ASHESI

INVESTOR REACTIONS TO NEWS ABOUT FIRMS LISTED ON THE GHANA

STOCK EXCHANGE

THESIS

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INVESTOR REACTIONS TO NEWS ABOUT FIRMS LISTED ON THE GHANA

STOCK EXCHANGE

By

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DECLARATION

I hereby declare that this thesis report is the results of my own original work and that no

part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:…………………………………....

Candidate's Name:…………………………………………………...

Date:...…………………………………

I hereby declare that the preparation and presentation of the dissertation were

supervised in accordance with the guidelines on supervision of dissertation laid down by

Ashesi University College.

Supervisor's Signature:………………….........................

Supervisor's Name:…………………………………………………..

Date:……………………………….

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Abstract

The Ghana Stock Exchange has received a lot of attention in recent years. Some research done concerning the GSE conclude that the market is inefficient. Behavioural Finance has been used to explain the aggregate stock market, highlighting irrational decision making.

Directly related to the field of Behavioural Finance, this research presents a study into how individual investors react to news on the GSE and the reasons why they react in the ways they do. A descriptive study was done, using interviews and open-ended questionnaires to gather data from individual stock owners as well as some brokerage houses. It was found out that the response to new information on the GSE is fairly rapid. Findings showed that investors react more rapidly to negative news than to positive news. The type of information that respondents admit would cause them to withdraw their investments are mainly news of fraud and financial distress. However, some investors are immune to news, because of the issue of single-sided market orders which makes it difficult for them to react to news and trade the way they want.

It is recommended that brokerage houses, investments banking firms and entrepreneurs take advantage of the insufficient or non-existence of market makers, provide such services and help make the stock market more liquid.

Keywords: attitudes, investors, listed companies, reaction, news, Ghana Stock Exchange

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CHAPTER 1: INTRODUCTION

Background

The African Stock Market

The number of stock markets in Africa has grown substantially in recent years. With just eight stock markets in the 1980s (Yartey & Adjasi, 2007), there are currently twenty-nine stock markets (African Securities Exchange Association [ASEA], 2014). With the exception of the South African stock market whose performance has been found to be great, African stock markets are said to be wavering between completely inefficient or only weak-form efficient (Ntim, Oppong, Danbolt & Dewotor, 2011). Factors that have contributed to the slow development of African stock markets, include but are not limited to low liquidity, very few trading times, lack of international involvement and no derivatives trade (Ntim et al, 2011).

The Concept of Efficiency in Stock Markets

An efficient market can be explained as a market where prices of assets reflect all information affecting pricing. As Brealey, Myers and Allen (2014) explain, the basis for describing the efficiency of stock market has been the random walk theory which explains that when the stock market is efficient, prices of assets do not follow any trend but are random in nature. The market can be weak efficient, semi-strong efficient or strong efficient. In a weak-form efficient market, prices reflect all historical information. In the semi-strong form efficient market, prices of assets reflect both historic and current publicly held information. In the strong-efficient markets, prices reflect all available

information as well as private insider information, and as such no one can beat the market and make profits no matter what information they may have. It is important to note that when the market is only weak-form efficient, investors can predict prices and beat the market by using current public information and insider information they have access to. The only way that investors can beat the semi-strong efficient market is when they use privately-held information to their advantage.

The Ghana Stock Exchange

The Ghana Stock Exchange was incorporated as a private company in 1963, but officially started trading in November 1990 (Ghana Stock Exchange [GSE], 2014). The number of listed stock increased from fifteen to twenty-four, from 1992 to 2002 (United Nations Development Program [UNDP], 2003). Market capitalization grew from $84 million in 1992 to $1,873 million in 1994. Market capitalization however started to fall in 1995 from $1,649 million to $382 million by 2002 (UNDP, 2003). The good performance of the market in 1994 was influenced by the listing of Ashanti Goldfields Corporation which when delisted in 2004, significantly dropped market capitalization (Ntim, Opong & Danbolt, 2007). The Ghana Stock Exchange described by Ntim et al., (2011) and Alagidede (2006) is inefficient.

Problem Statement

The reaction of investors to news about listed firms should affect the value investors place on assets and that should determine the prices of securities. In advanced stock markets such as that of the United States changes in prices of assets due to the advent of new information is almost immediate. The reaction of the US stock market to

new information happens within about forty seconds of the news broadcast whilst in the

United Kingdom, the equity markets take between seventy-five and ninety seconds to

react to new information (Swedroe, 2013). On 21 September 2015, when automobile

company Volkswagen admitted rigging their car emissions test their stock price

immediately hopped down from €162 to €140 on that very day. By the end of September,

Volkswagen's stock prices had fallen by 40% (Robinson & Longley, 2015).

Price movements on the Ghana Stock Exchange show that investors react to news

in a way that is not particularly easy to explain. For instance, on 19 December 2014, two

Directors of State Insurance Company (SIC) were implicated in a GH¢3.8 million theft

case, threatening the entire company (Joy Online, 2014). Studying the company's stock

prices during the period, it was noticed that on Friday, 19 December when the news was

published by Joy News, the price per share was GH¢0.36 as it closed on the previous day

(GSE, 2016). On Monday 22nd December, the stock price surprisingly increased to

GH¢0.37, and remained at GH¢0.37 up until 6th of January the following year, when it

fell back to GH¢0.36 (GSE, 2016). The price fell steadily to its lowest GH¢0.17 by 12th

February 2015.

On 24th October 2015, it was reported that Tullow had been adjudged Ghana's

Top Company for 2014 at Ghana Club 100 Awards (Ghana News Agency, 2015). The

company's share price was GH¢32.89 two months before the news. However, the stock

price remained GH¢32.89 after this news until 24th November (exactly two months later)

when the price dropped to GH¢28.00 (Ghana Stock Exchange, 2016).

On 30th March 2010, it was in the news that GCB Bank had laid off two hundred

and fifty-one workers following a 50% reduction in profits, compared to the previous

year (GhanaWeb, 2010). Whether the firing of these workers was considered a good move or not, depended on the views of the investor. Looking at their stock prices, the stock closed at GH¢0.91 on the day prior to the news (GSE, 2016). Following the news, the stock price rose gradually to about 8% by 11th April and fell towards the end of the month. (GSE, 2016).

Investors' behaviour on the Ghana stock market, which this research sums as their reaction to news cannot be easily explained. Research involving the Ghanaian stock market, done by Ntim, Danbolt and Dewotor (2011); Appiah-Kusi and Menya (2003); Dewotor and Gborglah (2004); Jefferis and Smith (2005) and Magnusson and Wydick (2002), were interested in the efficiency of the GSE, and some African stock markets. Kyereboah-Coleman and Gyire-Tettey (2008) looked at how macro-economic factors affect pricing in the market. Asamoah and Quartey-Papafio (2011) looked at how to estimate the beta risks of listed firms. Some others like Onyuma (2006) focused on stock market integration.

From research done, attention has not been paid to how investors react to unexpected information and why they react the way they do. Being able to explain the reasons behind the behaviour of the GSE, from the point of view of the investor is what this research is seeking to do. In order to understand how investors react to new information, it is only a matter of essence that this paper also identifies the factors that influence people to buy equity positions in public companies.

Research Objective

Considering the problem statement above, the main goal of this research is to understand how Ghanaian investors react to new information about listed firms on the GSE. To achieve this main goal, the study seeks to obtain significant insight into:

1. Factors that motivate Ghanaians' investments in listed stock

2. How investors react to unexpected news about listed firms

3. Why Ghanaian investors react to news the way they do

Research Questions

To fulfil the research objectives identified, this study seeks to answer the following questions:

1. Why do people invest in the stock of firms listed on the Ghana Stock Exchange?

2. How do investors react to unexpected news about listed companies?

3. Why do investors react to new information the way they do?

Conceptual Framework
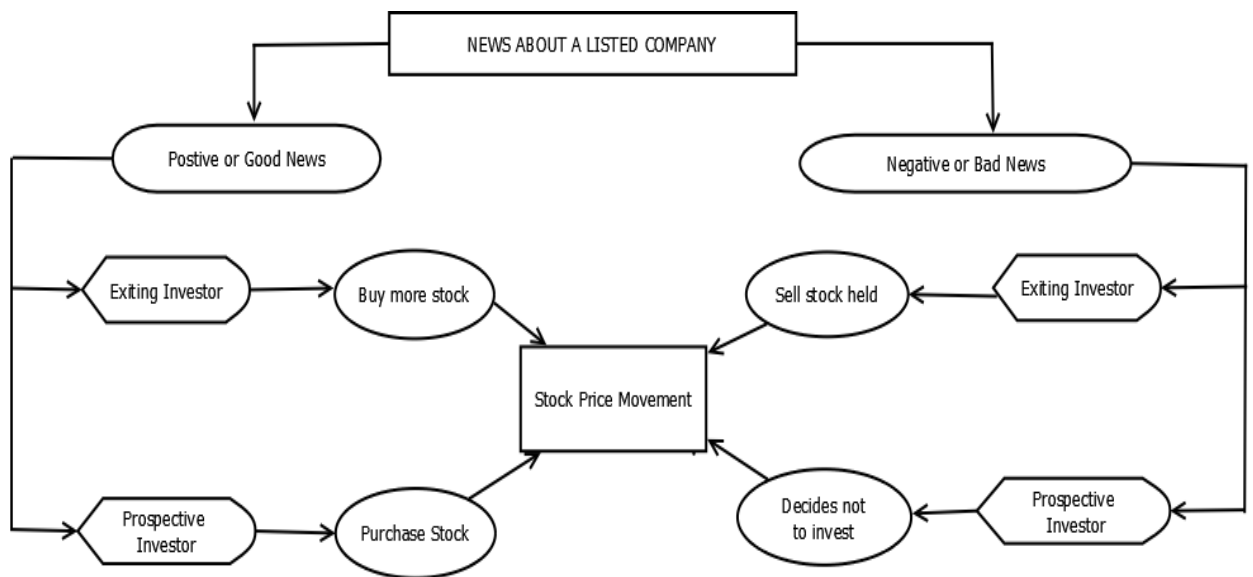
Trading stock, like any investment has to do basically with risk and return (Bodie,

Kane & Marcus 2010). In the light of the performance or the expected performance of a

listed company, it holds that in the instance of negative news such as those that point the

firm towards financial distress, prospective investors avoid investing whilst existing

investors sell their stock (Jins, 2011). This is to reduce the investor's exposure to high

risks, perceived with the advent of negative information. Positive news about a company

makes investing in that company attractive for both prospective stock investors and

exiting investors of the company, based on the fundamental theories of finance (Barberis

and Thaler, 2003). The interactions of investors in response to news on stock markets

determine stock price movements.

The illustration (shown in the diagram above) may hold for some developed stock

markets like those in the United Kingdom. Some research done on the aggregate stock

market show that this form of reaction to news as shown in the diagram is not a given, for

various reasons explored by behavioral finance studies of rational decision making in investments. Although it is expected, the concept underpinning reaction to news described may or may not hold in the case of the GSE as this form of interaction depends on how individuals, institutions and so on, trading on the Exchange behave. The focus of this research is however on individual investors

Relevance of Study

Recent contributions towards discussions on African economic development have been a call to integrate African stock markets so as to make stock trade across the different countries easy. Effort has been made by the African Securities Exchange Association towards this goal. With the increasing integration discussion, regulators of the various stock exchanges as well as companies across Africa will require reliable information about investors in Ghana: the factors that motivate them to invest in stock and how the Ghanaian stock market is affected by their attitudes to new information. Findings of this research could be useful to ASEA in formulating listing rules for integrating the markets.

The regulators of the Ghana Stock Exchange, the Securities and Exchange Commission could use the findings of this research to ascertain the weaknesses of the GSE, as noticed or (and) experienced by investors so as to identify what would be necessary for the stock market's development.

Furthermore, with the growth in the Ghana stock market and the possible integration of the African stock markets, it is likely that brokerage, investment banking and other financial services will increase. Entrepreneurs and current financial advisory

firms could use the findings of this research to gain insights into which services stock traders or investors may need with time.

Finally, this research will not only contribute to existing literature, but also direct the path for further research.

Methodology

This research was purely qualitative. A descriptive research that used primary data. The population around which the study was conducted was individual investors who own shares in firms listed on the Ghana Stock Exchange. A sample of 15 individual investors was drawn from Accra. They were reached through purposive and snowballing methods of sample selection. Two brokerage companies were randomly selected to be included in the study. Face-to-face interviews was used to gather data from brokerage firms and open-ended questionnaires were used to gather data from individual investors. Data was analysed using Microsoft Excel and statistical software for calculating Chi-square and Fisher's Exact Tests of significance. Findings were presented largely with frequencies (bar graph, pie chart and contingency tables) and were discussed.

Scope and Limitation of the Study

This study involved investors largely in Accra because most of these investors work in Accra and its environs. The study focused on individuals although investors in the stock market include institutions. The research generally looked at how holders of equity stakes in public firms react to news. It then went ahead to find out why they react to news the way they do. The study involved individual investors, regardless of education level, gender or occupation.

A limitation of this study is that, due to its focus on individual investors, findings may not completely explain all the interactions behind price movements on the GSE as institutional investors may react differently from individual investors to the same news, and may have different reasons for their reactions.

Outline of Thesis Report

The rest of this paper is organized in the following order: Chapter Two reviews works done in the area around which this research is organized. In this section, related works are presented, compared and contrasted to enhance understanding into the area of study. In Chapter Three, the research design is discussed, sampling methods, data gathering and data analysis information are also discussed. Findings from the data collected and information obtained are presented and discussed in Chapter Four. The final section, Chapter Five presents conclusions drawn from the research, recommendations, and suggests path for further research.

CHAPTER 2: LITERATURE REVIEW

Introduction

In this chapter, related studies relevant to the area of study are identified and discussed. Findings of various studies are compared and contrasted in order to establish contributions and contradictions. Related literature are reviewed under themes bordering around financial concepts and the aggregate stock market, behavioral finance topics, how investors react to news and the reasons for some of the observed attitudes to information in different stock markets.

Financial Concepts and the Aggregate Stock Market

One of the fundamental concepts in finance is the concept of risk and return, generally explained that high risk require high return. The assumption here is that individuals or investors assess the risk involved in investing in a particular asset and if the risk involved is high according to investors' understanding of the nature of that investment, they require high returns to compensate for the risk. It is on this Rational Expectation Framework that financial assets are usually priced (Sargent, 1993 as cited in Barberis and Thaler, 2003). This framework does not only imply that investors are rational, it also holds that investors' beliefs are correct, they process new information properly and they also have enough information about their economy to inform correct distribution of their assets (Sargent, 1993 as cited in Barberis and Thaler, 2003). Behavioural Finance relaxes the assumption that investors are rational. This has led to several investor-psychology studies as they have direct relevance to practitioners of

investment management, corporate financing and personal financial planning (Byrne and Brooks, 2008).

As acknowledged in Barberis and Thaler (2003), it is clear that traditional finance concepts are unable to adequately explain the aggregate stock market and individual trading behaviour. The authors explored the concept of arbitrage presented by the Efficient Market Hypothesis which puts forth that in situations when irrational investors, also known as noise traders over-react or under-react to information leading to mispricing, rational investors, known as arbitrageurs take advantage of the mispricing and make riskless profit. The actions of these arbitrageurs tends to correct the mispricing caused by irrational decision makers.

In relation to arbitrage DeLong, Shleifer, Summers, and Waldman (1990) presented a model for the asset market, focusing on irrational investor decisions and the price of arbitrage. The research concluded that the risk created by unsophisticated or irrational decision makers make it highly unattractive to take advantage of mispricing because arbitrageurs would have to bear the consequences of the unpredictably baseless decisions of noise traders (DeLong, Shleifer, Summers & Waldman, 1990). Barberis and Thaler (2003) confirmed the observation presented in DeLong et al., (1990) by adding that an entire stock market may not respond to information on mispricing because arbitrage is highly risky and the cost of implementing arbitrage may be too high (Barberis & Thaler, 2003). This implies that a stock market may have all of its investors not responding to a particular news because irrational investors may not react appropriately to it and rational investors may not be ready to take advantage of the mispricing caused, due to the risks involved. Although the high risk that is involved in arbitrage may not

hold in trade on some of the big stock markets in developed economies, it may hold for

weak stock markets like the GSE due to the unsophisticated nature of trade on the market.

Over-Reaction and Under-reaction to New Information

Research done by Jagadeesh and Titman (1994) confirmed other researches like

DeLong et al., (1990) and concluded that investors initially under-react to information

and later resort to a long-term overreaction (Jegadeesh & Titman, 1993). Although there

are a number of similar researches confirming this observation, it has been quite

challenging for the various researches to explain the initial under-reaction (Byrne and

Brooks, 2008). It is however important to distinguish the causes of over-reaction by

Barberis, Shleifer, and Vishny (1998) from reasons given by Kent, Hirshleifer and Teoh

(2002). Barberis et al. (1998) attributes long-term overreaction to representative

heuristics, which is the tendency of individuals to assess the likelihood of an event

happening based on similar experiences in the past. They are therefore likely to

extrapolate a company's recent earnings announcement further into the future leading to

over-reaction (Barberis et al., 1998). Kent et al. (2002) attributes long-term overreaction

to self-deception and wrong attribution, explaining that wrong attribution prevents

individuals from assessing the factors that have effects on the value of a firm.

Investors' view of Companies and Investments

Anderson and Smith (2006) conducted a research on the 'classic investments

mistake' of confusing a great company with a good investment in the United States. The

research studied the stock performances of the companies that were featured in the

Fortune Magazine (top ten greatest or admired companies) from 1983 to 2004. The

researchers found out that all of those companies outperformed the S&P 500 by substantial margins. A survey conducted revealed that these companies had high investor confidence and very low book-to-market ratios (Anderson & Smith, 2006). According to the research, investors believe that such firms are good firms and thus, even negative public information concerning the firms did not really affect the value of the firm (Anderson & Smith 2006). It can thus be said that news about such firms may not move investors to act or respond because of the already established organizational confidence.

Benartzi and Thaler (2001) used a naïve 1/n diversification strategy to understand what influences investors' chosen asset allocation. Consistent with some of the reasons why investors do not respond to unexpected public information, the research found out that investors usually invest in the stock of their employer companies. This is considered irrational because it implies double risks: a possible loss in share value as well as a possible loss in labour income earning. Such individuals who invest in their employers' stock have confidence in the performance of the company and as such may underreact to new information about those firms (Benartzi & Thaler, 2001). It is plausible that the employees would not want the price of their employer firms to plunge and as such would not react to negative news, which would mean selling their stake.

Shiller (2003) added to the discussion on risk by explaining that intellectual recognition of risk may not be enough to provoke action without an emotional or affective response. This means that although an investor may understand a negative or positive impact of a publicly available information on the stock of a particular company, he or she may not be moved to take any action or even respond to that information if they are not affected emotionally to the news (Shiller, 2003).

Dividends Announcement - Evidence from the Nigeria's stock Market

Campbell and Ohuocha (2011) studied how the Nigerian Stock Exchange (NSE) react to stock dividend announcement and the information content of those announcements. Their research used a sample of sixty companies and ninety-nine stock dividend announcements from 2002 to 2006. The sampled companies were companies that announced dividends during the period from 2002 to 2006. The research calculated abnormal returns on these stock and their findings showed that stock markets react positively to late stock dividends announced by companies outside the official trading window. This suggests that some investors receive information about the late dividend announcement from 'grapevine before the news become public knowledge. Specifically, it was found out that about 11 days before the announcement of a positive news of a company, the stock price of that company grew very high. This indicates that by the time positive news became public, some investors who had insider knowledge would have bought stocks of the company about 11 days before (Campbell & Ohuocha, 2011). It therefore follows that by the time information becomes public knowledge, there is little or no reaction to the new information, partly because certain investors would have already taken decisions based on their insider knowledge.

Although there could be other reasons for the observed reaction, Campbell and Ohuocha (2011) did not explore the possibilities of other factors causing the low reaction after information is publicized.

The findings of Campbell and Ohuocha (2011) confirms Kent, Hirshliefer and Subrahmanyam (1998). In understanding why some investors refuse to react on the stock market, even in the light of negative information, Kent et al. (1998) discussed another

dimension of overconfidence. Investors are overconfident not because they simply believe that their investment will do well, they are overconfident because they hold some private information which they trust over market information (Kent et al., 1998). Investors therefore do not react based on any particular market suggestions or expectation.

Kent et al. (1998) further explained that in any case when public information confirms the private-held information, it leads to *self-attribution* - that is the propensity to trust the sources of those private information so much that unexpected public information about the companies do not cause them to take any action (Kent et al., 1998). Hong and Stein (1999) confirmed this and describes such investors as 'news watchers' because they base their trade on everything but publicly available information. Among 'news watchers', public information spread but take effect very slowly (Hong and Stein, 1999).

Calendar Anomalies – Evidence from the Ghana Stock Exchange

Alagidede and Panagiotidis (2006) studied calendar anomalies on the Ghana Stock Exchange using a conventional method of assessing the seasonality of stock returns. With relation to the month-of-the-year effect, their findings showed that the popularly known January Effect was not existent in the returns shown on the GSE. Instead, it was found that returns on the GSE were particularly high in April. The paper attributed the observed high April returns to the idea that in Ghana, publicly listed companies are expected to submit their annual reports by March. Investors are therefore able to assess the financial statements and are able to react to the information in April.

The findings with the day-of-the-week effect showed that returns on the stock market were highest on Fridays and lowest on Mondays. This was attributed to reporting

of negative unexpected news during weekends. According to the research, the weekend

reporting of negative information causes investors to sell on the coming Monday

(Alagidede & Panagiotidis, 2006). The research further mentioned that analysts attribute

this anomaly to investor psychology and stand to mean that Monday is regarded as the

beginning of the week and as such is seen as the worst day whilst Friday ends the week

and as such makes investors more optimistic (Alagidede & Panagiotidis (2006).

As shown above, Alagidede and Panagiotidis (2006) imply that since investors

see Mondays as a *bad* day, even if positive information about a firm is made public

during the weekend, investors may not react to the positive news on the next trading day

which is Monday. The finding stating that trading occurs frequently on Mondays and

Fridays is contradicted by Yartey and Adjasi (2007) which explain that trade among

investors is very little, thus the low liquidity characteristic of the Ghana Stock Exchange.

It is worth mentioning that intuitive reasons for the finding of Alagidede and

Panagiotidis (2006) may be hard to explain thus the need for a qualitative study to

understand the behaviour or attitudes of Ghanaian investors to new information about

companies listed on the Ghana Stock Exchange.

Why People Invest in Stock

Hong, Kubik and Stein (2004) researched on the impact of social interaction on

stock-market participation. The paper acknowledged that factors that determine

individuals' or households' interest in trading stock include wealth and level of education

(Hong, Kubik & Stein, 2004). According to this research, when people are wealthy, they

have more to invest and as such the fixed cost of investing, which may include their time

spent in paying attention to the investment and so on are less of a deterrent to them.

The level of education also increases the interest in trading in stock and the general interest in the stock market (Hong et al., 2004). The interpretation of this reason for investing in stock is that education reduces the fixed cost of investing, such as the cost of participation. It is easier for would-be investors to easily understand the nuances of the stock market, especially the market's risk-reward trade-offs (Hong et al., 2004).

The core of Hong et al. (2004) highlighted that people's participation in stock markets is highly affected by social interaction – which is the situation where investors have or belong to groups where they can easily discuss their investments, their expectations of the market and so on. The cost of investing in stock for an investor involved in social interactions is less than non-social investors because of the presence of idea-sharing among the social investors. According to the research, this social interaction is done through word of mouth (conversations) or simply observational learning (looking at what other investors are doing). It concluded that social interaction can explain a good amount of household's interest in stock trade (Hong et al., 2004). The paper was however vague as to the exact way through which social interaction promotes interest in the stock market (Hong et al., 2004).

Literature Conclusion and Theoretical Framework

Literature reviewed and discussed concerning investors behaviour and participation in stock markets are consistent with the theoretical framework of this study, which is based on both traditional finance concept and behavioral finance. Prospect theory has been used to explain investor attitudes to risks of investment (Levy, 1992). The theory explains that the value that investors place on the outcome of an investment is determined by the gains or losses they made on investments in the past (Levy, 1992).

Investors therefore tend to be averse to the slightest possibility of loss and as such,

require high returns for those risks, generally known as *high risk, high return* (Brealey et

al, 2014).

Behavioural finance has become highly relevant because it recognizes that

investors are not completely rational at all times, that is, they are usually biased and

sometimes take decisions which are inconsistent with utility maximization (Brooks and

Byrne, 2008). They may be too conservative and may not take advantage of the

profitability of a venture (Brealey et al, 2014). Other investors tend to be overconfident

and may venture into certain investments even though information may suggest that the

venture may be unprofitable (Brealey et al, 2014). Sometimes, people hold positive

information too long into the future. Some investors invest in popular companies, because

they usually believe that they are good investments. People who invest in their employer

companies tend to react slowly, especially to negative information about their stock

because they are confident about the performance of their employer companies (Benartzi

& Thaler, 2001).

CHAPTER 3: METHODOLOGY

Introduction

This study sought to understand generally, Ghanaian investors' responds to news on the GSE. To understand this, the research sought to answer three major questions: (1) why people invest in the stock of firms listed on the GSE, (2) how investors react to unexpected news about listed companies and (3) why investors react the way they do to these new information. This chapter discusses the research design of this study with narratives on the method by which data was gathered, collected, analysed and presented. The chapter concludes by discussing the limitations of the chosen methodology.

Research Design

This research is purely qualitative. It is a descriptive research that incorporated mainly qualitative research approaches to data collection. Descriptive research was deemed appropriate because little is known about Ghanaian investors in relation to their responds to unexpected information about listed firms. Primary data was used as it was necessary to understand how investors react to news, which may not be achieved using secondary data. The study sought to find out the reasons why people buy publicly traded stock and why they respond to news the way they do.

Sample Design

The population around which this research was conducted was all individual investors who own shares in firms listed on the Ghana Stock Exchange. A sample of fifteen investors was drawn for the study. This comprised of individuals who own equity

stakes in the shares of listed companies, regardless of gender, level of education, or occupation. This was done because the research was not interested in exploring investors' behaviour based on such demographic factors. The general understanding that was sought to be gained from this research required views and consensus from a diversified group of investors so as to establish a more general understanding of investor attitudes. Two brokerage houses were randomly selected to be part of the research. It was absolutely necessary to include brokers in data collection because of their direct contact with investors and their knowledge of investors' reaction to news. The Ghana Stock Exchange was also included in the research because it also work directly with the brokerage houses and have some useful insights, necessary for this research.

A combination of snowballing and purposive sampling methods were used to reach individual respondents. Consent forms were sent to the brokerage firms, which forwarded them to their clients. This method was used because it was difficult to identify individuals who own shares in listed companies. It was easier through the brokerage companies as they are in consistent communication with investors and were in a better place to introduce the research to them. Respondents who were interested in being part of the research were encouraged to inform other investors they knew.

Data Collection

Data was collected using two main tools: semi-structured interviews and open-ended questionnaires. Considering that this research was focused on understanding investors, the tools mentioned were considered most appropriate for gaining some depth into the topic.

Open-Ended Online Questionnaire

Fifteen individual investors participated in the research, providing answers to detailed open-ended questionnaires. The average length of time taken to complete a questionnaire was sixteen minutes. Online questionnaires were preferred because it provided anonymity, preventing the discomfort that comes with discussing one's investment with another. The researcher assumed that respondents hold their investment decisions and information privately and may be uncomfortable to discuss them face to face. The nature of the questionnaire also allowed investors to share thoughts ideas and other information they wanted to include in their answers.

A questions was asked in order to determine the age group in which investors fell. Ages of investors were grouped as: from 18 to 30, from 31 to 50 and above 50. This classification was used based on the general understanding that a person, at 18 years is considered an adult, and within the period from 18 to 30 years, an individual is beginning to build a career, working actively on their first few jobs, hoping to make at least enough to cater for themselves. From 31 to 50 years an individual would have worked at least for some time, usually a period of over ten years and is actively saving or has been able to save some amount of money. Above 50 years, an individual may getting ready for retirement and may generally have different responses to issues of money and investments compared to the other age groups.

The period within which investors purchased their shares was also considered. The periods were grouped as: before 2003, from 2003 to 2006, from 2007 to 2009, from 2010 to 2014 and after 2015. The grouping was done based on the investment climate around the GSE around these times. The period before 2003 can be said to be the period

before significantly high developments on the GSE began. Growth of the Exchange was

positive, however the investment environment was relatively small compared to post

2003, when the stock market's development was more rapid (Arthur, 2003). The period

between 2003 and 2006 was quite a popular era in the history of the Ghana Stock

Exchange. Four companies: Clydestone Ghana Limited, Benso Oil Palm Plantation,

CAL Bank Limited and Starwin Product Limited all got listed in 2004 (Agama, 2011).

Two years into the popularity created by these IPOs, Ghana Commercial Bank also

issued an IPO which was oversubscribed by over 18 million cedis, setting pace for the

investment community (Agama, 2011). Compared to the previous period, the years from

2007 to 2009 were relatively calm except for the listing of UT Bank. The period from

2010 to 2014 was characterized by a vibrant investment activity as Tullow Oil in 2011,

issued and IPO which was oversubscribed (Agama, 2011). Within this period the Ghana

Stock Exchange was adjudged Africa's most innovative Stock Exchange (GSE, 2013).

The period after 2015 was considered because it is the most recent.

Amount of money invested was grouped in such a way as to make room for very

small investments (refer to Appendix B). The nature of the questions in the questionnaire

was to help easily understand the respondent's profile and their investments, their

reaction to certain events as well as their thoughts about investing in listed companies.

Semi-structured Interviews

Heads of three companies: the GSE and two brokerage houses were interviewed.

The interviews took an average of 35 minutes per institution. These institutions, having

worked closely with investors, were in good positions to discuss some of their

observations, which were valuable in this research. The interviews were semi-structured

so as to allow for unanticipated questions and answers, necessary to gains in-depth

knowledge into investors' feelings, thoughts, expectations, general knowledge and ideas

concerning the area of study, which were known to these institutions in their capacities.

The main questions which run through the interviews were formulated to recognize

who the main investors in stock are, how investors respond to news using past instances,

the challenges of trading on the GSE, general characteristics of investors when it comes to

stock trade, and the complaints investors usually have about their investments.

Data Analysis and Presentation

Data obtained from individual investors was analyzed using Microsoft Excel and

statistical tools for performing Chi-Square and Fishers' Exact test for significance.

Contingency/cross-tabulated tables were used to find how different factors that link to

investors' attitudes were related. Cross-tabulation was also necessary to establish or

assess the variations in findings across different groups of investors. Results of the

analyzed findings were presented using frequencies like pie charts and bar graphs for

their ease of understanding.

Contingency tables were analysed using Fisher's Exact Test in order to establish

significance – that there is an association between the variables present in the

contingency tables. Fisher's Exact test was used as opposed to Chi-square test because

the data set in this research are small and the frequencies in some of the cells in the

contingency table were less than 5. Since most of the contingency tables are 3x3, the

Fishers' Exact Probability test: 3x3 was used to test significance of the data observed.

With the 4x3 contingency table, Fishers' Exact Test could not be performed so the Chi-

square test was done to find significance although it is not appropriate for small data set like in this research.

A simple factor analysis was done manually to well categorize some of the responses investors gave concerning their reasons for investing in stock. This was done by identifying the common or redundant factors and grouping. Instead of a statistical factor analysis, this simple factor reduction was used because the number of respondents were few, 15 respondents and their responses were identified around four major reasons. Due to the highly qualitative nature of this research, it was easy to reduce the factors to two main underlying reasons for investing based on investors' answers to some of the questions.

Limitations in Methodology

Interviews or focused group discussions with investors could have been very helpful in obtaining depth into the topic. The online questionnaire, though was open-ended is restricting. Also, the use of online questionnaire may have discouraged some investors who wanted to be part of the research but are not technologically savvy. Finally, although it was not observed in the data collected, the sampling approach and data collection methods could lead to a situation where respondents are skewed towards a certain level of education or wealth.

CHAPTER 4: FINDINGS

Introduction

This chapter presents the insights that were obtained from the primary research conducted. The findings presented were obtained from opened-ended questionnaires completed by individuals who own shares in listed stock as well as insights from interviews with brokerage houses. The chapter discusses these findings along with existing literature and previous works. Necessary relationships are drawn and explained in order to answer the research questions and to give more insight into the research topic.

Reasons for Acquiring Shares of Listed Companies

An insight obtained from interviews with brokers is that those who invest in publicly traded companies typically have relevant knowledge about trade in stock and the nuances that accompany it. Four distinct reasons were given by individual respondents for purchasing stock. Some respondents explained that they were drove to buy shares of certain companies because they, from their point of view identified those companies as ones with high potential for future success. The focus therefore was not on the *now* but rather on the future of their investments. Some respondents bought shares because their friends and (or) family encouraged them to or recommended some stock to them. A group of investors found the need to be shareholders of companies. The focus for this group was on having an investment or being part of a successful company. Some other group of respondents bought their shares in certain companies because at the time they decided to invest, those companies were popular. Owning shares in such companies was

definitely good, for the great investment that they were and the feeling of having invested in a great company.

Some of the reasons given by respondents are consistent with the findings of Anderson and Smith (2006) which studied the *classical investment mistake* and found out that many people in the United States invested in companies which were featured in the popular Fortune Magazine (Anderson & Smith, 2006). As shown, investing in a company because of its popularity is not uncommon. At the heart of it, investors are concerned about the financial reward of their investments and as such will invest in companies in which they believe. Deciding on which company is promising enough, some investors consider the popularity.

In analyzing the four reasons: future prospects, recommendations from friends and (or) family, the popularity of firms and, the desire to be shareholders, a simple manual factor analysis was done to reduce the variables as shown in figure 1.
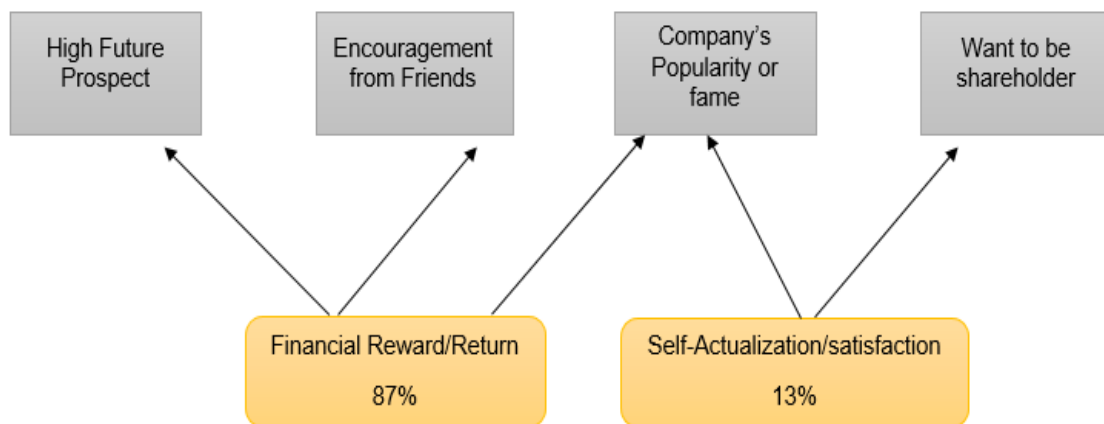

Figure 1 Factor Reduction for Reasons for Investing in Stock

Source: Author's deduction from field research

Self-actualization was identified as a factor as was implied from investors' responses. Some investors believe that investing is only a *matured* thing to do, regardless of it being in stock, fixed income or others. With investors who admitted that they invested in shares because they were recommended to them, it was linked to the financial reward involved. This is because the recommendations made by friends about those companies are on the basis of good performance or expected good performance of those companies. Thus, investing based on those recommendation is essentially investing because of the financial reward. Investing based on the popularity of a firms was also linked to financial reward for the most part, because, as established in Anderson and Smith (2006), people invest in companies that are popular, expecting them to do well in future and produce worthwhile returns. Few people who invest in popular stock as mentioned do so because of the good feeling of being an investor in such a company. It holds therefore that a high majority, forming 87% of respondents invest in stock because of the financial reward and 13% invest in stock because of the need to, and the satisfaction of being involved in a *good* investment.

How Individual Investors React to News About Listed Firms

The general perception is that Ghanaian investors do not react swiftly to information and is a major reason why the stock market is dormant. Insight obtained from interactions with some brokerage houses is that the reaction of Ghanaian investors to unexpected information is rather fast, definitely not as swift as it is in more developed stock markets. However, unlike in developed markets, the responses on the Ghanaian stock market are not noticed because they yield little or no results, and as such have very little effect on the share price movements of the companies.

Brokerage companies are the first point of contact in the reaction process of investors to news. It usually begins with phone calls or e-mails, inquiring of brokers the possible impact of the news on their investments. The process usually ends with a sell or buy order from investors. Other people make their own decisions based on various factors surrounding the information to sell or buy.

Similar Behaviours Among Investors

Insights gathered from interviews with brokers explained that investors often behave in similar fashions. At a given point in time, without glaring reasons for an investor to sell off their stock, it is easy to see many investors selling a particular stock or almost all of them buying a particular stock – again, even in situations where there seem to be no economic or financial reason to sell or buy those stock. It was found that apart from selling one's stock due to reasons relating to the financial performance of the companies, some investors simply want their monies back to be used for other things. There are however certain investors who also sell their stake because somehow, they found out that other investors are selling their stake. This similar trading behaviour contributes to the situation of single-sided market orders – to be discussed in the next subsection of this chapter.

The findings of Hong et al. (2004) shows that social interaction determines people's participation in stock markets, in fact, the more individuals or households interact or have the opportunity to interact with others about their investments, whether through active word of mouth conversations or keen observation of what others do, the more they are interested in participating in the stock market. It is thus not surprising that

investors behave similarly on the GSE, which is in fact, a small stock market with less than 30 trading firms trading actively.

Reactions to Positive News

Responses gathered from investors show that people react more quickly to negative news than to positive. Figure 2 collates some of the responses given by respondents.
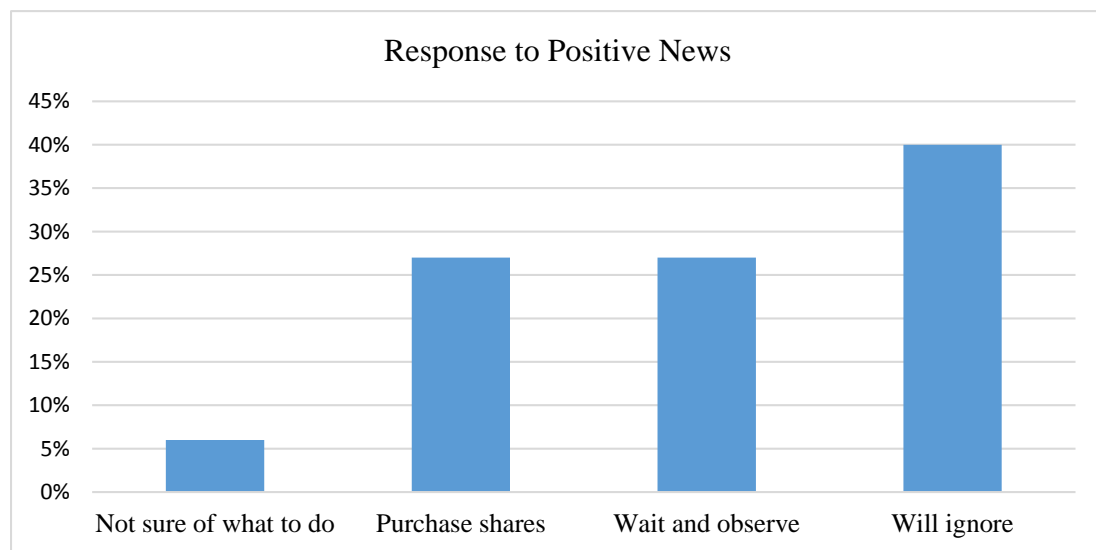
Figure 2 Investors' Response to Positive News

Source: Field data

When respondents were asked what they would do with the advent of positive about any of the listed firms, 6% of respondents said they would not know what to do, whether they are already investing the company or not. Of course, other respondents (27%) admitted that they would buy more shares if they are already investing in such firms or spread their investment into such companies if they are not already investing in those companies, and recommend them to their friends. There were some respondents (27%) who mentioned that they would wait and observe how worthwhile the positive

news is before they react. Most of the respondents (40%) would do nothing about the

news. From this, it can be seen that the response to positive news is minimal.

Reactions to Negative News

As mentioned earlier in this chapter, some investors sell their shares when they

find out that other people who invest in the same companies are selling their stake - for

the fear that the company may not be doing well and that their investments may be in

trouble. The response to immediately sell off and withdraw is not uncommon as

identified by the prospect theory. The theory identifies that investors tend to be averse to

the slightest possibility of loss and as such may take steps to avoid them or require high

returns for bearing the risks.
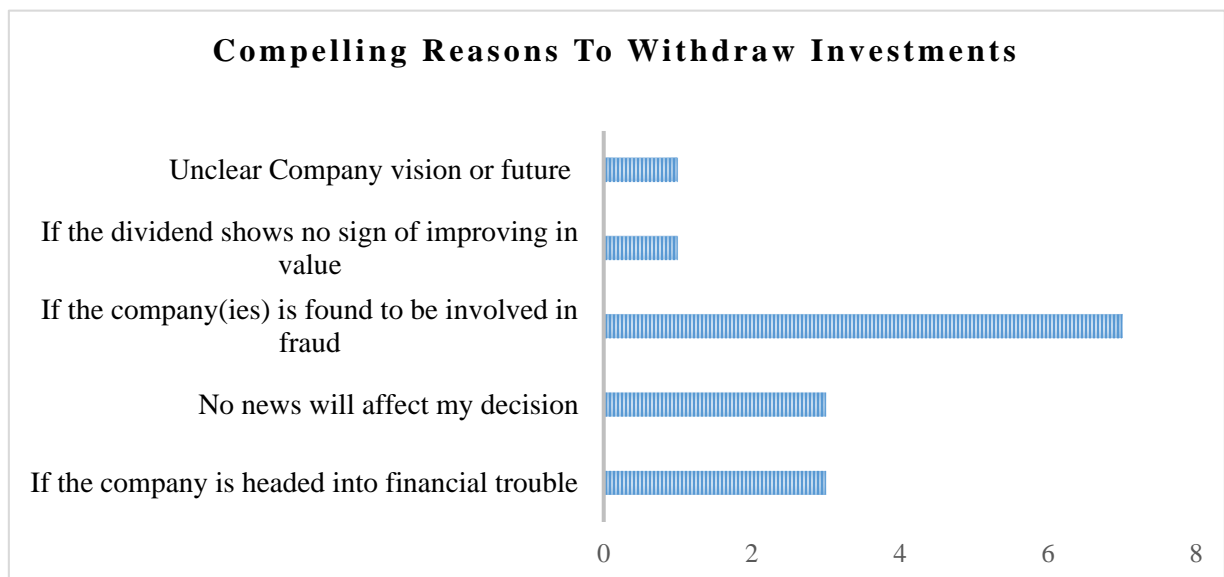
Figure 3 Compelling Reasons to Withdraw Investment from a Company

Source: Field data.

It is worth mentioning that investors' responds would also depend on the type of

negative news. Presented above is a collection of some of the situations respondents

mentioned will cause them to immediately withdraw their investments from companies. Majority of the respondents, forming about 47% will be disturbed to the extent to provoke sale when there is news of fraud concerning their companies. News pertaining to poor finances and financial distress of companies was most important to 20% of the respondents. An equal proportion, about 20% of respondents acknowledge that no form of negative news will cause them to act.

It can be fairly implied that these are the types of news that produce affective response from investors. This insight can be explained by Shiller (2003) which explained that intellectual recognition of risk may not be enough to provoke action from investors when the information does not kindle an emotional effect in them. (Shiller, 2003).

Exploring Relationships

The research also explored associations in order to identify if there exit relationships between such variables as investors' age and the amount invested and investors' reaction to news.

Age of Investors and Reaction to news. It was found from some investors' responses that in any case, the loss of their investments will not have any effect on their general finances, suggesting that they do not depend on the returns of their investments for their livelihood. Figure 4 is a bar graph that shows the age distribution of people who admitted that the loss of their investments will not affect their finances at all.
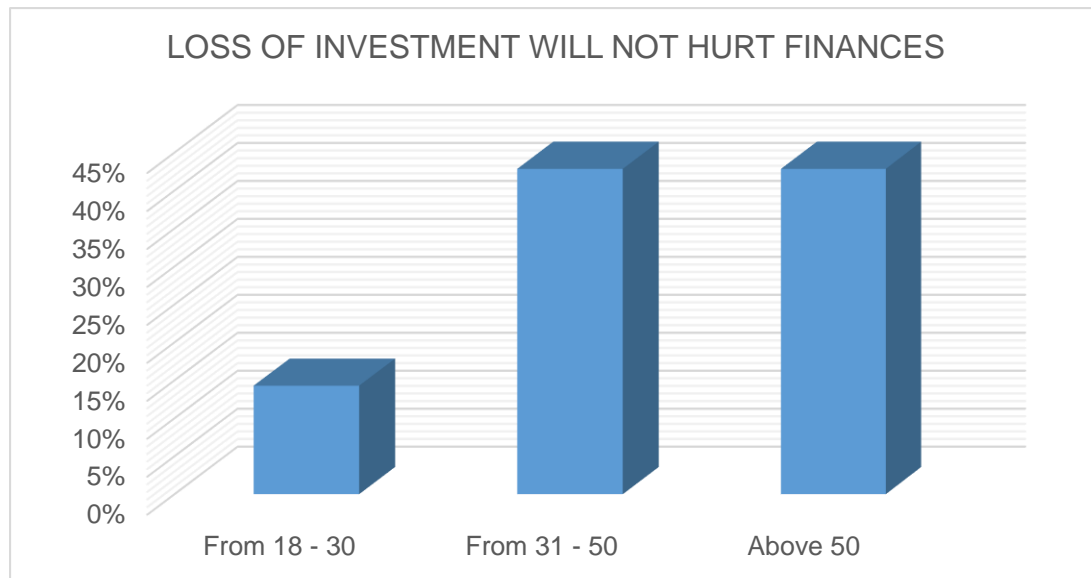
Figure 4 Age and the Effect of Total Loss on Financial Standing

Source: Field data

Among the investors who relayed that the total loss of their investments will not affect their finances, very few (14 percent) were within 18 and 30 years. Investors within the age ranges 31-50 and those above 50 years formed 43 percent each of the total. The contingency below investigates the relationship if any, between age and the level of responsiveness of investors.

Table 1

Contingency Table showing Age and Responsiveness to News

Respondent Age	Level of Responsiveness			
	High	Fair	Low	Total
From 18 - 30		3	1	4
From 31 - 50	2	2	1	5
Above 50	2	4		6
Grand Total	**4**	**9**	**2**	**15**

Source: Field data

From the table, it can be see that most investors, representing 60% of all respondents are fairly responsive to news on the GSE, 27% of respondents are highly responsive to news and generally very active on the market, whilst the fewest number, representing 13% of investors have low response to news. Looking at figure 4 presented earlier, it should be expected that investors within age ranges 31-50 and above 50 years should be the least responsive group of people to news since they form majority of investors who said they can painlessly afford to lose their investments (refer to Figure 4). In contrast to this relation, it was observed that the investors who show high responsiveness (reaction) to news are within the age ranges 31-50 and above 50 years.

The Fisher's Exact Test was conducted to test if the association between age and responsiveness is statistically significant. The test produced a p-value of 0.604, which is greater than 0.05. The results of the test indicates that the distribution frequencies observed, was random – that is, there is no relationship between age and responsiveness to news.

Number of Companies Invested and Reaction to News. Another relationship that this research explored was one between the number of companies invested in and the reaction to news. It is agreed that investing in more than one company minimizes risk. It is plausible therefore to expect that a person who has investments in many companies will not be as active as a person with investments in one company.

Table 2

Contingency Table showing Number of Investments and Responsiveness to News

Respondents	Level of Responsiveness			
Number of Companies	High	Fair	Low	Total
One to Two	2	4	2	8
Three to Four	1	3		4
Five or more	1	2		3
Total	**4**	**9**	**2**	**15**

Source: Field data

Even without a significance test, it cannot be said from the table that there is a relationship between the two variables. It can be seen that investors who react the least to information have investments in one two companies, in contrast with the expectation. The level of significance of the relationship identified was tested using Fisher's Exact Test of good fit. The test gave a p-value of 0.92 which is greater than 0.05, showing that the distribution or data observed is just random and thus there is no association between investors' reaction to news and the number of companies invested in.

Amount Invested and Reaction to News. As has previously been established some respondents identify that that the loss of their investment will not hurt their finances as shown in Figure 5.

EFFECT OF TOTAL LOSS ON GENERAL FINANCES
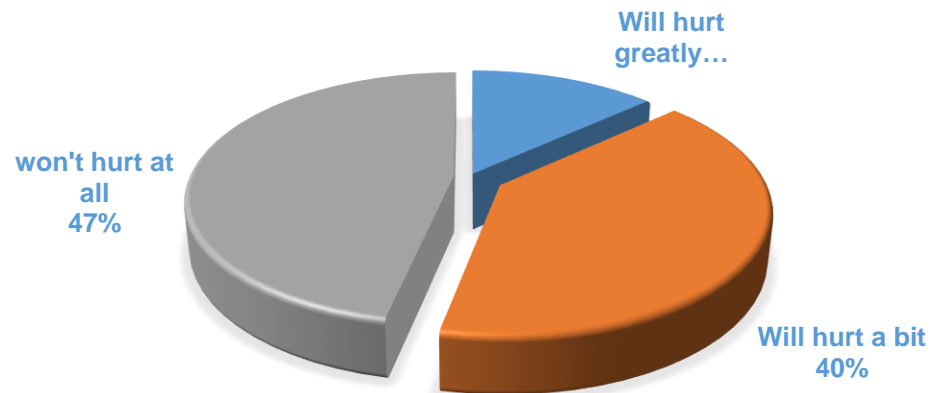
Figure 5 Proportion of Investors and Effect of Loss on Finances

Source: Field research

From the chart, only 13% of respondents will be affected in case they lose all their investments. It can be expected that the people with relatively small amounts invested in shares are the ones who care less about what happens on the GSE and the thus slowly react to news if at all. Similarly, people with relatively huge amounts of money invested should react swiftly to news and show high levels of activity on the exchange. It is this relationship that the contingency table below introduces.

Table 3

Contingency Table showing Amount Invested and Responsiveness to News

Respondent	Level of Responsiveness			
Amount Invested	High	Fair	Least	Total
Up to GH¢99.9			1	1
From GH¢501 to GH¢1,0	1	4		5
From GH¢1,001 to GH¢5	1	3	1	5
Greater than GH¢5,000	2	2		4
Total	**4**	**9**	**2**	**15**

Source: Field data

From the table, it is clear that the investor who has less than GH¢ 100.00 invested has no motivation to actively respond to news. Investors who have more than GH¢5,000 invested respond more actively to news compared to the others. Comparing this table to Fig 4.5 above, it is interesting to find that although most investors claimed that the loss of their investments will not hurt their finances, they nevertheless pay attention to their investments and react satisfactorily to information available.

Again the contingency table was analysed in order to test statistical significance. Since the table is 4x3, it was difficult to perform the Fisher's Exact Test on this expected relationship. A Chi-square test was used, though not the best for small data like these. The chi-square test provided a chi-square test of 9.25 and a p-value of 0.1599. The test indicates once again that the data observed occurred randomly and that there is not relationship between the amount invested in listed stock and how investors react to news.

Why Investors React the Way They Do to News

Looking at findings presented under how investors react to news, it is established that Ghanaian investors are largely fairly responsive to news. It has also been shown that their reaction to news random, with no significant relationships with factors like age and the amount invested. The reasons why investors react the way they do to news are summed up below.

Reliance on the role of Brokers and Interactions among investors

From interviews with some brokerage houses, it was gathered that most brokers provide investment advice to their clients concerning the performance of their stock. Others go ahead to suggest to their clients, precisely what could be profitable to do at a particular

point in time. With this added service some investors depend entirely on their brokers for what to do, where to invest and so on. Of course, a broker would advise a client based on the current trend in performance and their expectation of the future. Advice from the different brokers concerning a particular stock may not be completely different since they are based on what they see on the market and what they project to be the case. It is therefore uncommon to see investors behaving in a completely different manner. Some investors tend to discuss various stock as well as the advice from their brokers with friends who are also investors, thus causing an overly similar behaviour on the GSE. It is thus possible to find an investor who may not have the advisory service of his broker and is trading based on the advice of some other brokerage company.

As Hong et al. (2004) discussed, there is an externality that is created when investors see their friends withdraw from a particular investment or when he/she knows that a friend who owns shares in the same company plans to sell out. This does not imply that individuals do not know how to trade or what to trade. However, the externality caused through their social interactions and discussion of stock will lead them to act in similar ways.

Single-sided Market Orders

Some investors are *immune* to unexpected information because of the issue of single-sided market orders. What this means is that whenever people want to buy stock, there is none to be sold and when they want to sell stock there is no one to buy. Sometimes, all investors seem to be buying particular stock or selling particular stock. Parties are thus unavailable to complete a trade or transaction. Investor's reaction to a particular news would therefore end when he or she places a buy or sell order with his brokers. A market

order may take days, sometimes weeks to go through and until then, the investor is unavailable to withdraw from the company. Knowing the frustrations that usually accompany market orders, some investors do not bother about news, whether positive or negative. As mentioned earlier, it is for this reason that even though investors react fairly quickly to information about the stock of listed companies, their reactions are not noticed and price fluctuations are faint.

The issue of one-sided trade mentioned above may explain why the stock market may look at if investors responds wrongly to information or does not respond at all. It could also explain the findings of inefficiency of some of the earlier researches done on the GSE.

CHAPTER 5: CONCLUSION AND RECOMMENDATION

Conclusion

Following data gathered from this research, it can be seen that investors' reaction to news on the GSE is fairly rapid, but of course, hindered by certain factors. Answers obtained in answering the questions this research set out to investigate are shown below.

Reasons for Investing in firms on the GSE

Two main reasons were found to motivate individuals' investment in stock: the financial reward or return, and the feeling of self-actualization that is attached to investing, in full or partial fulfillment of people's goals. These two motivating factors were deduced from four reasons obtained from responses of individual investors. They were: the promise of high future prospects, advice from friends, the fame or popularity of the companies at the time of investment, and the desire to be part owners in the stake of certain companies. It was established that those who invested based on advice from friends essentially invested for the return, since the recommendation given by family and (or) friends are based on the performance of the stock, either observed or expected or both. As established by some literature, people who invest in popular companies do so largely because they expect that those popular companies will do well in future and reward their investments (Anderson & Smith, 2006). Some few other respondents among the group of investors who desire to have good investments and those who invest in popular firms are highly interested in the self-actualization or the satisfaction of having a *good* investment. Majority of investors on the GSE, forming about 87% invest for the financial return.

How investors react to unexpected news about listed firms

The reaction process usually begins with investors contacting their brokers within moments of receiving news, especially about their listed firms, to find out how it might impact their investment. It ends with a sell or buy order from the investor to the broker. Investors react more swiftly to negative information than to positive information. Most of the respondents shared that positive news about any listed firm, whether it is a firm they are investing in or not, would not influence their actions or decisions in any way. Two types of news that would spur respondents to withdraw their investment from any company are news concerning the companies' indulgence in any form of fraudulent act and, news that report 'financial trouble' of the companies. Investors' reaction to news on the GSE is however not noticeable as they do result faintly in price movements.

It was also found that investors usually behave in similar ways. Many of them buying or selling a particular stock even without any financial basis. Some investors sell their stock just because they find out that other investors are selling. According to Hong et al., this does not imply that those investors do not know what to invest in or how to invest but rather, such attitude stems from the comfort of social interaction and the familiarity of discussing investments with friends (Hong et al., 2004).

The study further explored if there exist relationships between investors' reaction to news and variables like age, amount invested and the number of companies invested in. Significant tests done indicated that age, amount invested or the number of companies invested in have no relationship with investors' response to news.

Why Ghanaian Investors React to News the Way They Do

As has been established, investors have similar trading behaviours because some of them overly rely on their brokers for investment decisions, whether to buy a particular stock or not, when to sell and so on. As more investors rely strictly on their brokers' advice, it leads to similar actions or trade behaviour, since brokers' advice to investors are based on the market performance and may not be significantly different. Another reason for similar trading behaviour is that, some investors discuss their stock with friends and agree to act in a certain manner. Generally, many investors react slowly to information and some few others are unresponsive. One reason that stood out in this research has to do with the issue of one-sided market orders – which leads to a situation whereby market orders take days, otherwise weeks to go through. There is thus no room to absorb whatever decisions investors make in their response to news being it buying or selling.

Extrapolating the reason for one-sided market orders, it can be said that the unavailability of market makers is a major reason why many of the observed investor behaviours are seen.

Recommendations

The situation of one-sided market orders may be common in some other stock markets, but the presence of market makers enable investors in such stock markets to enjoy smooth trade compared to the GSE where market makers are rare. Market makers are individuals or brokerage houses that are always ready to buy and sell securities to enhance the liquidity of stock markets. They take highly risky positions by hold very high volumes of a given security so that they will be able to sell at competitive prices. Some observers and researchers may conclude that the provision of individual trading

platforms, which allow investors to buy and sell stock directly, without going through the broker will be helpful. Undoubtedly, it may be helpful, but it does not guarantee a solution. It is therefore recommended that individual entrepreneurs, brokerage houses and investment banking firms in Ghana take advantage of this business opportunity. Apart from making profit it would also allow market orders to go through thus liquidity on the GSE.

The Securities and Exchange Commission and the GSE should work on encouraging companies to list on both the main market and the Alternative Market. Encouraging listing can be in the form of relaxed listing rules or tax advantage to companies which will enlist on the stock market. This will lead to increased number of actively trading firms on the stock market. These two suggestions, when implemented will lead to a vibrant stock market, reduce the issue of illiquidity and encourage companies to list on the Ghana Stock Exchange.

Path for Further Research

In relation to the conclusion drawn, further research may focus on assessing the profitability and feasibility of market makers on the Ghanaian stock market. Other research can also be done in order to assess the attractiveness of the role of market makers to the various brokerage firms in Ghana.

Finally, considering the scope of this research, further study can be done to investigate the reaction of institutional investors to news on the Ghana Stock Exchange.

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APPENDICES

Appendix A

Human Subject Consent Form

Title of Project: Investor Reaction to New Information About Listed Firms on the Ghana Stock Exchange

Researcher: Leticia Otubea Opoku   **School:** Ashesi University College

1. You are invited to be part of a research for my Thesis. The purpose of this study is to understand how investors (people who own shares of listed companies) react to new information on the Ghana Stock Exchange.

2. Your participation will be to share with me how news about listed firms affect your decisions.

3. You are free to be part of this activity, and you are free to stop at any time during the activity.

4. There are no known risks involved in being part of this research.

5. The benefit is that you get to be part of a research that will help to identify issues with information transfer on the Ghana Stock Exchange so solutions can be introduced.

6. If you have any questions, you can ask Leticia Otubea Opoku on 020 449 7155.

7. If you agree to be part of this research, be assured that your inputs will be treated confidentially.

8. For further information, do contact my supervisor, Anthony Essel-Anderson on 024 280 6155.

9. This study and consent form has been reviewed by Ashesi's Team for Human Subjects Research. For more information, contact the committee at
10. irb@ashesi.edu.gh.

…………………………………………….   ………………   ……………..

(Name of Applicant)   (Date)   (Signature)

Appendix B

Questionnaire completed by Individual Investors Online

This questionnaire is designed to help gather information necessary to understand how Ghanaian investors react to new information about firms listed on the Ghana Stock Exchange.

Please be assured that your responses will be treated confidentially.

Part A: Understanding the Investor

1. Are you Ghanaian?

    A. Yes   B. No

2. Please choose the range within which your age falls

    A. From18 - 30 years
    B. From 31- 50 years
    C. Above 50 years

3. Are you actively employed? Please circle the answer.

    A. Yes   B. No

4. In which region do you live currently?

Volta Region	Greater Accra Region
Ashanti Region	Eastern Region
Central Region	Brong-Ahafo Region
Western Region	Northern Region
Upper East Region	Upper West Region

Part B: About the Investment

5. How many companies do you own shares in? Please state ………………………

6. Within which period did you buy the shares?

    A. 2015 and after
    B. From 2010 - 2014
    C. From 2007 - 2009
    D. From 2003 - 2006
    E. Before 2003

7. About how much have you invested in total in shares of the listed company(ies)?

A. Up to 99.9
B. From GH¢100 to GH¢500
C. From GH¢501 to GH¢1,000
D. From GH¢1,001 to GH¢5,000
E. Greater than GH¢5,000

8. Why did you buy the shares of the company(ies) when they were floated?

A. Because I wanted to be a shareholder of the company
B. Because I believe that the company(ies) will do well in future
C. Because the company(ies) is(are) popular
D. My friends and (or) family encouraged me to
E. Other, (please state) …………………………………………………………

9. Do you study the financial statements of the company you have invested in?

   A. Yes   B. No

10. If you answered "No" to the above question, please explain why.

A. I don't get access to their financial statements
B. I don't think it is important
C. I don't have time to do that
D. I don't really care
E. Other, (please state)…………………………………………………………………...

11. How do you know if a company you own shares in is doing well or not?

A. I look at how many times their adverts are shown on TV
B. I consider their share price movements
C. I ask people about it
D. I look at their office buildings
E. I study their financial statements
F. Other, (please state)…………………………………………………………………

12. Would you pay a third party to monitor your stock and give you updates its performance from time to time?

   A. Yes   B. No

13. What sort of news or happenings will cause you to withdraw your investment from the company(ies) you own shares in?

A. The death of any of the heads of the company
B. If the company(ies) is(are) found to be involved in fraud
C. If the company(ies) is(are) sued for whatever reason
D. No news will affect my decision
E. Other, (please state)…………………………………………………………………

14. If the listed firm you invest in collapses today, how much of your investment do you think you will be able to recover?

    A. Everything (100% of my investment)
    B. 60% - 99%
    C. 30% - 59%
    D. 1% - 29%
    E. Nothing (0% of my investment)

15. Considering my financial standing, I can say that

    A. The loss of my investment will <u>not</u> hurt my finances at all
    B. The loss of my investment will hurt my finances a little bit
    C. The loss of my investment will my finances greatly

16. As a shareholder or investor in a firm that is listed on the Ghana stock Exchange, which information source(s) do you consider reliable? Select those that apply.

    A. Business news on TV
    B. Local news on radio
    C. Online news
    D. Information directly from the companies
    E. Information from the Ghana Stock Exchange
    F. Other, (please state)…………………………………………………………………...

Part C: Investor Activities and Interaction with Investment

17. How do you get information about firms listed on the Ghana Stock Exchange?

    A. From the news
    B. From friends
    C. From colleagues
    D. From my investment bankers/brokers
    E. From the Ghana Stock Exchange
    F. Other, (please state)…………………………………………………………………

18. How often do you visit the Ghana Stock Exchange website?

    A. More than once a week
    B. Once a month
    C. 6 – 11 times a year
    D. Never
    E. Other, (please state) …………………………………….......................................

19. If there is positive news about the company you own shares in, what would you do?

    A. I can't do anything
    B. I will buy more shares
    C. I will do nothing
    D. I will really don't know
    E. Other, please
       state……………………………………………………………………………….

20. Consider your answer in the previous question. Consider your answer to the question above. If you could do something different, what would it be?

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……………………………………………………………………………………………………
……………………………………………………………………………………………………

21. With the company(ies) you have invested in, if you decide that you no longer want to be a shareholder, what would you do?

    A. I don't know what I would do
    B. I would just forget about the investment and move on with life
    C. I would sell my stake
    D. I have not thought about it yet
    E. Other, please state
        ……………………………………………………………………

22. If there is news that a company you have **not** invested in is going to be the wealthiest in Africa in the next two months, what would you do?

    A. There is nothing that can be done
    B. I would not bother about it
    C. I would acquire shares in that company
    D. I don't know what I would do
    E. Other, (please state)
        ……………………………………………………………………

23. Have you ever tried to sell off your investment (shares) or tried to buy new ones?

    A. Yes, and I succeeded
    B. Yes, but I did not succeed
    C. I have never tried to
    D. No. It is too complicated
    E. No. I did not even know you could do that
    F. Other, please state ……………………………………………………………………

24. What do you think about investing in firms on the GSE? You can include your likes and dislikes about it.

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……………………………………………………………………………………………………
……………………………………………………………………………………………………

24. Additional information or comment?

……………………………………………………………………………………………………
……………………………………………………………………………………………………
……………………………………………………………………………………………………

Appendix C

Fisher's Exact Test Summary on Age and Level of Reaction

Data Entry

	C_1	C_2	C_3	Totals
R_1	0	3	1	4
R_2	2	2	1	5
R_3	2	4	0	6
Totals	4	9	2	15

Clear   Calculate

Fisher Exact Probability Test

P_A = 0.6035964035964027

P_B = 0.4837162837162827

No. of tables evaluated = 84

The Fisher test is performed only if N≤90.

Note that P_A and P_B are both non-directional (two-tailed).

Chi-Square Test (df=4)

Chi-square =

P = test not performed

The chi-square test is performed only if at least 80% of the cells have an expected frequency of 5 or greater, and no cell has an expected frequency smaller than 1.0.

Source: http://vassarstats.net/fisher3x3.html

Appendix D

Fisher's Exact Test Summary on Number of companies invested in and Level of
Reaction

Data Entry

	C_1	C_2	C_3	Totals
R_1	2	4	2	8
R_2	1	3	0	4
R_3	1	2	0	3
Totals	4	9	2	15

Clear   Calculate

Fisher Exact Probability Test

P_A = 0.9194405594405574

P_B = 0.9194405594405574

No. of tables evaluated = 70

The Fisher test is performed only if N≤90.

Note that P_A and P_B are both non-directional (two-tailed).

Chi-Square Test (df=4)

Chi-square =

P = test not performed

The chi-square test is performed only if at least 80% of the cells have an expected frequency of 5 or greater, and no cell has an expected frequency smaller than 1.0.

Source: http://vassarstats.net/fisher3x3.html

Appendix E

Fisher's Exact Test Summary on Amount invested and Level of Reaction

| Home | Which Statistics Test? - A Wizard | Statistical Calculators | Descriptive Statistics | P Value Calculators | Donate |

Chi-Square Calculator

Success! The contingency table below provides the following information: the observed cell totals, (the expected cell totals) and [the chi-square statistic for each cell].

The chi-square statistic, *p*-value and statement of significance appear beneath the table. Blue means you're dealing with dependent variables; red, independent.

Results						
	High	Fair	Least			Row Totals
Up to GH¢99.9	0 (0.27) [0.27]	0 (0.60) [0.60]	1 (0.13) [5.63]			1
From GH¢501 to GH¢1,000	1 (1.33) [0.08]	4 (3.00) [0.33]	0 (0.67) [0.67]			5
From GH¢1,001 to GH¢5,000	1 (1.33) [0.08]	3 (3.00) [0.00]	1 (0.67) [0.17]			5
Greater than GH¢5,000	2 (1.07) [0.82]	2 (2.40) [0.07]	0 (0.53) [0.53]			4
Column Totals	4	9	2			15 (Grand Total)

The chi-square statistic is 9.25. The *p*-value is .159999. The result is *not* significant at $p < .05$.

Source: http://www.socscistatistics.com/tests/chisquare2/Default2.aspx