- -</td>
<td>- -</td>
<td>5 11%</td>
</tr>
<tr>
<td>Market is able to accommodate larger stock orders.</td>
<td>1 2%</td>
<td>19 42%</td>
<td>- -</td>
<td>- -</td>
<td>24 55%</td>
</tr>
<tr>
<td>Brokers in the market prefer to be anonymous.</td>
<td>18 50%</td>
<td>16 36%</td>
<td>7 16%</td>
<td>2 5%</td>
<td>1 2%</td>
</tr>
</tbody>
</table>
4.3.2 Technology

The aim of this section was to determine the influence of technology to stock market efficiency. Use of technology in the stock market has yielded positive improvement in the stock market (Avolio, Gildor, and Andrei, 2002). In this view, the findings have revealed that 68% of respondents agreed that technology has reduced the clearing and settlement days. 68% of respondents agreed that technology has reduced transaction turnaround time. It’s evident from the results that technology has improved on time efficiency in DSE. Moreover 48% of respondents also agreed that technology has made information to be readily available to all investors. On the other hand 52% of respondents strongly disagreed that introduction of electronic trading in DSE has led to lower transaction fee. The findings are presented in Table 4.5

Table 4.5: Technology

<table>
<thead>
<tr>
<th>Technology</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Information is readily available to all investors.</td>
<td>9 21%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>21 48%</td>
</tr>
<tr>
<td>Introduction of electronic trading has led to lower transaction fees</td>
<td>23 52%</td>
<td>14 32%</td>
<td>5 11%</td>
<td>2 5%</td>
<td>-</td>
</tr>
<tr>
<td>Transaction turnaround time has reduced</td>
<td>1 2%</td>
<td>4 9%</td>
<td>-</td>
<td>-</td>
<td>30 68%</td>
</tr>
<tr>
<td>Clearing and settlement days have reduced</td>
<td>1 2%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>30 68%</td>
</tr>
</tbody>
</table>

4.3.3 Regulation

This section sought to determine the influence of regulation on the efficiency of DSE. The findings indicated that 73% of respondents strongly agreed that the laws and regulations promotes transparency in the stock market activities. This was followed closely by 73% of investors who strongly agreed that regulation increases investors’
confidence. 68% of the respondents strongly agreed that brokerage firms compile to CMSA disclosure requirements. Furthermore 57% of respondents strongly agreed that the publications of the companies are relevant in accordance to accounting requirements. 58% of respondents also agreed that regulation enhances effectively allocation of capital raised. While 41% respondents strongly disagreed that listed companies meet annual disclosure requirements. Its evident that regulation in DSE is considered to be an important factor in promoting efficiency. The findings are presented in Table 4.6.

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The laws and regulation promotes transparency in stock market activities</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>12 27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulations increase investors’ confidence</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>12 27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulation enhances effectively allocation of capital raised.</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>16%</td>
<td>25 58%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11 26%</td>
</tr>
<tr>
<td>Listed companies meet annual disclosure legal requirement</td>
<td>18</td>
<td>41%</td>
<td>11</td>
<td>25%</td>
<td>5 11%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 28%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- -</td>
</tr>
<tr>
<td>The brokerage firms comply to CMSA disclosure requirements</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>5%</td>
<td>12 27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30 68%</td>
</tr>
<tr>
<td>The publications of the companies are relevant in accordance to accounting</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>19 43%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25 57%</td>
</tr>
</tbody>
</table>

4.3.4 Transparency

The study aimed to determine the effect of transparency to the efficiency of DSE. The results revealed that 86% of respondents agreed that brokers have enough knowledge on the related stock to be traded. On the other hand 52% of respondents strongly disagreed that the stock price on the exchange reflected a fair value of the current performance of
the listed companies. Moreover 52% of respondents strongly disagreed that the stock prices reflected all available information in DSE, and 55% of respondents also strongly disagreed that media discloses the true events information of the related stocks in the market. The findings are presented in Table 4.7.

Table 4.7: Transparency

<table>
<thead>
<tr>
<th>Transparency</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency  %</td>
<td>Frequency %</td>
<td>Frequency %</td>
<td>Frequency %</td>
<td>Frequency %</td>
</tr>
<tr>
<td>The stock prices on the exchange reflect a fair value of the current performance of the listed companies</td>
<td>24 55%</td>
<td>11 25%</td>
<td>5 11%</td>
<td>4 9%</td>
<td>-</td>
</tr>
<tr>
<td>The stock price reflects all available public information</td>
<td>23 52%</td>
<td>11 25%</td>
<td>10 23%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Brokers have enough knowledge on related stock to be traded.</td>
<td>1 2%</td>
<td>-</td>
<td>-</td>
<td>38 86%</td>
<td>5 11%</td>
</tr>
<tr>
<td>Media discloses the true events information of the related stocks in the market</td>
<td>24 55%</td>
<td>13 30%</td>
<td>6 14%</td>
<td>1 2%</td>
<td>-</td>
</tr>
</tbody>
</table>

4.3.5 Transaction Cost

This section aimed to examine the influence of transaction cost on the efficiency of DSE. Transaction cost is acknowledged in operational and information efficiency of the stock market (Kang, 2012). The results reveal that, 50% of respondent strongly agreed that informational asymmetry between the buyer and seller exists. 61% of respondents agreed that the brokerage fee is fair. On the other hand 36% of respondents strongly disagreed that information asymmetry between the buyer and seller increases transaction costs. In addition 57% of respondents disagreed that low transaction leads to price volatile due to increase of investors in the market. It’s evident that DSE has challenge on information efficiency. The findings are revealed in Table 4.8.
Table 4.8: Transaction Cost

<table>
<thead>
<tr>
<th>Transaction costs</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency %</td>
<td>Frequency %</td>
<td>Frequency %</td>
<td>Frequency %</td>
<td>Frequency %</td>
<td>Frequency %</td>
</tr>
<tr>
<td>Information asymmetry between the buyer and seller exists</td>
<td>-</td>
<td>3</td>
<td>7%</td>
<td>6</td>
<td>14%</td>
</tr>
<tr>
<td>Information asymmetry between the buyer and seller increases transaction costs</td>
<td>16</td>
<td>12</td>
<td>27%</td>
<td>10</td>
<td>23%</td>
</tr>
<tr>
<td>Low transaction leads to price volatile due to increase of investors in the market.</td>
<td>13</td>
<td>25</td>
<td>57%</td>
<td>5</td>
<td>11%</td>
</tr>
<tr>
<td>The stock exchange brokerage fee is fair</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>12</td>
</tr>
</tbody>
</table>

4.3.6 Correlation between determinants of Capital Market Efficiency

The aim of this section was to determine whether there was a causal relationship between determinants of capital market efficiency. The variables under determinates of capital market efficiency included: Liquidity, technology, regulation, transparency and transaction cost. The finding indicated that there is a positive relationship at the level of 0.36 between liquidity and regulation that if liquidity increases also regulation efficiency increases in the Dar es Salaam stock market. There was also a positive relationship at the level of 0.50 between transparency and transaction cost which reveals that when the level of transparency increases also transaction cost increases in DSE. Furthermore the findings indicated that there is a negative relationship between technology and regulation at -0.02 level which explains that if regulation increases the level of using technology decreases in the stock market. The findings are indicated in Table 4.9.
<table>
<thead>
<tr>
<th></th>
<th>Liquidity</th>
<th>Technology</th>
<th>Regulation</th>
<th>Transparency</th>
<th>Transaction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidity</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>0.03</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulation</td>
<td>0.36</td>
<td>-0.02</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transparency</td>
<td>-0.03</td>
<td>0.00</td>
<td>0.10</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Transaction Cost</td>
<td>0.54</td>
<td>0.62</td>
<td>0.50</td>
<td>0.50</td>
<td>1.00</td>
</tr>
</tbody>
</table>

4.4 Implication of Determinants of Capital Market Efficiency on Investors

4.4.1 Implication of Determinants of Capital Market Efficiency on Investors
Institutional Investors and Brokerage firms (Professional Respondents)

4.4.1.1 Implication of Liquidity
The study aimed to examine the implication of liquidity of the stock market to an investor. The study revealed that 95% of the respondents agreed that if DSE market was liquid investors can sell their shares easily. Moreover 50% of respondents strongly agreed that high liquidity in the enables investors to actively exchange shares without large prices. 64% of the respondents strongly agreed that liquidity leads to increased market stability. On the other hand 52% of respondents strongly disagreed that investors diversify their stocks cheaply. This indicates that majority of the respondents agreed that liquidity in the stock market helps investors to tie up their investments as indicated in Table 4.10.
Table 4.10: Implication of Liquidity

<table>
<thead>
<tr>
<th>Implication of Liquidity</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Investors sell their shares easily</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>High liquidity enables investors to actively exchange shares without large price change</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Investors diversify their stocks cheaply</td>
<td>23</td>
<td>52%</td>
<td>9</td>
<td>20%</td>
<td>7</td>
</tr>
<tr>
<td>There is increased market stability</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
</tbody>
</table>

4.4.1.2 Implication of Technology

The study aimed to investigate the impact of technology on investors in DSE market. The findings illustrated that 66% of respondents strongly agreed that the use of technology in DSE has led investors to easily access information on related stocks. 59% of respondents strongly agreed that investors can fully utilize all available information on related stocks. Moreover the findings indicated that 57% of respondents strongly agreed that technology in DSE has reduced the cost of trading for investors. Additionally 55% of respondents strongly agreed that technology in DSE has reduced the time taken for investors to trade. On the hand 70% of respondents strongly disagreed that technology helps investors to have direct access to different number of markets. This indicates that technology in DSE has increased investors time efficiency, cost efficiency and information efficiency as indicated in Table 4.11.
Table 4.11: Implication of Technology

<table>
<thead>
<tr>
<th>Implication of Technology</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Has technology reduced the time taken for investors to trade</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Has technology reduced the cost of trading for investors</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>19</td>
</tr>
<tr>
<td>Investors can easily access information on stocks</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>Investors fully utilize all available information on related stocks</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>7%</td>
<td>7</td>
</tr>
<tr>
<td>Investors can have direct access to different number of markets</td>
<td>31</td>
<td>70%</td>
<td>11</td>
<td>25%</td>
<td>-</td>
</tr>
</tbody>
</table>

4.4.1.3 Implication of Regulation

The study aimed at investigating the impact of regulation in DSE on investors. The study illustrated that 75% of respondents agreed that investors perceive the capital market to be accountable. 57% of respondents agreed that they trust DSE on their investments. Additionally 59% of the respondents agreed that the have confidence on the capital market while 61% of the respondents disagreed that investors in DSE have access to diverse investments. This indicate that majority of the respondents agrees regulation in DSE is strong and it has promoted efficiency, as indicated in Table 4.12.
Table 4.12: Implication of Regulation

<table>
<thead>
<tr>
<th>Implication of Regulation</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Investors trust the stock market on their investments</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Investors perceive the capital market is accountable</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Investors get access to diverse investments in DSE</td>
<td>-</td>
<td>-</td>
<td>27</td>
<td>61%</td>
<td>8</td>
</tr>
<tr>
<td>Investors have confidence on capital market</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4.4.1.4 Implication of Transparency

This section aimed at investigating the impact of transparency in DSE to an investor. The findings revealed that 86% of the respondents strongly agreed that investors prefer more disclosure of market information. 77% of respondents agreed that investors in DSE make informed decision with available market information. Moreover 64% of respondents agreed that investors in DSE don’t engage in arbitrage activities, while 52% of respondents strongly disagreed that investors price securities correctly with financial information given. The findings indicated that majority of respondents agreed that DSE market possess informational transparency but not price transparency as indicated in Table 4.13.
Table 4.13: Implication of Transparency

<table>
<thead>
<tr>
<th>Implication of Transparency</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Investors price securities correctly with financial information given.</td>
<td>23</td>
<td>52%</td>
<td>10</td>
<td>23%</td>
<td>7</td>
</tr>
<tr>
<td>Investors prefer more disclosure of market information</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>38</td>
<td>86%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investors don’t engage in arbitrage activities</td>
<td>4</td>
<td>9%</td>
<td>7</td>
<td>16%</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Investors make informed decision with available market information</td>
<td>5</td>
<td>11%</td>
<td>-</td>
<td>-</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4.4.1.5 Implication of Transaction Costs

This section aimed at analyzing the impact of transaction cost in DSE on investors. The findings indicated that 41% of respondents strongly agreed that investors can directly save due to reduction in cost. However 50% of the respondents agreed that investors in DSE can cash their investments at reasonable prices. Additionally, 36% of respondents strongly disagreed that low transaction costs reduce information asymmetry between buyers and sellers. The findings revealed that transaction cost does not promote efficiency in DSE as indicated in Table 4.14.
### Table 4.14: Implication of Transaction Costs

<table>
<thead>
<tr>
<th>Implication of Transaction Costs</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Investors can cash their investments at reasonable prices</td>
<td>-</td>
<td>-</td>
<td>22</td>
<td>50%</td>
<td>3</td>
</tr>
<tr>
<td>Low transaction costs reduce information asymmetry between buyers and sellers</td>
<td>16</td>
<td>36%</td>
<td>14</td>
<td>32%</td>
<td>3</td>
</tr>
<tr>
<td>Investors can directly save due to reduction in transaction costs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>11</td>
</tr>
</tbody>
</table>

#### 4.4.1.6 Correlation between Implication of Determinants of Capital Market Efficiency on Investors; Institutional Investors and Brokerage firms (Professional Respondents)

The aim of this section was to determine whether there is a causal relationship between the implication of determinants of capital market efficiency institutional investors and brokerage firms. The variables included; implication of liquidity, implication of technology, implication of regulation, implication of transparency and implication of transaction cost. The findings indicated that there is a negative relation at -0.27 level between implication of liquidity and transparency, this reveals that when liquidity increases in DSE professional investors in DSE experience low transparency level. There was a positive relationship at a level of 0.58 between implication of technology and transaction cost, this indicates that when the market uses high technology, professional investors in DSE are affected by high transaction cost. There was a negative relationship at a level of -0.28 between implication regulation and transparency, that when more regulations are implemented in DSE, professional investors experience low price and information transparency. The findings are indicated in Table 4.15.
Table 4.15: Correlation between Implication of Determinants of Capital Market Efficiency on Investors; Professional Respondents

<table>
<thead>
<tr>
<th></th>
<th>Implication of liquidity</th>
<th>Implication of Technology</th>
<th>Implication of Regulation</th>
<th>Implication of Transparency</th>
<th>Implication of Transaction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implication of liquidity</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implication of Technology</td>
<td>0.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implication of Regulation</td>
<td>0.07</td>
<td>0.02</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implication of Transparency</td>
<td>-0.27</td>
<td>-0.12</td>
<td>-0.28</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Implication of Transaction Cost</td>
<td>-0.16</td>
<td>0.58</td>
<td>0.35</td>
<td>0.55</td>
<td>1.00</td>
</tr>
</tbody>
</table>

4.4.2 Implication of Determinants of Capital Market efficiency on Investors Individual Investors Respondents

This section analyzed findings on implication of determinants of capital market efficiency on investor’s respondents being individual investors in DSE. The study investigated on implication of liquidity, technology, regulation, transparency and transaction cost.

4.4.2.1 Implication of Liquidity

This section analyzed the impact of liquidity on individual investors in DSE. The findings indicated that 89% of respondents agreed that investors sell their shares easily. 54% of respondents strongly agreed that there is increased market stability in the market. However 46% of respondents strongly disagreed that investors diversify their stocks cheaply. This indicated that majority of respondents agreed that liquidity in DSE has helped them to trade actively as illustrated in Table 4.16.
Table 4.16: Implication of Liquidity

<table>
<thead>
<tr>
<th>Implication of Liquidity</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Investors sell their shares easily</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>4%</td>
<td>6</td>
</tr>
<tr>
<td>Investors diversify their stocks cheaply</td>
<td>36</td>
<td>46%</td>
<td>18</td>
<td>23%</td>
<td>13</td>
</tr>
<tr>
<td>There is increased market stability</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9</td>
</tr>
</tbody>
</table>

4.4.2.2 Implication of Technology

This section aimed at investigating the impact of technology on individual investors. The findings illustrated that 68% of respondents strongly agreed investors can easily access information on stocks. 59% of respondents strongly agreed that technology reduced the time taken for investors to trade. Moreover 59% of respondents strongly agreed that investors fully utilize all available information on related. Followed closely by 50% of respondents strongly agreed technology reduced the cost of trading for investors. On the other hand 70% of respondents strongly disagreed that investors in DSE have direct access to different number of markets. This indicates that technology has improved individual investor’s time and cost efficiency as illustrated in Table 4.17.
Table 4.17: Implication of Technology

<table>
<thead>
<tr>
<th>Implication of Technology</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Has technology reduced the time taken for investors to trade</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Has technology reduced the cost of trading for investors</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>8%</td>
<td>-</td>
</tr>
<tr>
<td>Investors can easily access information on stocks</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2%</td>
<td>2</td>
</tr>
<tr>
<td>Investors fully utilize all available information on related</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>5%</td>
<td>12</td>
</tr>
<tr>
<td>Investors can have direct access to different number of markets</td>
<td>56</td>
<td>70%</td>
<td>19</td>
<td>24%</td>
<td>-</td>
</tr>
</tbody>
</table>

4.4.2.3 Implication of Regulation

This study aimed at investigating the impact of regulation on individual investors in DSE. The results postulated 74% of respondents agreed that investors perceive the capital market is accountable. Followed closely 53% of respondents strongly agreed that investors have confidence on capital market. Additionally 54% of respondents strongly agreed that investors trust DSE on their investments while 55% of respondents disagreed that investors get access to diverse investments in DSE. This indicated that regulation in DSE has increased efficiency in the DSE to an investor as indicated in Table 4.18.
### Table 4.18: Implication of Regulation

<table>
<thead>
<tr>
<th>Implication of Regulation</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Investors trust the stock market on their investments</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Investors perceive the capital market is accountable</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Investors get access to diverse investments in DSE</td>
<td>-</td>
<td>-</td>
<td>44</td>
<td>55%</td>
<td>15</td>
</tr>
<tr>
<td>Investors have confidence on capital market</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### 4.4.2.4 Implication of Transparency

This section aimed at analyzing the impact of transparency on individual investors in DSE. The findings revealed that 81% of respondents strongly agreed that investors preferred more disclosure of market information. This was followed closely by 76% of respondents agreed that investors in DSE made informed decision with available market information. However, 46% of respondents disagreed that investors priced securities correctly with financial information given. This indicates that individual investors perceive the market to be more of information transparency rather than price transparency as indicated in Table 4.19.
Table 4.19: Implication of Transparency

<table>
<thead>
<tr>
<th>Implication of Transparency</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Investors price securities correctly with financial information given.</td>
<td>37</td>
<td>46%</td>
<td>21</td>
<td>26%</td>
<td>10</td>
</tr>
<tr>
<td>Investors prefer more disclosure of market information</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Investors make informed decision with available market information</td>
<td>-</td>
<td>-</td>
<td>9</td>
<td>11%</td>
<td>10</td>
</tr>
</tbody>
</table>

4.4.2.5 Implication of Transaction Costs

This study aimed at analyzing the impact of transaction costs on individual investor in DSE. The findings revealed that 44% of respondents strongly agree investors can directly save due to reduction of costs. On the other hand 51% of respondents disagreed that investors in DSE can cash their investments at reasonable prices. Followed closely by 40% of respondents strongly disagreed that low transactions encourage investors to hold shares willingly and 35% of respondents strongly disagreed low transaction cost reduce information asymmetry between buyers and sellers. These reveal that individual investors in DSE perceive the transaction cost in DSE is considerable high as indicated in Table 4.20.
Table 4.20: Implication of Transaction Costs

<table>
<thead>
<tr>
<th>Implication of Transaction Costs</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency (%)</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Low transaction costs encourage investors to hold shares willingly</td>
<td>32</td>
<td>40%</td>
<td>10</td>
<td>13%</td>
<td>27</td>
</tr>
<tr>
<td>Investors can cash their investments at reasonable prices</td>
<td>-</td>
<td>-</td>
<td>41</td>
<td>51%</td>
<td>6</td>
</tr>
<tr>
<td>Low transaction costs reduce information asymmetry between buyers and sellers.</td>
<td>28</td>
<td>35%</td>
<td>22</td>
<td>28%</td>
<td>6</td>
</tr>
<tr>
<td>Investors can directly save due to reduction in costs</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1%</td>
<td>21</td>
</tr>
</tbody>
</table>

4.4.2.6 Correlation between Implication of Determinants of Capital Market Efficiency on Individual Investors

The aim of this section is to determine whether there is a causal relationship between implication of determinants of capital market efficiency on individual investors. The variables included; implication of liquidity, implication of technology, implication of regulation, implication of transparency and implication of transaction cost. The findings indicated that there is a strong positive relationship at a level of 0.71 between implication of liquidity and transaction cost, this reveals that when liquidity increases in DSE, indicates individual investors experience high transaction cost. There is also a positive relationship between implication of technology and transaction cost, this indicates that when sophisticated technology are used in DSE individual investors face high transaction cost. More over the findings indicated that there is negative relationship between implication of regulation and transparency; this indicates that when more regulations are implemented in DSE, individual investors experience low price and information efficiency. The findings are indicated in Table 4.21.
Table 4.21: Correlation between Implication of Determinants of Capital Market Efficiency on Investors; Individual Investors

<table>
<thead>
<tr>
<th></th>
<th>Implication of liquidity</th>
<th>Implication of Technology</th>
<th>Implication of Regulation</th>
<th>Implication of Transparency</th>
<th>Implication of Transaction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implication of liquidity</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implication of Technology</td>
<td>0.12</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implication of Regulation</td>
<td>-0.07</td>
<td>0.14</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implication of Transparency</td>
<td>-0.01</td>
<td>-0.23</td>
<td>-0.33</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Implication of Transaction</td>
<td>0.71</td>
<td>0.54</td>
<td>0.24</td>
<td>0.28</td>
<td>1.00</td>
</tr>
</tbody>
</table>

4.5 Best adopted Measures Used to Promote Efficiency

This section analyzed the best adopted measures used to promote efficiency in relation to the Dar es Salaam Stock Market. The variables analyzed include demutualization of the stock exchange, technology improvement, transparency and financial market liberalization.

4.5.1 Demutualization of the Stock Exchange

The study aimed to investigate whether demutualization of stock market promotes efficiency. The findings revealed that 61% of respondents strongly agreed that demutualization helps segregating the current members ownership and trading rights. 57% of respondents agreed that demutualization enhances investors’ participation in the stock exchange. Moreover 59% of respondents agreed that demutualization promotes governance structure and efficiency. Basically the respondents agree that demutualization will increase the efficiency in DSE. The findings are revealed in Table 4.22
Table 4.22: Demutualization of the Stock Exchange

<table>
<thead>
<tr>
<th>Demutualization of the Stock Exchange</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Demutualization promotes governance structure and efficiency</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>5%</td>
<td>-</td>
</tr>
<tr>
<td>Demutualization enhances investor’s participation in the stock exchange</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2%</td>
<td>-</td>
</tr>
<tr>
<td>Demutualization helps segregating the current members ownership and trading rights</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>5%</td>
<td>-</td>
</tr>
</tbody>
</table>

4.5.2 Technology Improvement

This section aims at measuring the influence of technology improvement in promoting efficiency in the stock market. Technology improvement enhances information flow and efficiency in stock market (Steil, 2002). The findings reveal that 57% of respondents strongly agreed that automation enhances information flow and efficiency. This was followed by 50% of respondents’ strongly agreed automation increases the speed of trading, and 48% of respondents strongly agreed that stock exchange automation leads to stock to be sold easily. Moreover 45% of respondents agreed that technology has led to market vulnerability caused by technical faults. 41% of respondents agreed that technology has led to price manipulation. This implies that technology improvement in DSE will increase information flow, speed and efficiency. The findings are presented in Table 4.23.
Table 4.23: Technology Improvement

<table>
<thead>
<tr>
<th>Technology Improvement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Automation enhances information flow and efficiency</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Automation increases the speed of trading</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>The stock exchange automation leads stocks to be sold easily</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2%</td>
<td>4</td>
</tr>
<tr>
<td>Technology has led to price manipulation</td>
<td>1</td>
<td>2%</td>
<td>8</td>
<td>18%</td>
<td>1</td>
</tr>
<tr>
<td>Technology has led to market vulnerability caused by technical faults</td>
<td>1</td>
<td>2%</td>
<td>8</td>
<td>18%</td>
<td>5</td>
</tr>
</tbody>
</table>

4.5.3 Transparency

The study aimed to investigate whether transparency in the stock market promotes efficiency. Transparency ensures the price of the stocks to fully reflect all available information and for investors to make informed decision. The findings revealed that 55% of respondents agreed that price transparency help investors to make informed decision. This was closely followed by 57% of respondents who agreed that there is appropriate disclosure of financial information of the listed companies. 45% of respondents strongly agreed that price transparency affect awareness of the stock exchange. On the other hand 59% of respondents disagreed that information transmission mechanisms are effective. The findings are presented in Table 4.24.
Table 4.24: Transparency

<table>
<thead>
<tr>
<th>Transparency</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price transparency helps investors to make informed decisions</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>24 55%</td>
</tr>
<tr>
<td>Price transparency affects awareness of the stock exchange</td>
<td>1 2%</td>
<td>11 25%</td>
<td>-</td>
<td>-</td>
<td>12 27%</td>
</tr>
<tr>
<td>There is appropriate disclosure of financial information of the listed companies</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>25 57%</td>
</tr>
<tr>
<td>Information transmission mechanisms are effective</td>
<td>-</td>
<td>26 59%</td>
<td>3 5%</td>
<td>15</td>
<td>34%</td>
</tr>
</tbody>
</table>

4.5.4 Financial Market Liberalization

The study assessed whether financial market liberalization promotes efficiency in the stock market. Financial market liberalization leads to growth of stock market. The findings indicated that the 57% of respondents strongly agreed free trade contributes to the growth of the stock exchange. On the other hand 48% of respondents strongly disagreed that free trade reduces the cost of capital of the stock market. This was closely followed by 59% of respondents who strongly disagreed that foreign traders will have more access to information due to free trade. Furthermore 55% of respondents disagreed that liberalization allows risk sharing between domestic and foreign agents. The results indicated that most respondents disagreed that liberalization won’t promote efficiency in DSE as postulated in Table 4.25.
### Table 4.25: Financial Market Liberalization

<table>
<thead>
<tr>
<th>Financial Market Liberalization</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Free trade reduces the cost of capital of the stock market</td>
<td>-</td>
<td>-</td>
<td>21</td>
<td>48%</td>
<td>11</td>
</tr>
<tr>
<td>Liberalization allows risk sharing between domestic and foreign agents</td>
<td>17</td>
<td>39%</td>
<td>24</td>
<td>55%</td>
<td>-</td>
</tr>
<tr>
<td>Free trade contributes to the growth of the stock exchange</td>
<td>1</td>
<td>2%</td>
<td>1</td>
<td>2%</td>
<td>4</td>
</tr>
<tr>
<td>Foreign trades will have more access to information due to free trade</td>
<td>26</td>
<td>59%</td>
<td>2</td>
<td>5%</td>
<td>1</td>
</tr>
</tbody>
</table>

### 4.5.5 Correlation between Best adopted Measures Used to Promote Efficiency

This section aimed at determining whether there is a casual relationship between the best adopted measures used to promote efficiency. The variables included; demutualization of the stock exchange, technology improvement, transparency and financial market liberalization. The findings indicated that there is a positive relationship at the level of 0.21 between demutualization and financial market liberalization. This revealed that as DSE demutualize the stock exchange, the liberalization of the market will increase hence more efficiency of DSE. There was also a positive relationship between demutualization and technology improvement. It revealed that as DSE demutualize the stock markets, technology improvement also increase in DSE thus more efficiency. The findings are indicated in Table 4.26.
Table 4.26: Correlation between Best adopted Measures Used to Promote Efficiency

<table>
<thead>
<tr>
<th></th>
<th>Demutualization</th>
<th>Technology Improvement</th>
<th>Transparency</th>
<th>Financial Market Liberalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demutualization</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology Improvement</td>
<td>0.16</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transparency</td>
<td>0.07</td>
<td>0.10</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Financial Market Liberalization</td>
<td>0.21</td>
<td>-0.05</td>
<td>0.17</td>
<td>1.00</td>
</tr>
</tbody>
</table>

4.6 Chapter Summary

This chapter has discussed on results and findings in which each subsection derives from the research question of the study. The data collected from the field analysis pertaining to the three research objectives. The findings on demographics, determinants of capital market efficiency, implication of capital market efficiency on investors and the best adopted measures used to promote efficiency. The data was presented in tables, charts and figures. Chapter five addressed the discussion, conclusion and recommendation based on findings.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter provides a discussion on the findings of the research as compared to the findings in the literature review, the summary of the study and recommendations for further improvements on measures to be taken to promote efficiency in the stock market. The research is concluded on the basis of the conclusions drawn from the research objectives.

5.2 Summary

The purpose of this study was to assess the efficiency of Dar es Salaam Stock exchange and its impact on investors. The research was guided by three research objectives: to evaluate the current state of determinants of stock market efficiency, to analyze the implication of determinants of capital market efficiency to an investor and lastly to identify the best adopted practices used to promote capital market efficiency.

This study adopted a descriptive research design. The population of the study was 180,000 individual investors, 15 institutional investors and 7 brokerage firms. A sample size of 100 individual investors was drawn from 180,000 investors. The researcher adopted census in selecting sample size of institutional investors and brokerage firms. The researcher targeted 2 respondents from each institutional investor’s organization making a sample size of 30 respondents. Also the researcher targeted 2 respondents from each brokerage firm making a sample size of 14. Hence, the total sample size of this project was 144 respondents. The sampling method used was convenient sampling technique. Data was collected using closed and open ended questionnaire. Data was analyzed using descriptive statistics such as percentages and frequency distribution. SPSS was used as data analysis tool.

On the determinants of capital market efficiency, majority of the respondents agreed that the DSE market to some extent is liquid due to respondents agreed that market is able to accommodate large stock orders and majority of respondents strongly disagreed that they
preferred to be anonymous in the market. A large proportion of respondents agreed that technology has led to time efficiency in the stock market others agreed that it has led information to be readily available to DSE investors. Moreover a larger number of respondents to a high extent agreed that regulation promote efficiency in DSE, it has led to increase in investors’ confidence, and it has made brokerage firms and listed companies to comply with disclosure requirements. On the other hand a large number of respondents strongly disagreed stock prices on the exchange reflect a fair value of the current performance of the listed companies, stock price reflects all available public information, and media disclosed the true events of information of the related stocks. Many respondents agreed information asymmetry between the buyer and seller exists, and the brokerage fee is fair.

Regarding implication of determinants of capital market efficiency on DSE investors, both professional and individual investors’ respondents agreed that investors in DSE sell their shares easily. Moreover they strongly agreed that high liquidity enables investors to actively exchange shares without large price change. However majority of both respondents strongly disagreed investors in DSE diversify their stocks cheaply. Majority of professional and individual investor’s respondents strongly agreed that technology has reduced time taken for investors to trade, investors have had easy access of information on stocks and it has reduced the cost of trading for investors. On the other hand both professional and individual investors strongly disagreed that investors in DSE can have direct access to different number of markets due to technology.

A large number of both professional and individual investors agreed that investors trust the DSE on their investments, both respondents also agreed investors perceive the capital market is accountable and they are confident on the capital market. However both respondents disagreed that investors get access to different investments in DSE. Moreover, a large proportion of professional and individual investors respondents strongly agreed that investors prefer more disclosure of market information, this was followed closely by majority of both respondents agreed that investors in DSE make informed decision with the information they have. On the other hand both respondents strongly disagreed investors in DSE price securities correctly with information given. Additionally majority of both professional and individual investors respondents strongly agreed that investors will directly save due to reduction in
transaction costs. However both respondents disagreed that investors can cash their investments at reasonable prices.

The findings on the best adopted practices used to promote efficiency, majority of respondents agreed that demutualization promotes efficiency, increases investors participation in the stock market. A large proportion of respondents agreed that technology improvement has led to information flow, efficiency, increase the speed of trading, and has led to stocks to be sold easily. Majority of respondents agreed that transparency has led to investors to make informed decision, it has affected awareness of the stock exchange and there is appropriate disclosure of financial information of the listed companies. A large number of respondents agreed financial market liberalization leads to growth of stock exchange while majority of respondents strongly disagreed that free trade reduces the cost of capital, liberalization allows risk sharing between domestic and foreign agents and lastly large number of respondents disagreed foreign traders will have more access to information due to free trade.

5.3 Discussion

5.3.1 Determinants of Capital Market Efficiency

The findings indicated that 55% of respondents strongly agreed that DSE market was able to accommodate large stock orders. The results were consistent with Chordia, Roll and Subrahmanyam (2005) study that postulated a liquid market facilitates efficiency when it can accommodate larger order flow. The findings illustrated that 50% of respondents strongly disagreed that brokers in the market preferred to be anonymous. This was consistent with study done by Foucault, Moinas and Theissen (2006), which explained that informed traders preferred anonymous trading, while liquidity traders did not prefer anonymity. Hence a large number of respondents’ agreed that DSE to some extent is liquid.

The findings indicated that 51% of respondents agreed that stock price return to original levels after trading large stock orders. This implies that stock price return to former levels in response to large stock orders which contradicts a study conducted by Glen (1994) who explained a liquidity market should be able to buy and sell large orders of stock with less market impact. Also, the findings revealed 68% of respondents agreed that technology in
DSE has reduced clearing and settlement days and 68% of respondents agreed that technology has reduced transaction turnaround time. This findings are in line with a study done by Avolio, Gildor, and Andrei (2002). They explained technology has lead to reduction of barriers of entry for providing financial services such as entry of brokers which inturn diminished the transaction turnaround time costs.

Information is readily available to all investors. The findings showed that 48% of respondents agreed that technology has led information to be readily available to all investors. Avolio, Gildor, and Andrei (2002) in their findings also agreed that technology has allowed information to be dispersed to a wide base of investors in real time and a low cost. Furthermore they explain that technology has made it easier for corporate insiders and financial intermediaries to improve on the dissemination of information to the investors.

The findings revealed that 52% of respondents strongly disagreed introduction of electronic trading has led to lower transaction fees in DSE. This findings contradicts a study done by Ashraf and Joarder (2009) which explained that advancement of technology has led to many organisation to save money on staff, paper work due electronic order processing. Moreover Malone, Yates and Benjamin (2001) also explained introduction of automation has led in transaction charges which reflects the lower staffing costs resulted from the extensive use of computers.

The findings strongly agreed with a study done by Bratton and Joseph (1999) that regulation is the bedrock of strong and efficient stock market. 73% of respondents agreed that laws and regulation promotes transparency in stock market. Furthermore 73% of respondents to a large extent agreed that regulation in DSE has increased investors’ confidence which was consistent with findings from Coffee (1999) who explained the effects of poor regulations in Czesh securities market which lead to market failure due to lack of investors confidence on the system.

The findings indicated that 68% of respondents strongly agreed that brokerage firms comply to CMSA discosure requirements and 57% of respondents agreed to large extent that the publication of DSE listed companies are relevant in accordance to accounting requirements .This findings are consistent with Gakeri (2011) study who portrayed the
legal framework must facilitate the proper functioning of securities markets by ensuring the relevant disclosure requirements are complied by relevant institutions.

However, 41% of respondents strongly disagreed that listed DSE companies meet annual legal disclosure requirements, which contradicts with Gakeri (2011) that failure to meet disclosure requirements leads to market instability, and less investors confidence. On the other hand, Milhaupt (2009) explained that although there are varying levels of enforcement between jurisdictions, the reality is that as long as the system is present, investors will be protected and the security market would succeed.

Findings portrayed that 58% of respondents agreed that regulation in DSE has enhanced effective allocation of the capital raised. This finding was similar with studies done by Milhaupt (2009) and Latimer (2000) explained that legal framework is a major factor in determining efficiency of the securities market; thus, capital raised would be effectively allocated.

Transparency mainly is the ability of market participants to observe information about the trading process (Gilson, 2000). 86% of respondents agreed that brokers in DSE have enough knowledge on the related stocks to be traded. This corresponds to a study done by Kothari (2001) that portrayed that for a security to function properly, brokers should have crucial requirements in such as availability of relevant, timely, accessible and reliable information in order to facilitate proper decision-making.

Price transparency is crucial for investors to know how stocks are priced and to determine the true value of the stocks Zou (2011). The findings revealed that 55% of respondents strongly disagreed that the stock prices in DSE reflect a fair value of the current performance of the listed companies. This finding controverts with Zou who explained that when the market is efficient stock price reflects all available information, and prices adjust promptly when new information arrives in the market. Moreover, findings also indicated that 52% of respondents in DSE disagreed to large extent that the stock prices reflected all available public information. This refuted with a study done by Chen (1998) that information efficiency becomes achieved when stock prices reflect all information and the investments capital will be utilized effectively.
The findings indicated that 55% of respondents strongly disagreed that media disclosed the true events information of the related stocks in DSE. This contradicts a study done by Zou (2011) who explained that to increase efficiency a stock market should increase its efficiency through use of media. The media should disclose all relevant information especially the macroeconomic information on the related stock. Transaction cost is recognized in information efficiency in terms of information asymmetry between the buyer and the seller of a related stock (Kissel, 2006). This study was similar to the findings where by 50% of the respondents strongly agreed that information asymmetry exists between the buyer and sellers in the DSE market. However 36% of respondents strongly disagreed that information asymmetry between the buyer and seller increases transaction costs.

The findings revealed 57% of respondents disagreed, low transaction leads to price volatile due to increase of investors in the market. These findings contradicts with a study done by Liu (2004) who observed the effects of transaction costs and price volatile. Liu results portrayed that when transaction cost decline more investors enter the market which leads to fluctuation in demand and supply thus leads to volatility.

5.3.2 Implication of Determinants of Capital Market Efficiency to an Investor

The findings indicated that 50% of professional respondents strongly agreed that high liquidity enables investors to actively exchange shares without large price changes. These findings corresponds to Wuyts (2007) who explained that liquidity leads to lower transaction costs which enabled investors to participate more in exchanging securities without a large effect on price. On the other hand both individual investors (46%) and professional investors (52%) strongly disagreed that investors diversify their stocks cheaply. This contradicts with a study done by Coffee (1991) who explained that a market should have policies which promote liquidity which in turn it will lead to obvious benefits to the investor such as to cash their investments quickly and cheaply. However Coffee identified that these same policies will lead weaken of corporate governance by boosting bad performing stock holders and creating unfavorable conditions for promising investors.
The findings revealed that both professional and individual investor’s respondents strongly agreed at 66% and 68% respectively that investors can easily access information on stocks. Moreover professional (55%) and individual investors (59%) respondents agreed to a large extent that technology reduced the time taken for investors to trade in DSE. These results corresponded to the study done by Ashraf and Joarder (2009), they explained institutional and retail investors, who had access to internet connection, can have access to news, current and historical prices, and all the relevant information on stock market. The study added internet help provide investors with continue update about their investments portfolio, which in turn makes information cheap, and short time delivery of enormous data.

On the other hand the findings illustrated that 70% of professional respondents and 70% of individual investors strongly disagreed that investors in DSE can have direct access to different number of markets with the use of technology. The findings contradicted with the study done by Steil (2002) who explained that the widespread use of electronic trading systems enabled customers to have a direct access to a large number of markets. This leads to differences between interdealer markets and dealer-customer markets to reduce, thus customers without access to interdealer markets can still trade and enjoy the benefits in different markets.

The findings revealed that professional and individual respondents to a large extent agreed at 75% and 74% respectively that investors in DSE perceive the capital market is accountable. The findings align with a study done by Milhaupt (2009) who explained the strict enforcement of laws and regulation is crucial for protection of investors. Lack of efficient regulation agency problem will occur between stake holders and managers which will lead to investors not to view the stock market as accountable.

An efficient capital market is a product of well created regulations which are implemented persistently thus it leads individual to trust and rely on capital market on their investments U.S. Chamber of Commerce (2008). This corresponds with findings from the study that suggested 57% of professional respondents and 54% of individual investors respondents agreed that investors trust the DSE on their investments. However the findings also reveal that both professional and individual investors’ respondents disagreed at 61% and 55% respectively that investors get access to diverse investments in
DSE. These findings contradicted with a study done by Katz (2009) who suggested a well regulated capital market should ensure the expansion of efficient business operation in terms that both parties who need capital and the ones who have capital to have diverse products and services that will manage their financial risk.

Additionally the findings indicated that both professional and individual investor’s respondents strongly agreed at 86% and 81% respectively that investors in DSE prefer more disclosure of market information. The findings matches with a study done by Healy and Palepu (2001), they explained that more transparency in the market leads to informative prices which lead to hinder liquidity. Hence they concluded that transparency have different effects on all market participants such as informed trader prefer less transparency while liquidity traders prefer more disclosure.

On the other hand the findings showed that 52% of professional respondents and 46% of institutional investors respondents to a large extent disagreed that investors in DSE price securities correctly with financial information given. This finding however contradicts with the study done by Baker and Helene (2012) who explained that for a security market to function effectively requirements such as availability of relevant, timely and reliable information should be met. Lack of such requirements leads to investors to misprice the securities and in long run, investors will prefer to hold cash rather than investing in capital markets.

The findings indicate that both professional and individual investors agreed to a large extent at 41% and 44% respectively that investors in DSE can directly save due to reduction in costs. The findings are similar to a study done by (Clearly, Kerr, and Schmitz, 2002; Liu, 2004) who revealed that reduction in transaction cost have direct and indirect benefits to an investor such as direct cost saving and indirect benefits through improvement in agency costs, good corporate governance and creation of new types of market structures which leads to more efficiency in the stock market. However a study done by Samer and Hassan (2003) explained that some low transaction leads to negative impacts such as it leads to some market participants to become more informed than others.
On the other hand, the findings indicate that 50% of professional respondents and 51% of individual investors respondents disagreed that investors in DSE can cash their investments at reasonable price. This contradicts with the study done by Kang (2012) that explained that a market which allows its investors to buy and sell their securities at a fair value will encourage investors to willingly hold securities since they will be sure to cash their assets any time at a reasonable price.

5.3.3 Best adopted Measures Used to Promote Efficiency

The findings revealed that 61% of the respondents agreed to large extent that demutualization in DSE will help segregating the current members ownership and trading rights. This findings are similar are supported by Kenyataa (2009), who explained that demutualization leads to separation of ownership and trading rights which will lead for stock markets to be modern exchange markets. The findings also indicated 57% of respondents agreed that demutualization will enhance investors participation in DSE. Moreover the findings matches the findings of Hart (1996) who explained demutualization will lead to a flexible governance structure, access to global markets and more synergy and consolidation of stock exchange and it will increase investors participation.

The findings indicated that 59% of the respondents agreed that demutualization promotes efficiency and governance structure. This findings were similar to a study which investigated impact of demutualization in Nairobi Stock Exchange (NSE) done by Capital Market Authority (2007), it was found that NSE was ripe for demutualization and the exchange will have better governance structure with little or no conflict of interest and the exchange will be more efficient in terms of competitiveness and alternative trading system.

The findings revealed that 57% of respondents agreed that automation in DSE will lead to information flow and efficiency. This corresponds with a study done by Steil (2002) who explained that introduction of automation in the stock exchange improves efficiency in terms of information flow. Automation will enhance the flow of transmittion to all relevant agents and the market in general thus increase of information efficiency. Moreover the findings also corresponds by a study done by Freund and Pagano (2000) who analysed the efficiency of New York and Toronto Stock Exchanges before and after automation. They found out the level of information efficiency after automation was
effective and automation improved on market efficiency generally. However the findings 
contradicts with Smith (2008) who analysed the efficiency of Ghana Stock Exchange 
(GSE) pre and post automation, he found out GSE was highly inefficient before and after 
automation, Smith proposed that GSE has not yielded the needed impact from 
automation.

The findings indicated that 48% of respondents agreed to a large extent that automation in 
DSE will lead to stocks to be sold easily. This findings matched the study done by 
Benouda and Mezzez (2003), they found out automation improved on the liquidity of 
shares in Tunisia Stock exchange (TSE) however it did not impact volatility and 
efficiency of TSE.

On the other hand the results portrayed 45% of respondents strongly agreed that 
improvement of technology will lead to market vulnerability caused by technical faults. 
This findings matched by analysis conducted by International Forum (2010), it was 
explained that the May 2010 flash crashed caused by violent fluctuation in price in the 
period of 10 minutes in U.s equity was caused by algorithm automation execution of a 
large sell order which confused and dislocated other algorithms. In turn markets 
participants refrained from buying or selling shares which lead to sharply reduction of 
market liquidity. It was proposed that such circumstances the human brain it would 
perform better that digital computer.

The findings indicated that 57% of respondents agreed that the listed companies in DSE 
disclose their financial information appropriately. These findings corresponds with 
analysis done by U.S. Chamber of Commerce (2008), the analysis discussed that for US 
capital market to be efficient it needs to start adopting and practising global accounting 
and auditing standards to make the capital market strong. They proposed the use of 
International Financial Reporting Standards (IFRS) to reconcile their financial statement. 
Moreover the findings are also consistent with a study done by Gilson (2000) who 
explained the relationship of transparency and corporate governance and how it impacts 
on capital market efficiency. Gilson proposed that for a market to be efficient it requires 
good corporate governance which has the ability to make reliable disclosure of financial 
results.
On the other hand 59% of respondents disagreed that information transmission mechanisms in DSE are effective. The findings contradicts with a study done by Zou (2011) who proposed that for information efficiency to be optimal in a stock exchange, the mechanisms which are used to transmit information should be effective, reliable, timely and also the information transmitted should have optimal degree of completeness. Findings indicated that 57% of respondents strongly agreed introduction of free trade will contribute to growth of DSE. This findings are similar to a study done by Ewah, Esang, and Bassey (2009), they analysed effects of liberalization in different stock markets. The results revealed that liberalization of capital market has led to contribution to the growth of Nigeria capital market. The results also depicted that financial liberalization led to East-Asia capital markets such as Singapore, Hong-Kong and Bangkok to mature to the extent they are now considered as International Centers of Asia. However, the findings portrayed that Romania capital market and Sub-Saharan Africa have yet to experience growth with liberalization of markets.

On the other hand 48% of respondents agreed that implementation of free trade in DSE will reduce the cost of capital. Kim and Singal (2000) differs with the findings of this study, they explained that the impact of market opening in emerging markets leads to efficiency which is attributed by better allocation of capital and increase of productivity through foreign portfolio flows. Moreover the findings indicated that 55% of the respondents disagreed that liberalization will allow risk sharing between domestic and foreign agents. This finding contradicts with Perera (2012) who analyzed the effects of liberalization on emerging equity prices. Using panel data from developing countries the evidenced showed that financial, political and social risk will be shared between agents when the markets are opened and the markets will experience higher marginal return to capital.

Additionally the findings illustrated that 59% of respondents disagreed to large extent that foreign traders will have more access to information in DSE due to free trade. Odabasi, Aksu, and Akgiray (2004) results contradicts with the findings of this study. They analysed Turkish stock exchange which they found out liberalization has made the exchange efficient over time. They argued that liberalization of Turkish stock exchange has led to efficiency through foreign traders to have information advantage because of
better access to financial skills, talents, and domestic market participant attention which in turn lead to improve on the impact of foreign trades in the local market.

5.4 Conclusions

Based on the findings of the study, the following conclusions were founded on determinants of capital market efficiency, implication of capital market efficiency and best adopted practices used to promote capital market efficiency.

5.4.1 Determinants of Capital Market Efficiency

Regarding liquidity, majority of the respondents agreed that DSE market is able to accommodate large stock orders. However a large number of respondents strongly disagreed that brokers in DSE prefer to be anonymous. This indicated that majority of respondents in this study disagree that DSE market is liquid. Regarding technology, majority of respondents agreed that transaction turnaround time, availability of information to investors and clearing and settlement time have improved due to technology.

On regulation, majority of respondents strongly agreed that laws and regulation in DSE promotes transparency in stock markets activities, the respondents also agreed that the brokerage firms comply with CMSA disclosure requirements. This implies regulation in DSE is strong and efficient. On transparency, majority of respondents strongly disagreed that the stock prices in DSE reflects a fair value of the current performance of listed companies. The respondents also strongly disagreed that the media disclose the true events of the stocks in DSE. This indicates that, both price and information transparencies in DSE are still weak.

5.4.2 Implication of Determinants of Capital Market Efficiency to an Investor.

On implication of liquidity to an investor both proffesional respondents and institutional investors respondents agreed that they can sell their share easily,however majority of respondent strongly disagreesd that investors in DSE can diversify stocks cheaply. This implies that investors in DSE face liquidity challenges during diversifying their securities.
Implication of technology to an investor, majority of respondents strongly agreed that technology in DSE has lead in reduction of time taken for investors to trade, it has led to reduction of cost of trading. This implies that technology has increased in time, cost and information efficiency in DSE. On implication of regulation to an investors both professional respondents and individual investors respondents strongly agreed that investors trust the DSE on their investment. This indicate that the investors in DSE have confident and rely on the market for their investments.

The implication of transparency on investors, majority of both professional respondents and institutional investors respondents agreed that investors make informed decision with the available information. However they strongly disagreed that investors in DSE price securities correctly with information given. This indicate that transparency to DSE investors is mainly on information transparency rather than price transparency.

5.4.3 Best adopted Measures Used to Promote Efficiency

On demutualization, majority of respondents strongly agreed that demutualization of DSE will increase on efficiency, promote good governance structure and it will increase investor’s participation. Moreover majority of respondents agreed that demutualization of DSE will help segregating the current membership and trading rights, thus reduction of conflict of interest in management of the stock exchange.

Technology improvements, a large number of respondents strongly agreed that introduction of automation in DSE will increase information flow and efficiency; the respondents also agreed automation will increase in the speed of trading. This indicates that technology improvement will lead to an efficient DSE in terms of cost and time; however technology in DSE might lead to errors during trade execution.

Financial market liberalization, majority of respondents strongly agreed that free trade will lead to growth of stock exchange, however the respondents disagreed that free trade will lead to risk sharing between domestic and foreign agents, the respondents also disagreed that free trade leads to reduction of cost of capital in DSE. Thus majority of respondents disagreed that liberalization will promote efficiency of DSE.
5.5 Recommendation

5.5.1 Recommendation for Improvement

5.5.1.1 Determinants of Capital Market Efficiency

The study suggested that DSE must adopt a regulation system that focus on economic costs and benefits so as to protect the investors, promoting the development of the exchange and increase on the price and information transparency of the stock exchange. DSE should innovatively use technology to increase cost, time and information efficiency. Moreover the study suggested that the relevant media in DSE should disclose complete financial information and macroeconomic information of the related stocks this in turn will lead to increase of awareness to the public on importance of investing in DSE.

5.5.1.2 Implication of Determinants of Capital Market Efficiency to an Investor

The study proposed that DSE should increase liquidity through more price transparency this in turn it will improve on investors’ preference to invest in DSE. Moreover the study suggested that use of electronic trading will increase the market liquidity however DSE should have mechanisms that will reduce technical faults, human brain and effective laws and regulation should be used together with algorithm trading so as to prevent technical faults and price manipulation.

5.5.1.3 Best adopted Measures Used to Promote Efficiency

The study proposed that for DSE to increase on their efficiency, they suggested that government agencies to list in DSE which will increase on competition and public trust on the exchange. Moreover the study suggested that DSE should increase number of products in the market so as to attract more investors in the market and also increase number of listed companies in the exchange. Additionally, DSE should use more innovative ways to educate the public on benefits of investing in a stock exchange, this in turn will increase on public awareness enormously.
5.5.2 Recommendation for Further Studies

The study targeted on five determinants of capital market efficiency on DSE. The study suggests that future researchers can be conducted to analyze more determinants of capital market efficiency in DSE to make the research more authenticated and realistic. In addition to that, future researchers can add on knowledge gap on the discrepancies of the study that stock market can have strong regulation system yet the transparency and liquidity of the stock exchange is low.
REFERENCES


APPENDICES

APPENDIX 1: INTRODUCTORY LETTER

Dear Sir/Madam,

RE: RESEARCH STUDY

I am pleased to inform you that I am a student at United States International University pursuing a degree of Masters in Business Administration (MBA). As partial fulfillment for my degree, I am conducting research on the efficiency of the capital market the case of Dar es Salaam Stock Exchange.

Please note that any information you give will be treated with confidentiality and at no instance will it be used for any other purpose other than for this project. Your assistance will be highly appreciated. I look forward to your prompt response.

Yours faithfully,

Mombo Gillian Felician

Mobile Number: +255-769-060847

Email: gillianmombo@ymail.com
APPENDIX 2: QUESTIONNAIRE FOR INSTITUTIONAL AND INDIVIDUAL BROKERS (PROFESSIONAL RESPONDENTS)

SECTION A: BACKGROUND INFORMATION

1. What position do you hold in the firm .................................

2. For how long have you participated in the Dar es Salaam Stock Exchange?
   
   Less than 2 years 
   3-5 years 
   6-10 years 
   Over 10 years 

3. Level of Academic Education
   
   O- Level 
   A-Level 
   Graduate 
   Post-graduate 
   Others ....................

4. Level of Profession Education
   
   CPA 
   ACCA 
   CFA 
   Others ....................

5. Investors target group
   
   Individual Investors 
   Institutional Investors 
   Foreign Investors 
   Others ....................
**SECTION B: DETERMINANTS OF CAPITAL MARKET EFFICIENCY**

Indicate the extent to which you agree with the following statements by using a scale of 1 to 5 where 1= strongly disagree and 5 = strongly agree.

<table>
<thead>
<tr>
<th>A) Liquidity</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Brokers buy and sell large number of shares without large changes in price.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2) Brokers determine commission and fees to be paid using the bid-ask spread</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3) Stock price quickly return to the former levels after they changed in response to large stock orders.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4) The market is able to accommodate larger stock orders.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5) Brokers in the market prefer to be anonymous.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B) Technology</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>6) Information is readily available to all investors.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7) Introduction of electronic trading has led to lower transaction fees.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8) Transaction turnaround time has reduced.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9) Clearing and settlement days have reduced.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10) Trading system reduce operating cost in the stock market</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C) Regulation</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>11) The laws and regulation promotes transparency in stock market activities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12) Regulations increase investors’ confidence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13) Regulation enhances effective allocation of capital raised</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14) Listed companies meet annual disclosure legal requirement.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15) The brokerage firms compile to CMSA disclosure requirements</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D) Transparency</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>16) The publications of the company comply with accounting reporting standards.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17) The stock prices on the exchange reflect a fair value of the current performance of the listed companies.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18) The stock price reflects all available public information.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19) Brokers have enough knowledge on related stock to be traded.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20) Media discloses the true events information of the</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
related stocks in the market.

**E) Transaction Costs**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Increase in market turnover leads to low transaction costs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22</td>
<td>Information asymmetry between the buyer and seller increases transaction costs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23</td>
<td>Low transaction leads to price volatile due to increase of investors in the market.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24</td>
<td>The stock exchange brokerage fee is fair.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

25) In your opinion what are other variable which can be used to determine the efficiency of Dar es Salaam stock market……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………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11) Investors perceive the capital market is accountable.  
12) Investors get access to diverse investments in DSE  
13) Investors have confidence on capital market  

D) Implication of Transparency  
14) Investors price securities correctly with financial information given.  
15) Investors prefer more disclosure of market information  
16) Investors don’t engage in arbitrage activities.  
17) Investors make informed decision with available market information.  

E) Implication of Transaction Costs  
18) Low transaction costs encourage investors to hold shares willingly.  
19) Investors can cash their investments at reasonable prices.  
20) Low transaction costs reduce information asymmetry between buyers and sellers.  
21) Investors can directly save costs due to reduction in costs.  

22) How does the investor view the Dar es Salaam Stock Exchange…………………………………….?  

SECTION D: MEASURES USED IN DIFFERENT STOCK EXCHANGE TO PROMOTE EFFICIENCY.  

Indicate the extent to which you agree with the following statements by using a scale of 1 to 5 where 1 = strongly disagree and 5 = strongly agree.  

<table>
<thead>
<tr>
<th>DEMUTUALIZATION OF THE STOCK EXCHANGE</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Demutualization promotes governance structure and efficiency</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Demutualization enhances investor’s participation in the stock exchange.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Demutualization helps segregating the current members ownership and trading rights</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TECHNOLOGY IMPROVEMENT</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>4) Automation enhances information flow and efficiency.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Automation increase the speed of trading</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6) The stock exchange automation leads stocks to be sold easily

7) Technology has led to price manipulation.

26) Technology has led to market vulnerability caused by technical faults.

**TRANSPARENCY**

8) Price transparency helps investors to make informed decisions.

9) Price transparency affects awareness of the stock exchange.

10) There is appropriate disclosure of financial information of the listed companies.

11) Information transmission mechanisms are effective.

**FINANCIAL MARKET LIBERALIZATION**

12) Free trade reduces the cost of capital of the stock market.

13) Liberalization allows risk sharing between domestic and foreign agents.

14) Free trade contributes to the growth of the stock exchange

15) Foreign trades will have more access to information due free to trade

16) In your opinion what do you think are other measures which can be used to promote efficiency in the stock market…………………………………………………………………………………………………
APPENDIX 3: QUESTIONNAIRE FOR INDIVIDUAL INVESTORS.
SECTION A: BACKGROUND INFORMATION

1. Gender
   Male □ Female □

2. For how long have you invested in the Dar es Salaam Stock Exchange?
   - Less than 2 years □
   - 3-5 years □
   - 6-10 years □
   - Over 10 years □

3. Level of Academic Education
   - O-Level □
   - A-Level □
   - Graduate □
   - Post-graduate □
   - Others ..................
SECTION A: IMPLICATIONS OF CAPITAL MARKET EFFICIENCY TO AN INVESTOR

Indicate the extent to which you agree with the following statements by using a scale of 1 to 5 where 1 = strongly disagree and 5 = strongly agree.

<table>
<thead>
<tr>
<th>REGULATORY FACTORS</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Implication of Liquidity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Investors sell their shares easily</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2) Investors diversify their stocks cheaply.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3) There is increased market stability.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>2. Implication of Technology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Has technology reduced the time taken for investors to trade?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5) Has technology reduced the cost of trading for investors?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6) Investors can easily access information on stocks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7) Investors fully utilize all available information on related stock.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8) Investors can have direct access to different number of markets.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>3. Implication of Regulation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) Investors trust the stock market on their investments.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10) Investors perceive the capital market is accountable.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11) Investors get access to diverse investments in DSE</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12) Investors have confidence on capital market</td>
<td>1</td>
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<tr>
<td><strong>4. Implication of Transparency</strong></td>
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<tr>
<td>13) Investors price securities correctly with financial information given.</td>
<td>1</td>
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<tr>
<td>14) Investors prefer more disclosure of market information</td>
<td>1</td>
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<tr>
<td>15) Investors make informed decision with available market information.</td>
<td>1</td>
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<tr>
<td><strong>5. Implication of Transaction Costs</strong></td>
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<td>16) Low transaction costs encourage investors to hold shares willingly.</td>
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<td>17) Investors can cash their investments at reasonable prices.</td>
<td>1</td>
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<td>18) Low transaction costs reduce information asymmetry between buyers and sellers.</td>
<td>1</td>
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<td>19) Investors can directly save costs due to reduction in costs.</td>
<td>1</td>
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20) How does the investor view the Dar es Salaam Stock Exchange

.................................................................

**APPENDIX 4: LISTED DEALING MEMBERS IN DAR ES SALAAM STOCK EXCHANGE (DSE)**

<p>| | |</p>
<table>
<thead>
<tr>
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<tr>
<td>1.</td>
<td>Core Securities Ltd</td>
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<td>2.</td>
<td>Orbit Securities Company Limited</td>
</tr>
<tr>
<td>3.</td>
<td>SOLOMON Stockbrokers Limited</td>
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<td>4.</td>
<td>Rasilimali Limited</td>
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<td>5.</td>
<td>Tanzania Securities Limited</td>
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<tr>
<td>6.</td>
<td>Vertex International Securities Ltd</td>
</tr>
<tr>
<td>7.</td>
<td>Zan Securities Limited</td>
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