EFFECT OF BEHAVIORAL BIASES ON TRADE EARNINGS OF TRADERS IN KONGOWEA MARKET, MOMBASA COUNTY, KENYA

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DECLARATION

I declare that the content of this research paper is my original work and has never been

previously submitted for the award of a degree in any other University or Institution.

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Declaration from the Supervisor

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DEDICATION

I dedicate this work to my beloved family and friends who accorded me the necessary support and prayers while working on the paper. To the almighty God I say a big thank you for the blessings, grace and courage to accomplish the study.

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ABBREVIATIONS AND ACRONYMS

EBT: Earnings Before Taxes

CGM: County Government of Mombasa

NSE: Nairobi Securities Exchanges

PT: Prospect Theory

RT: Regret Theory

SPSS: Statistical Packages for Social Sciences

ABSTRACT

The aim of the research study was to establish the effect of behavioural biases on trade earnings of traders in Kongowea Market. The research was anchored on the prospect theory, regret theory and heuristics theory. The study used a descriptive research design in the form of a survey to examine behavioural biases affecting trade earnings of traders in Kongowea market, Mombasa County. From a population of 1396 licensed traders, the study used a sample of 140. The study targeted a sample of 140 licensed traders at the Kongowea Market in Mombasa County. However, the responses were obtained from 77 traders this represents a 55% rate of response and was regarded adequate for the study. On Gender, the male respondents were 55% and the female 45%. Majority of the traders were above 40 years of age. On experience in trading, the majority had traded for between 7 to10 years. Most traders also were the ones dealing with vending of second hand clothes. All the biases were found to be present in the trading activities at Kongowea market. The study concluded that behavioural biases affected trade earnings of traders at Kongowea Market. Trade earnings were moderately and negatively correlated to all the behavioural biases. The effect of behavioural biases on trade earnings was however 19.2% of the total variation. This means that 80.8% of the variation of trade earnings was not captured in this study. The study recommended that the ministries of trade and industry in both the national and county governments to come up with different training programs to minimize these biases. The study also recommends that traders should be informed on the existence of the psychological biases in trading decisions and that it should be provided for in the decision-making process.

CHAPTER ONE: INTRODUCTION

1.1Background of the Study

Trade is described as the exchange of products and services, with consideration paid by a purchaser to a vendor, or the exchange of products or services among the two participants. Trading is therefore an undertaking via which traders devote their funds in buying and selling goods for a specific period with the objective of gaining returns either equal or high to compensate the trader for that time the funds were invested, putting into considerations uncertainties involved (Reilly & Brown, 2006). Trade earnings are the profits realized over a specified period of time after all expenses have been settled. Trade earnings are critical indicators of the strength of a business and it potential for growth. Most traders use earnings estimates to set target prices for their goods and services. For traders to maximize their earnings, they need to always have current information about their businesses especially in an extremely competitive business environment (Waweru, Munyoki & Uliana, 2008). Traders however usually harms their earning by allowing behavioural biases to affect their decision making on which goods or services to trade in. As a result of psychological biases built in our brains and bodies, trades make suboptimal choices which in effect harms their earnings (Aruna & Rajashekar, 2016).

The study will be built on; Prospect theory, regret theory and Heuristics theory. Kahneman Tversky (1974, 1979), developed the prospect theory which explains how people make choices putting into consideration the possible gains and losses as opposed to the ultimate outcome. In developing the theory, they deduced that traders are not always rational. The heuristics theory was advanced by Kahneman & Tversky (1974), it explains how people use simple, efficient rule to form judgement and make decisions.

According to the theory, people have the habit of making quick judgements, tend to simplify approaches to complicated issues and restrict descriptive information. The regret theory (RT) was developed by Loomes and Sugden (1982) it describes the difference between the actual outcome and the expected outcome under normal conditions. These theories explain the behavioural aspect that an individual undergoes in the process of making trading and/or investment choices which in turn affect their earnings, hence considered appropriate for the study.

Kongowea Market is one of the largest open-air market in Kenya. According to https://www.standardmedia.co.ke (2009) article titled tolling thebellforslavetraders, Kongowea Market dates back to 1880s where trade slave used to occur at the Kengeleni. The Arab traders are believed to be the founders of the market as they gathered commodities including slaves for shipment abroad. With the end of slave trade the freed slaves and local communities took over and the market has since quite advanced with the development of a modern retail center in the year 2016. Trading behaviour at the Kongowea market seem to be influenced by behavioral biases contrary to rationality as would be expected from the traders which in turn affect their earning. Traders seem not to choose their line of trade based on keen study of the market as advocated by traditional finance theories which eventually affect their bottom line earnings.

1.1.1 Behavioural Biases

Pompian (2012), refer to behavioural biases as the decision-making unit's behaviours leading to illogical trading choices resulting from subjected interpretation or allowing emotional attributes to guide reasoning. Behavioural biases are the human cognitive psychological factors that arise when traders make trading decision based on belief and

preference instead of utilising market fundamentals. According to Schinckus (2011) behavioural finance dictates the manner in which psychology influence finance and absolutely the manner in which individuals' behaviour affects prices of goods and earnings. Ojwang (2015) in his study on factors affecting investment choices at Kibuye Market, Kisumu County which is an open-air market found that trading choices of traders at the market were mainly affected by, Representativeness, Herd behaviour, overconfidence and loss aversion biases. The study will therefore concentrate on the influence of the four biases on trade earnings of traders at Kongowea Market.

Representativeness bias is where individuals grade current data which respect on previous classifications or understanding (Pompian, 2012). They consider their classifications as the most ideal and place great emphasize on them. Research has proven that this bias arises since individuals seek to capture lessons from their experiences and often classify thoughts and objects into personalized clusters. Therefore, even under different circumstances they tend to apply the information they are used to as the solution. According to Agrawal (2012) when individuals are affected by representativeness bias, they tend to categorize events towards or to favour the representative of the most dominant group. Such a tendency leads to development of probability estimates that overemphasize on the role of categorization and neglect the evidence regarding the inherent probabilities.

Loss aversion bias arises when individuals are more motivated to avert losses than attaining gains (Pompian, 2012). Loss aversion makes people conservative about making new moves even if the business stands a zero probability of failure. Therefore, investors may hold unprofitable investments for an unjustified period of time. This

conforms to the findings by Razek (2011) that in accordance to prospect theory people's behaviours are often irrational. This loss avoidance tendency drives individuals to cling on their losers regardless of the possibility that an investment has practically no prospect of reversing the trend. Investors in turn hold loss making investments for long than justified by fundamental analysis.

Herding behaviour in the market is commonly referred to as following the crowd. Individuals inherently wish to be part to a group hence would invest their funds where others are investing (Chandra, 2008). This in most cases lead to prices of goods varying from the underlying value of goods hence affecting the possibility of making viable investment. Traders in most cases collates their own assessment of trading choices with those of their peers which mostly affect their own assessment and copy the assessment of peer who they perceive to be more knowledgeable.

Overconfidence is the overestimation of the expected outcomes for a specific set of variables Razek (2011). The realism of this concept is ascertained by measuring the actual outcomes of an assessment or event against the specific or attained outcomes. According to Agrawal (2012), overconfidence makes individuals to undervalue risks, overestimate their ability and knowledge to manage occurrences. The scholar holds that overconfidence emanates in biased assessment of evidence by the people. Different authors have established the existence of overconfidence bias in the making of distinct financial decisions. Sewell (2005) warns that overconfidence is especially appealing where individuals exhibit unique experience or information regardless of how insignificant the factors that convince them to think that they exhibit a trading capacity.

In the actual sense most of the educated traders who have adequate knowledge do not always outsmart the market.

1.1.2 Trade Earnings

Trade earnings ordinarily connote to net returns, also referred to as the take home, or trading profits. Trade earnings are important as they determine whether a business is commercially viable over time. Profits are also used by traders to compare their business progress with respect to performance of traders in the same or similar trade undertakings. Traders usually analyse their trade earnings either daily, after every month, quarterly or at the end of a financial year. Earnings results that are in contrast from normal expectation can hugely effect on the cost of goods and services. Commodity prices in an open-air market are not regulated by any authority hence ultimately are the resultant earnings. The basket of goods a trader engages in and the prevailing market prices are a good measure for reflecting the demand for the goods and serve as a good predictor of the expected earnings (Suman & Warne, 2012). It is therefore evident that the level of earnings is mainly influence by the supply and demand of a give basket of commodities a trader engages in.

By subtracting all expenses incurred in the exchange of a basket of goods and services from the revenue realised a trade is able to determines his/her trade returns. There are however, diverse measures and usefulness of trade earnings. Some business owners prefer computing earnings before taxes (EBT) also known to as pre-tax profits as the measure of their earnings and business performance. Other businesses prefer to use earnings before deducting interest and taxes (EBIT), while manufacturing industries with huge tangible assets base like to view earnings before deducting interest, taxes,

depreciation including amortization (EBITDA) as a measure of business earnings. Both these measures give varied dimension of measuring earnings of a business.

1.1.3 Behavioural Biases and Trade Earnings

There are numerous divergences to the precepts of objectivity in decision-making as held by traditional finance theories. Olsen (1998) noticed that traders have been indicated not to respond coherently to new data but rather to be presumptuous to modify their decisions when presented with minor amendments in the introduction of new market information which eventual harm their earnings. Behavioural variables cause inordinate hopefulness, pomposity and crowd sense in trading prompting orderly mistakes in judgment.

Luong' and Ha (2011) in their investigation discovered five in number behavioural variables that affected the trade earnings of financial specialists at a stock trade in China. These were: grouping, advertise prospect, pomposity and securing inclination. Additionally, certain trading choices are made without due contemplations to the accessible information which in turn affects the earnings. Hence, the greater part of the choices that buyers make day by day is made without cognizant inclusion, which suggests the significance of verifiable customer choices as a fundamental piece of the general decision-making process which inherently affect the expected earnings. Various experimental examinations demonstrate that behavioural components can swell carelessness prompting over the top exchanging and hallucination of control. Razek (2011) holds that individuals do not generally act objectively. Financial specialists do not normally assess showcase factors hence tend to construct their choices

with respect to some reference point and firmly accessible choices which eventually harm expected earnings.

1.1.4 Traders at Kongowea Market

Kongowea market is one of the largest open-air market in Kenya and is based in Mombasa County. The market is located around two kilometres from Mombasa Island, along Mombasa-Malindi Highway. It is encompassed by Malindi road, links road and Beach road. Kongowea market is composed of shops, stalls and open-air traders trading with close competition depending on the location within the market. The market server as the focal point for products from upcountry and neighbouring countries within the East African Region. This is according to sustainable poverty alleviation from coastal Ecosystem Services (SPACES) organisation website.

According to CGM, Ministry of trade and investment registry data (2018), there are 1,396individual non-professional traders issued with annual trade licence as of June 2018, doing business at Kongowea market daily with the main objective of making profits. The substantial number of traders offering practically comparable products makes the market exceptionally competitive. The market offers a lot of highly liquid products that encourage risk-taking among traders.

1.2 Research Problem

Traditional financial theory assume that traders are prudent in maximising wealth, following common financial guidelines and basic trading approaches exclusively on the trade-off between risks and returns as the components considered to affect their trading choices and ultimately their earnings (Baker, Hargrove & Haslem, 1977). However, to

the contrary many documented literatures on behavioural finance, show that individuals are irrational and make mistakes in their thought process and decision making; they are over-confident and place much importance on most current experiences. Subrahmanyam, (2007) states that the behavioural finance discipline tries to study the psychological and sociological aspects that affect personal and organisations investment decisions making process which further affects the expected earnings from such investments and trading choices.

There has been unexpected rise and fall of commodities prices at Kongowea Market as trader's rush to clear their goods and make better earnings hence profits. These price instabilities are attributed to existence of middlemen and unethical traders in the market which affect the operations of free open-air market. Another observation is the trend of past and present traders applying for annual trade licences in Kongowea market. Records at CGM, Ministry of trade and investment registry (2018) show that there were 796 traders who were issued with annual trade license in fiscal year 2015. In 2016, there was an increase in the number of traders to 945, followed by a declined in the year 2017 to 822 as some traders closed down and did not renew their annual trade licenses. In 2018, there has been influx of traders to 1,396. The cause of this trend remains unclear but could largely be attributed to behavioural biases which affects the earnings and trading trends.

Kimani (2011) did a study on behavioural aspect affecting personal investor's selection of securities at Nairobi Securities Exchanges and showed that there were five behavioural factors (herding, market, prospect, anchoring, and over-confidence) that were at play shaping investors' choices. Waweru et al. (2008) studied how behavioural

finance and the psychology of investor affect how they make choices with regard to placing investments at NSE with particular focus to corporate investors. A sample of twenty-three (23) corporate investors was used and the findings reveal that representativeness, overconfidence, mental accounting, anchoring, availability bias, gambler's fallacy, loss aversion and regret aversion biases did influence corporate investors' decisions at NSE. Luong' and Ha (2011) did an overview on behavioural elements affecting individual financial specialists' Decision-Making in a china stock trade. Ojwang (2015) conducted a study on behavioural aspects and investment choices of trading choices of individual traders at Kibuye market located in Kisumu town which showed that trading choices of individual traders at the market is significantly influenced by over-confidence, anchoring, loss-aversion, mental accounting, representativeness, risk-aversion and herd behaviour biases. These studies have overly concentrated on the securities markets as the investment environment with only one known study of individual investors in an open-air market.

From the studies above, it is evident that behavioural bias affects the investment and trading choices of investors and traders and ultimately expected earnings from the investment and trading choices. However, to the knowledge of the researcher, there are no much studies done to determine the influence of behavioural biases on trade earnings by traders in open-air market in Kenya as much of the studies done concentrated investment decision by investors in the Nairobi Stock Exchange. It is against this preview that the research seeks to address the void by establishing the effect of behavioural aspect on trading earnings of traders at Kongowea Market. The research sought to respond to the study question of what is the effect of behavioural biases on trading earnings by traders in Kongowea market?

1.3 Research Objective

To ascertain the effect of behavioural biases on trade earnings of traders in Kongowea Market.

1.4 Value of the Study

The research findings will assist in policy formulations, enhance investment practices and towards theory advancement. The findings will be shared with the County Government of Mombasa to assist in awareness creation for the potential investing population in the County. This will enhance growth and development in the County and increase the multiplier effects. It will contribute towards policy formulation on awareness creation and investor education by the County Government of Mombasa.

The findings will also be shared with the investing population at the market to empower them on decision making skills in order to eliminate biases that may drive them trading ventures that negatively affect their earnings. The study findings will assist in awareness creation to the specific investors on behavioural biases affecting their trading choices and consequently earnings.

Lastly, the findings will contribute towards empirical documentation on the existence of behavioral factors influencing trade earnings in an open-air market that either confirms or contest proposed theories that explain behavioural finance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section begins with a review of the relevant theories and determinants factors of trade earnings which include psychological, economic and demographic factors. An empirical review on how trader earnings are influenced by behavioural biases are then discussed at length leading to conceptual framework development that will link the dependent to the independent study variables.

2.2 Theoretical Review

Three main theories which include Herding theory, Prospect theory and Regret theory were used to direct this study.

2.2.1 Prospect Theory

Kahneman and Tversky (1979) founded the Prospect theory. The theory state that people make choices by taking into consideration the possible worth of gains and losses as opposed to the ultimate outcome. People tend to select choices expressed in likely gains than those expressed as possible losses given two equal choices. Loss aversion is the other name of this theory. Ritter (2003) argues that the prospect theory is descriptive in and based on the uncertainty that centres on change in wealth. It is a deviation from the theory of expected utility that centres on wealth levels. The prospect theory is a behavioural economic theory that expounds on decisions made among various competing alternatives which entail risk.

Cognitive psychological techniques were used by the prospect theory to show the various documented evidences distinctions between the neo-classical theory and

economic decision making. Kahneman and Tversky opined that individuals are often not afraid to take risks that could result to losses. The utility function is concave in nature implying that gain makes individuals feel good but gaining twice does not give a double feeling of the gain. The utility function is also described as convex for loss implying that individuals feel pain upon losing but double pain does not occur when the loss occurs. As stated by Kahneman and Tversky (1979) the prospect theory implies that the manner in which the economic agents exclusively frame a transaction or outcome in their brains influences their level of fulfilment resulting from the returns.

2.2.2 Regret Theory

The regret theory was advanced by Loomes and Sugden (1982) to aid decision making under uncertain circumstances. The theory describes the minimax regret approach applied in decision theory to mitigate any probable losses that could arise in the course of maximization of the expected gain. In respect with minimization of the respect vector, the Regret Theory model is described as the difference arising from expected and actual outcomes under normal conditions. Regret are the emotions that are the emotions that arise due to comparison of state of events or given outcomes with the actual state of the choice forgone (Bell, 1982). For example, when choosing a familiar brand and unfamiliar brand, a customer is unlikely to select the unfamiliar brand due to the regret consideration of establishing that the familiar brand outperforms the unfamiliar brand.

Regret is described as a strong emotional situation resulting from previous decisions with regard to a particular subject resulting to a not so good outcome compared to the alternative choice or someone else's choice (Sevil, Sen &Yalama, 2007). The investors averting the consequences of regret tend to place less personal responsibility while

making investment decisions (Sevil et al, 2007). In an attempt to avoid agony of regret, investors tend to reduce their individual obligations in making trading choices. This can further be explained as the process through which individuals gamble in losses in that traders 'cling to losing positions with the anticipation that prices will ultimately rise.

According to Statman and Shefrin (1985) correspondence with RT gives the investors an impression that their investment decisions will fail. It is nothing unusual to experience the regret of making errors without their integration into a bigger perspective. Kahneman (1979) argues that the nexus of the value function at the point of reference in some sense embodied the regrets for errors made. The fact that investors defer in the sale of depreciated stock and are fast in selling the appreciated stocks can largely explained by the Regret theory.

2.3.3 Theory of Heuristics

The theory of Heuristics was advanced by Kahneman and Tversky (1974). Heuristics can be described as the thumb rules that simplify the choice making particularly in difficult and unpredictable conditions by minimizing the difficulty of predicting values to elementary judgments (Tversky & Kahneman, 1974). Traders tend to make trading choices which results to either favourable or unfavourable outcome with respect to earnings. Under heuristics theory, six behavioural biases were identified which include; herd effects, belief perseverance, overconfidence, anchoring's, self-attribution and representativeness.

Herding can simply be defined as following the crowd. Shiller (2002) postulated that individuals inherently wish to be part to a group. It therefore follows that individuals

would always like to be amongst and associated with others which is a manifestation of herding behaviour. Traders in most cases fail to dedicate amply time to analyses available market information and focus on engaging in trading activities that are currently at the centre of attention by other traders. Scharfstein and Stein (1990) state that sometime traders are not sure of their information regarding the market hence opting to follow others resulting from the fear of acting in a different way. Herding becomes irrational when traders in the markets leave there trading activities to avoid losses when there is a huge potential in them just because other traders are doing the same ignoring all rational analysis and react in panic leading to market distortions.

Representativeness bias is where individuals grade current data based on prior classifications or understanding (Pompian, 2012). They consider their understanding as the most ideal and place great emphasize on them. According to Agrawal (2012) when individuals are affected by representativeness bias, they tend to categorize events towards or to favour the representative of the most dominant group. Overconfidence is the overestimation of the expected outcomes for a specific set of variables Razek (2011). The realism of this concept is ascertained by measuring the actual outcomes of an assessment or event against the specific or attained outcomes. According to Agrawal (2012) overconfidence makes individuals to underrate risks, become overconfident on what they can do and knowledge to manage occurrences.

The tendency of people relating their accomplishment to inborn facets like talents or carefulness, and most of the times attributing defeat on outside factors like misfortune is what is referred as self-attribution by Pompian (2012). Therefore, self-attribution traders tend to attribute failure to bad lack and that success in investments is largely

because of the skill the traders has and not due to conditions not within their control. These groups of traders often trust that they can make good predictions based on the past events. Anchoring is where individuals create reference centres (anchors) in their mind, for instance prior costs of goods. On getting current information, they inadequately alter their prior attribution to the current information obtained (Sewell, 2002). As explained by Raines and Leathers (2011) anchoring happens when traders consider existing costs to be relatively correct, giving a lot of weight to latest experiences.

2.3 Determinants of Trade Earnings

Various factors determine and/or influence the trading choices trades and hence earnings form the trading activities. According to Aruna and Rajasheka (2016), these factors are broadly classified as economic, psychological, social and demographic and organisational. The study discussed the effect of Psychological, economic and demographic factors on the trade earning.

2.3.1 Psychological Factors

Psychology can be defined as the study of behaviour and mind, putting in consideration all forms of experiences of mankind. It is science dealing with behaviour and mental actions. In behavioural finance, psychological factors result to behavioural biases which are mainly categorised in to emotional factors and heuristics. Prospect theory describes state of mind (emotional factors) influencing process of making choices of a person's which include mental accounting, loss and regret aversion and cognitive dissonance. The decision to trade in a certain basket of goods and the ultimate earnings expected will be shaped by the nature of market prospects. Kahneman and Tversky (1979) hold

that individuals form and attach value to choices during unpredictable time by viewing decisions as possible benefits or losses with regards to specific reference centres mainly the cost of buying; and that traders are cautious with risk with respect to gains and risk lovers for in regard to losses. Thus, emotional factors of loss and regret aversion will determine the choice on how, when and which basket of goods to trade in ultimately affecting the expected earnings.

Heuristics are described as rules of the game that simplify the process of making decision particularly in difficult and unpredictable conditions (Ritter, 2003) by minimizing the difficulty of predicting values to elementary judgments (Tversky & Kahneman, 1974). Five factors related to heuristics identified from the reviewed theories are: anchoring, availability bias, herding, over-confidence and representativeness. These factors do impact on the volumes of goods traded which ultimately affect the level of earnings.

2.3.2 Economic Factors

These are sets of critical information affecting trading worthiness. Several economic factors should be considered in computing the current and expected future value of a trade undertaking. Key economic factors affecting the earning of a given trading activity include; traders income levels, price of various goods, and taxes levied by the government with respect to the goods. Warne and Suman (2012) concluded that price fluctuations affected earnings and arrangement of individual investors investing activities as majority of the investors were alive to dealings in the stock trading. This as their study on individual investor investment behavior in a stock market. They also found out that annual income and savings levels affected investors trading choices which ultimately affected the level of earnings.

2.3.3 Demographic Factors

Demographic factors are attributes used to gather and analyze data on people from a target population. Common demographic aspects include age, gender, marital status, race, and financial literacy. Every demographic variables have varying influence on trading choices hence earning depending on the individual trader, the place where trading activity is being undertaken and the type of goods involved. Aren, Dinc & Aydemir (2015) in their study on factors affecting investment choices by individuals reported that most households were not acquainted with basic financial knowledge and making plausible investment choices suffered from this serious illiteracy which negatively affected the level of earning from their investments. Puneet and Medury (2013) conducted study on effect of differences in gender on employee in investment behavior and found that female employees are more cautious when undertaking investments and that they are risk takers which ultimately affect the level of earnings.

2.4 Empirical Review

Chandran (2008) examined behavioural factors and how they affect the attitude of the investors towards risk and the behaviour in the process of making decisions by investors at the Indian stock exchange. He used secondary data in the study. The study found that contrary to the traditional finance models retail investors hardly made rational investments. He concluded of that individual investors experience heuristics such as overconfidence, cognitive dissonance, anchoring and representativeness, mental accounting, greed and fear and loss and regret aversion within the prospect theory all effect perception of the investor towards risk and eventually h decision making. This eventually affect the expected earnings from the investment choices. The writer holds

that since cognitive errors arise from flawed reasoning, education, advice and better information can often correct them.

Chandra & Sharma (2010) did a study of behavioural biases affecting the behaviour of individual traders within Delhi and National Capital Region. A survey design was employed to realise the study objective. They noted that despite the skills, knowledge and expertise in managing their money to get the best from investments, the investment behaviour of individuals is steered by some psychological factors including under-confidence, conservatism, opportunism, informational inferiority complex and representativeness. They concluded that investment decision hence earning by traders are highly affected by behavioural biases contrary to the convectional theories of finance that presume traders are always rational.

Ojwang (2015) studied behavioural factors and their impact on trading decisions by traders in Kibuye market, Kisumu County. The study aimed at establishing behavioural factors that affect trading choices by traders in Kibuye market. To realise the objective of the research, a descriptive survey research design was employed. The research showed that trading choices by traders in Kibuye market are significantly influenced by; mental accounting, over-confidence, loss-aversion and anchoring bias. Ratemo (2016) studied the effect of individual behavioural biases on investment decision at the Nairobi Stock Exchange by investors in Kisumu county with the main objective of establishing how choices by individual investors are affected by psychological biases. The research used both descriptive and correlation study design. The findings of the study showed that investment choices were prominently affected by mental accounting and representativeness biases. The study concluded that behavioural biases were part

and parcel of how traders make decision hence some investment choices arrived may not be rational as would be expected when using traditional finance models

Mburu (2017) did his research on influence of cognitive biases on retail trading choices at the NSE. The research sought to establish the cognitive biases that influence retail trading choices. He employed a descriptive research design. From a sample of ninety-six (96) retail investor, the study found that retail investment decisions were significantly correlated to: herd effect bias, overconfidence bias, excessive optimism bias and accounting information bias. From the study, he concluded that cognitive bias significantly affected the trading choices of retail investors.

Ndiritu (2015) examined impact of behavioural biases and frame dependence on real estate prices in Nairobi county. The study seeked to ascertain the influence of specific singled out biases which included; emotional timelines, herd instinct, mental accounting, loss aversion, behavioural portfolio and shadow of the past effect on real estate prices in Nairobi county. He employed a descriptive statistic research design. The research established that real estate investment choices are significantly influenced by frame dependence and behavioural biases. Herd instinct and the shadow of the past had the most profound positive correlations with real estate prices.

2.5 Summary of the Literature Review

Behavioural finance examines the influence of psychology on trading behaviour and its long-term implication on earnings in the market (Sewell, 2005). It seeks to improve understanding and explain how trading decisions and hence earnings are influenced by both cognitive and emotional errors. The literature has reviewed these behavioural

biases that have potential impact on specific trading decisions hence earnings. It describes biases like control illusion, representativeness bias, cognitive discordance, hindsight, self-attribution and availability bias. Further, it examines loss and regret aversions, over-optimizing and overconfidence biases. According to Fogel (2006) evidence exist on how repeated irrationality, incompetence and inconsistency patterns in the manner in which choices are made by human beings when confronted with uncertainty which ultimately affect the level of earnings.

The literature suggests that cognitive biases emerge from impaired reasoning which could be streamlined through advice and education. No empirical evidence however exists to back these assertions but instead contradictory literature which opine that financially informed traders are not exempted from the societal tradition effect of trading evidenced by individual traders and other factors that equally affect thinking. Research has however revealed that both corporate and personal investors and/or traders are influenced by cognitive beside emotional while making investing and trading choices which ultimately affect the level of earnings. It is therefore clear that many studies done were in reference to financial markets. To the researcher's knowledge, no much studies have been done locally to ascertain the effect of behavioural factors on trade earnings by traders in open-air market like Kongowea. The present study therefore seeks to address the stated gaps.

2.5 Conceptual Framework

Trade earnings of the individual traders was the dependent study variable. The independent variables were over-confidence, herding effect, loss-aversion and representativeness biases.

Independent variables   **Dependent variable**
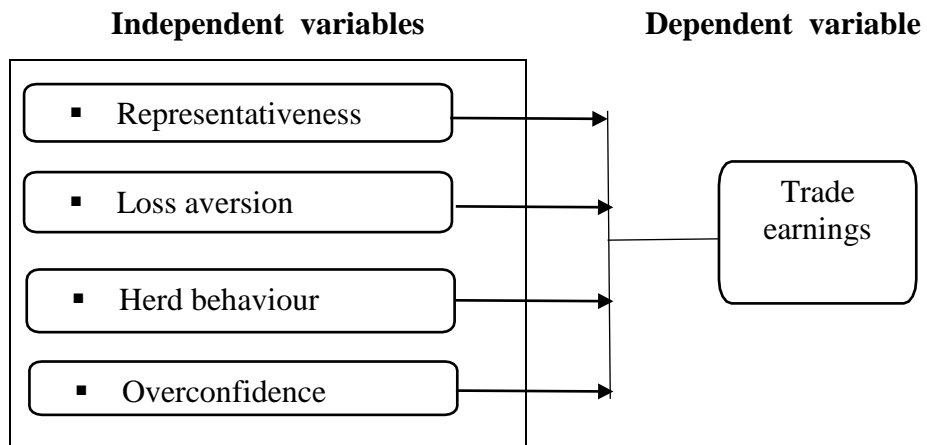
Figure 2. 1: The conceptual framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the approached that was adopted to attain the objectives of the research. The chapter presents the design of the research, population under study, the sample and the sampling design. It is followed by data gathering method and instrumentation and lastly analysis of the data.

3.2 Research Design

A descriptive research design in the form of a survey was used to examine behavioural biases influencing trade earnings of traders in Kongowea market, Mombasa County. A research design can be defined as a programme and framework used to analyse the subject matter under study and whose aim is to answer the research question (Cooper & Schindler, 2014). The what, where and how of a study can be achieved using a descriptive research design (Cooper & Schindler, 2014). The authors assert that the descriptive survey is the best research design for accurately describing a situation or an association between variables that minimizes biases and maximizes the reliability of evidence. A descriptive research seeks to explain such aspects as likely behaviour, values inclination and attributes. The method was considered fit for this research as it enabled a detailed scrutiny and depiction of the distinct factors reviewed.

3.3 Population of the Study

A population has been explained as individuals, groups, object or events that exhibit similar traits to generalize the study's results (Mugenda & Mugenda, 2003). For this study's purposes, the population was all the individual formal and informal traders in Kongowea market, Mombasa County. The accessible populations were traders who subscribe for annual trade licenses to operate. According to County Government of Mombasa, ministry of trade and investment registry data (2018), there are 1,396 traders issued with annual trading licences grouped in seven categories consisting of vendors in cereals, food stuff, metal works, wood works, shoes, second-hand clothes and general merchandize.

3.4 Sample Design and Sample Size

The method of sampling describes the sample to be used, procedures of sampling, sampling frame, and the study's sample size. According to Cooper and Schindler (2013), the sample frame delineates the entire set of population from which the sample is derived. Fox and Bayat (2007) propose four parameters that determine the size of the sample. These include; the extent to which the data collected will represent the population, the required accuracy for estimation of sample, the statistical techniques that were adopted for the analysis of each variable and the total population size from where the sample will be derived. Mugenda and Mugenda (2003) asserts that a 10% sample size for a study is considered adequate. Accordingly, 10% of the target populations (140 traders) was selected for the research. The population was stratified according to the categories of traders from which a representative sample was randomly selected based on proportions from each stratum. This sampling taking is expected to

save time since the traders are dispersed in the market. The target population and sample size based on proportion for each category of traders is as summarised in Table 3.1.

Table 3. 1 Licenced Traders in Kongowea Market by June 2018

Traders category	No. of traders	Proportion	Sample size
Second-hand clothes vending	503	36%	50
General Merchandise	293	21%	29
Wood works	69	5%	7
Cereals	223	16%	23
Shoes	98	7%	10
Food stuffs	141	10%	14
Metal works	69	5%	7
Total	**1,396**	**100%**	**140**

Source: CGM, Ministry of Trade and Investment Registry 2018

3.5 Data Collection

Questionnaires containing a mixture of structured and a 5-point Likert scale questions was employed to gather primary data for the study. Structured questions are preferred for the study for they are easier to analyse since they are in an immediate usable form. Questionnaires are simple to analyse hence suitable in collecting data that may not precisely visible as they probe on perceptions, mindset, achievements, motivations and individual understanding (Mellenbergh, 2008). Questionnaires as a data gathering tool are not expensive and easy to administer. The questionnaires were conveyed to the respondent's premises (selected traders) using research assistants. The research assistant assisted in the interpretation and translation of the questionnaire contents to the respondents into appropriate languages. This ensured that both literate and illiterate respondents correctly understand the questions and give appropriate responses. It also ensured completeness of the questionnaires.

3.6 Data Analysis

The quantitative data gathered from respondents using questionnaires was edited to check for accuracy and completeness then fed into the SPSS software and analysis executed using descriptive statistics like measures of central tendency, percentiles and frequencies. Quantitative data was presented in tables followed by their explanations. Furthermore, a multiple regression analysis was done on the study. This was to provide inference of the study results on effect of behavioural biases on trade earning. The equations from the regression analysis is as modelled below:

$$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon$$

Whereby;

Y – Is the dependent variable representing trading earnings of the individual traders measured by average six-month profit made by the traders.

X1 - Representativeness bias

X2 - Loss Aversion bias

X3 - Herding behaviour

X4 - Overconfidence bias

α - constant (intercept), and

β1.......β4 are the coefficients giving the direction and strength of the association

between the independent and dependent variables

ε- Is the error term at 5% significance level

For instance, if the error term in the linear regression model has no association with x, then it is said to have a normal distribution with a mean of zero and constant variance. If the null hypothesis states come as $\beta = 0$, then it means no significant association exists between the independent variable (x) and dependent variable (y), at a 5% significance level

3.6.1 Operationalization of the Study Variables

Table 3.2 is a tabulation of how that variables of the study were measured and operationalised.

Table 3. 2 Operationalization of Variables

No.	Study variable	Academic source	Operational definition	measurement	Questionnaire reference
1	Trading earnings	Razek (2011) Agrawal (2012)	Amount of profits made for a specific time period	Average monthly profits	6
2.	Representativeness bias	Ojwang (2015)	Past performance of goods and forecast on price changes	Ordinal Likert scale (1-5)	7&8
3.	Loss aversion bias	Thaler (1993)	Prior losses incurred in the market	Ordinal Likert scale (1-5)	9&10
4.	Herding behaviour	Ndiritu (2015)	Basket of goods traded by other traders	Ordinal Likert scale (1-5)	11, 12& 13
5.	Overconfidence bias	Hirshleifer (2008)	Skill and knowledge of the trader	Ordinal Likert scale (1-5)	14, 15 & 16

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This section provides the data analysis; the obtained results and discussions. Data was presented using standard deviations, means, percentages and frequencies with the help of tables. The regression analysis as well as correlation of the data was analysed and subsequently discussed. The study used data obtained from questionnaires administered to respondents.

The study targeted a sample of 140 licensed traders at the Kongowea Market in Mombasa County. However, the responses were obtained from 77 traders which represents a 55% response rate. 67 traders representing 45% of the target sample did not provided responses. Mugenda and Mugenda (2007) asserts that a 50% response rate is sufficient, 60% is good and 70% is excellent. The 55% rate of response was therefore considered sufficient for the study. Figure 4.1 is a depiction of the response rate.

Figure 4.1 Response Rate
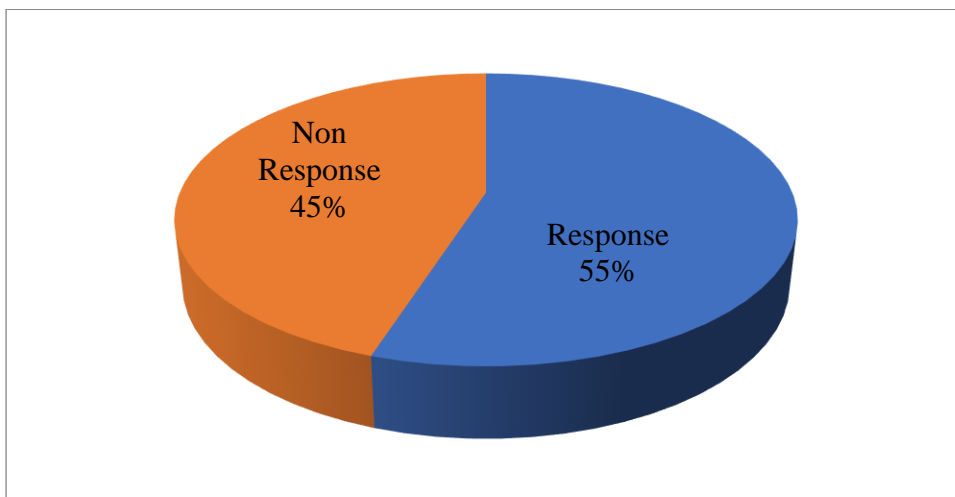
Source: Research findings

4.2 General Information

Gender, age, experience in trading and section of the market the respondents were involved in were some of the demographics that the respondents were asked to state. This was vital in a bid to better understand the respondents. The information helped in subsequent analysis and thence description.

4.2.1 Gender of Traders

In order to ascertain the gender mix of the respondents, a question was posed on the questionnaire for the respondents to recorded whether they are male or female. The responses were tabulated in Table 4.1. The male and female respondents were 42 and 35 representing 55% and 45% of the aggregate respondents respectively.

Table 4.1 Distribution by Gender

Gender	Frequency	Percentage
Male	42	55%
Female	35	45%
Total	77	100%

Source: Research findings

4.2.2 Respondents Aged distribution

The respondents were also requested to provide their age. This was necessary in making sure that the researcher ascertains whether the traders are old or young and which might influence their decision making hence earnings. Table 4.2 is a tabulated summary of the results.

Table 4.2 Respondents Age Distribution

Age	Frequency	Percentage
18 to 20 years	6	8%
21 to 30 years	6	8%
31 to 40 years	14	18%
41 to 50 years	36	47%
Above 50 years	15	19%
Total	77	100%

Source: Research findings

As summarised in Table 4.2 above 6 of respondents were aged between 18-20 years, same as those aged between 21 to 30years representing 8% each. The respondents aged 31 to 40 years were 14 which represent 18% of the total respondents. The respondents aged 41 to 50 years were the majority with 47% being 36 in number. Those aged above 50years were 15 which represent 19% of the total respondents. Majority of the traders were above 40 years.

4.2.3 Respondents Experience in Trading

To ensure that the researcher gets a better understand how the traders have practiced behavioural biases over the years the traders were required to record the number of years they have been involved in trading at Kongowea market. The results were tabulated in Table 4.3.

Table 4.3 Distribution by experience in Trading

Number year in Trading	Frequency	Percent
1 to 3 years	7	9%
4 to 6 years	14	18%
7 to 10 years	35	46%
10 years and above	21	27%
Total	77	100%

Source: Research Findings

As tabulated in Table 4.3, the traders who had 1to 3 years of trading experience were 7 which represent 9% of the total number of respondents, while those that had experience of 4 to 6 years were 14 which represent 18% of the total respondents. The traders with 7 to 10 years of experience were the majority being 35 in number and representing 46%. Those who had traded for over 10 years were 21 representing 27%.

4.2.4 Section of Kongowea Market

To establish the sections of the market from which these traders are working at, the study asked the respondents to fill appropriately the section which their trade is based in. The responses were tabulated as shown in Table 4.4. These included the frequencies and the percentages.

Table 4.4 Distribution by Section of the Market

Section of the Market	Frequency	Percentage
Cereals	10	13.0
Food Stuff	7	9.1
General Merchandise	14	18.2
Wood Works	3	3.9
Second hand clothes vending	38	49.3
Shoes	5	6.5
Total	77	100.0

In Table 4.4, the traders who dealt with cereals were 10 which represent 13.0% of the total respondents; those that dealt with food stuff were 7 representing 9.1%. The respondents that dealt with general merchandise were 14 which represent 18.2%, those that dealt with woodworks were 3 representing 3.9%. The majority were those that vended second hand clothes which were 38 which represent 49.3% of the total number of respondents. Those that trade shoes were 5, which represent 6.5% of the total.

4.3 Respondents Trade Earnings

The frequencies and subsequent percentages of the trade earnings were calculated and tabulated as shown in Table 4.5. The trade earnings were measured by the average past six-month profits of the respondents at the market. The study sought ascertain whether trade earnings are affected by the behavioral biases.

Table 4.5 Distribution of Trade Earnings

Trade Earnings	Frequency	Percent
5,000 -15,000	9	12%
15,000 - 25,000	14	18%
25,000 - 35,000	26	34%
Above 35,000	28	36%
Total	77	100%

From Table 4.5, the traders who earned between 5,000 to 15,000 were 9 which represent 11.6% of the total. Those who averagely earned between 15,000 to 25, 000 were 14 which represent 18.2% of the total number of respondents. Those who earned an average of 25,000 to 35,000 were 26 representing 33.8% of the total and finally those who earned an average of above 35,000 for the past three months were 28, representing 36.4% and hence the majority.

4.4 Traders Behavioral Biases

The study wanted to establish the effect of behavioural biases on trade earnings of traders at Kongowea Market. These behavioural biases were; Representativeness, Loss Aversion, Herding Behaviour and Overconfidence Biases. The mean and standard deviation of the variables based on responses from the questionnaires were calculated. The finding was as discussed in the successive sub-chapters.

4.4.1 Representativeness Bias

Traders were presented with statements in the questionnaire regarding the degree of how they agree or disagree on issues of representativeness bias using the Likert Scale of 1 to 5 where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. Averages from the responses were tabulated from the largest to the least and also their corresponding standard deviations. The results are as presented in Table 4.6

Table 4.6 Opinion on effect of Representativeness Bias

Representativeness Bias	Mean	Std. Dev
I decide to trade on a certain goods based past performance of those goods.	4.25	.746
I forecast future changes in the prices of goods based on the recent prices.	2.91	.830
Mean of means	3.58	

In Table 4.6, whether the traders decide to trade certain goods based on past performance of those goods, the mean of the responses was 4.25 which was near 4 implying that the respondents were in agreement. The standard deviation of 0.746 was the smallest, meaning the responses were closer to the mean of means.

On whether the traders forecast future changes in the prices of goods based on the recent prices the mean was 2.91, which is closer to 3 on the Likert Scale. This shows that the traders were neutral on forecasting of future changes. The related standard deviation of 0.830 was the biggest implying that responses were furthest from the mean of means. The overall mean (the mean of the means) shows a value of 3.58 which is near 4 showing the traders agreed on the presence of representative bias in their trading.

4.4.2 Loss Aversion Bias

The respondents were presented statements in the questionnaire regarding the degree of how they agree or disagree on issues of loss aversion bias using the Likert Scale of 1 to 5 where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. A tabulation of the mean responses was done from the largest to the least and also their corresponding standard deviations. Table 4.7 is a tabulation of the results.

Table 4.7 Opinion on effect of Loss Aversion Bias

Loss Aversion Bias	Mean	Std. Dev
I become more careful in subsequent buying and selling whenever I incur losses.	4.32	.733
I always prefer trading in goods with the lowest chances of making losses	4.22	.661
Mean of means	4.27	

In Table 4.7, on whether the traders becoming more careful subsequent buying and selling whenever they incur losses the responses produces a mean of 4.32 which is near 4 on the Likert Scale. This shows that traders agreed on being careful after a loss. The standard deviation of 0.733 was however the largest an indication that responses from the traders were diverse and heterogenous. On whether the traders preferred trading in goods with the lowest chances of making losses had a mean 4.22 which is closer 4 on the Likert Scale. This implies that respondents agreed on trading on goods with the lowest chances of making losses. The standard deviation of 0.661 was the least and hence implying the responses were near the mean of means and least varied. The overall mean shows a value of 4.27 which is near 4 showing the traders agreed on the presence of loss aversion bias in their trading.

4.4.3 Herding Behavior

The respondents were presented statements in the questionnaire regarding the degree of how they agree or disagree on issues of herding behaviour using the Likert Scale of 1 to 5 where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. The mean responses were tabulated from the largest to the least and also their corresponding standard deviations. Table 4.8 is a tabulation of the results.

Table 4.8 Opinion on effect Herding Behaviour

Herding Behaviour	Mean	Std. Dev
Trading in goods that everyone is buying and selling is less risky.	4.75	.434
I always change to trading in goods that yield the best return in the market.	4.21	.767
In deciding on which goods to buy and sells, I follow what another trader buy and sell and are fast and more certain.	4.18	.739
Mean of means	4.38	

In Table 4.8, on whether the traders trade in goods that everyone is buying and selling is less risky got a mean of 4.75 that is near 5 on the Likert Scale. This shows that the traders strongly agreed on trading on less risky goods traded by everyone. The standard deviation was 0.434 which shows that the responses were near the overall mean and also, they were less varied and almost homogenous. On whether the traders always trade in goods that yield the best return in the market had the second largest mean of 4.21 that near 4 indicating that respondents were in agreement. The standard deviation of 0.767 was the largest indication that responses from the traders were diverse and heterogenous. The responses were furthest from the overall mean.

On whether the traders in deciding on which goods to buy and sells, they follow what another trader buy and sell and are fast and more certain had the least mean 4.18 which is also near 4 on the Likert Scale hence respondents agreed on this. The standard deviation of 0.739 was the second largest indication that responses were second farthest from the mean of means. A look at the overall mean of 4.38, is near 4 which implies that the traders agreed on the presence of herding behavior in their trading at Kongowea Market.

4.4.4 Overconfidence Bias

The respondents were presented statements in the questionnaire regarding the degree of how they agree or disagree on issues of overconfidence bias using the Likert Scale of 1 to 5 where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. A tabulation of the mean responses was done from the largest to the least and also their corresponding standard deviations. Table 4.9 is a tabulation of the results.

Table 4.9 Opinion on effect of Overconfidence Bias

Overconfidence Bias	Mean	Std. Dev
I feel I am experience enough to know the goods that yield better returns in the market.	4.21	.767
I'm convinced that my expertise and proficiency can assist me outcompete other traders in Kongowea market.	3.66	.476
I have more knowledge on trading at Kongowea Market than other traders.	2.55	.994
Mean of means	3.47	

On overconfidence bias in Table 4.9, on whether the traders feel they are experienced enough to know the goods that yield better returns in the market, a mean of 4.2 was obtained which was the largest implying that the traders were in agreement on this. The standard deviation of .767 was the second smallest indicating that the responses came second in terms of being near to the mean. In regards to if respondents' is convinced that my expertise and proficiency can assist me outcompete other traders in Kongowea market had a mean of 3.66 which is near 4 on the Likert Scale indicating agreement. The standard deviation of 0.476 was the least implying that the responses were least diverse and closest to the mean of means. On whether, the respondents have more

knowledge on trading at Kongowea Market than other traders had a mean of 2.55 which is closer 3 implying that that traders were neutral. The standard deviation was the largest at 0.994 which implies that responses were highly diverse and heterogenous; also, the responses were farthest from the mean of means. The overall mean was 3.47 and was closer 3 on the Likert Scale an indication that traders were neutral on the existence of overconfidence bias in their trading at Kongowea Market.

4.5 Correlation Analysis

According to Shirley et al., (2005), Pearson correction value of between ±0.1 and ±0.29 is an indication of a weak correlation. Pearson correlation value of between ±0.3 and ±0.49 is a moderate correlation and Pearson correlation value of between ±0.5 and ±0.9 (-0.5 and -0.9) is a strong correlation. The Correlation analysis of the study variables was conducted. Table 4.10 is a tabulation of the results.

Table 4. 10 Correlation Analysis of Study Variables

		Trade Earnings	Representative Bias	Loss Aversion Bias	Herding Behaviour	Overconfidence Bias
Trade Earnings	Pearson correlation	1				
	Sig. (2-tailed)					
	N	77				
Representative Bias	Pearson correlation	-.363**	1			
	Sig. (2-tailed)	.001				
	N	77	77			
Loss Aversion Bias	Pearson correlation	-.359**	.928**	1		
	Sig. (2-tailed)	.001	.000			
	N	77	77	77		
Herding Behaviour	Pearson correlation	-.403**	.952**	.973**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	77	77	77	77	77
Over confidence Bias	Pearson correlation	-.369**	.922**	.922**	.923**	1
	Sig. (2-tailed)	.001	.000	.000	.000	
	N	77	77	77	77	77
**. Correlation is significant at the 0.01 level (2-tailed).						

Trade earnings were found to have a moderate negative correlation with representative bias with a Pearson correlation value of -0.363, however the relationship was significant with a p-value of 0.001<0.05 at 95% level of significance. Implying a rise in representative bias results to a decrease in trade earnings. Loss aversion bias also had a Pearson correlation value of -0.359 which is a moderate but negative correlation to trade earnings. The relationship was however significant with a p-value of 0.001<0.05 at 95% significance level. Herding behaviour correlated negatively with trade earnings with a Pearson correlation value of -0.403 which shows that the correlation is moderate. The relationship was however significant with a p-value of 0.000<0.05 at 95% level of significance. Overconfidence bias was also found to have a moderate negative correlation with trade earnings with a Pearson correlation value of -0.369. The relationship was significant with a p-value of 0.001<0.05 at 95% significance level.

4.6 Regression Analysis

Regression analysis was carried out to determine the linearity of the relationship between the dependent and the independent variables of the study. The results were tabulated and discussed as shown in the subsections here below;

4.6.1 Multiple Regression Model Summary

Table 4.11 shows that the coefficient of determination R^2 as .192 which implies that 19.2% of the variation in trade earnings is explained by the model. Consequently 80.8% of the total variance in trade earnings cannot be explained by the model. Hence the results reveal that the behavioural biases affect trade earnings. The Table 4.11 summarises the results for variations between the dependent and independent variables.

Table 4.11 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.438a	.192	.147	.934

a. Predictors: (Constant), Overconfidence Bias, Representative Bias, Loss Aversion

Bias, Herding Behaviour

4.6.2 Analysis of the Variance of the Study Variables (ANOVA)

The Table 4.12 below clearly highlights a positives proportion of regression to residuals, an indication that there was a significant relationship between the dependent and independent variables used in the study. From the ANOVA Table 4.11 below, it was found that Overconfidence Bias, Herding Behaviour, Representative Bias, Loss Aversion Bias, affected trade earnings of traders at Kongowea Market, significantly since significant values at (4, 72) degrees of freedom is 0.004<0.05 at 5% level of significance. This implies that behavioural biases affected trade earnings for traders at Kongowea Market. The ANOVA table was generated from the Analysis and is as Table 4.12;

Table 4.12 Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
			ANOVAa			
1	Regression	14.916	4	3.729	4.270	.004b
	Residual	62.877	72	.873		
	Total	77.792	76			

a. Dependent Variable: Trade Earnings

b. Predictors: (Constant), Overconfidence Bias, Representative Bias, Loss Aversion Bias,

Herding Behaviour

4.6.3 Coefficients of the Regression Model

The co-efficient of the regression model were obtained from the analysis and presented as below;

Table 4.13 Coefficients of the Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	5.858	.807		7.260	.000
	Representativeness Bias(X1)	-.505	.621	-.305	-.813	.041
1	Loss Aversion Bias(X_2)	-1.236	.842	-.704	-1.468	.014
	Herding Behaviour(X_3)	-2.117	.986	-1.209	-2.146	.035
	Overconfidence Bias(X_4)	-.305	.511	-.184	-.597	.002

a. Dependent Variable: Trade Earnings (Y)

The unstandardized coefficients were used and the resulting regression equation is as shown below;

$$Y=5.858-.505X_1-1.236X_2-2.117X_3-.305X_4$$

When the independent variables (behavioural biases) are all zeros, this means that trade earnings will be at 5.858 units. A unit increase in representativeness bias results to decrease in trade earnings by 0.5.05 units. When Loss Aversion Bias increases by a unit, trade earnings drop by 1.236 units. When herding behaviour increases by one unit, trade earnings decreases by 2.117 units. A unit increase in overconfidence bias results to a drop-in trade earnings by 0.305 units. Overall there is a significant relationship between behavioral biases and Trade earnings.

4.7 Discussion of Findings

From an analysis of the generic detail it was established that there was no gender parity amongst the traders at Kongowea Markets which was in line with the finding of Mburu (2017). Majority of the traders were above 40 years and had 7 to10 years of trading at Kongowea market implying that they had the relevant experience to be able to understand how behavioural biases affected their trade earnings. Second hand clothes vending was the major trading line buy traders at Kongowea Market.

Representative bias affected trade earning of traders at Kongowea Market. This is because most traders decided to trade in certain goods based on their past performance which is in line with Pompian (2012). This is despite traders being neutral on forecasting on future earnings of the goods they trade in. Chandra & Sharma (2010) asserted that psychological biases affects the behaviour of individual investors and the presence of representative bias confirms this. Loss aversion bias also affected the trade earning as traders were more careful in subsequent buying and selling whenever they incur losses. Traders also preferred trading in goods with lowest chances of making losses. These findings were in line with those of Ojwang (2015) and Ndiritu (2015) who all found out that loss aversion bias was present in trading activities.

Herding behaviour was present and affected trade earnings in that traders traded in goods that everyone else is buying and selling, goods that which are less risky and those that yielded the best returns in the market. This is true as it means that volume of trade by individual traders will be affected and hence earnings. They also traded in goods that yielded the best return in the market. Ojwang (2015) found that herding behaviour was present at Kibuye Market in his study. This was also confirmed by another study

by Athur (2014) in his study on phycological factor effect on trading choices in Kenya. Overconfidence bias was also found to be present at Kongowea market as traders felt that they were confident enough to know the goods that yield better returns in the market and also believed that they had the skills and knowledge to outperform other traders in Kongowea Market. The findings were in line with Ojwang (2015) and Athur (2014).

The correlation analysis yielded an adverse but significant association between trade earnings and behavioural biases studied. Therefore, behavioural biases affected trade earnings of traders in Kongowea Market, Mombasa County, Kenya. This confirms the findings of Ojwang (2015) who established that the relationship was significant; however, Athur (2014) found out that some of the behavioural biases were not significant (loss aversion, over-optimism and regret aversion) in the investment decisions. Regression analysis showed that the behavioural biases studied (over confidence bias, herding behaviour, representative bias and loss aversion bias) contributed to 19.2% of the variation in the trade earnings. This was small but near to what Athur (2014) found out which was 32.9%. However, Mburu (2017), found out that the variation contributed by behavioural biases was 77.9%. In this study therefore 80.8% of the variation in trade earnings is caused by other aspects not used in the study.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the findings of the research, study inference, recommendations and key areas to be considered for more research. This chapter is hinged on the discussions and findings of the study.

5.2 Summary of Findings

The study wanted to ascertain the effect of behavioural biases on trade earnings of traders at Kongowea market. The independent variables of the study were representative bias, loss aversion bias, herding behaviour and overconfidence bias. Summaries of finding for each of these variables are presented in this section.

On representative bias, traders agreed on the presence of representative bias in their trading activities with an overall mean of 3.58. Based on correlation analysis, representative bias had a Pearson correlation of -.363, with a p value of .001 which is significant at 5% significant level. This was in line with the regression analysis which had a p value of P=0.041<0.05. The findings showed that representative bias has a significant effect on amount of trade earning earned by traders at Kongowea market. Loss aversion had an overall mean of 4.27 indicating that traders were in agreement on the presence of loss aversion bias in their trading activities. Correlation analysis results had a Pearson correlation of -.359 with a p value of .001. Regression analysis had a p value of p=0.014<.05. From the finding therefore, loss aversion significantly affected trade earnings.

Herding behavior had a mean of mean of 4.38 meaning traders agreed on the presence of herding behaviour at Kongowea Market. Pearson correlation was -.403 with a p value of .000 which was supported by the regression analysis p values of P=.035<.05. Both the result show that herding behaviour has a significant effect on trade earning. In over confidence bias, the traders were neutral on the presence of the bias with an overall mean of 3.47. the Pearson correction coefficient was -.369 with a p value of .001. significant value from the regression analysis had a p value of p=.002<.05. It follows therefore that overconfidence bias significantly affected trade earnings.

From the correlation analysis, the Pearson correlation values for all the biases under study had negative values indicating that they negatively affected trade earnings. This implies that an increase in any of the behavioral bias led to a decrease in trade earnings. The relationship between the behavioral biases and trade earnings was significant since the p values were less than 0.05 from both the correlation analysis and regression analysis. The regression analysis further established that the variation in trade earnings caused by behavioral biases covered in this study was 19.2%.

5.3 Conclusion of the study

Representative bias significantly affected trade earnings of traders at Kongowea Market. A moderate adverse correlation exists between representative bias and trade earning. Loss aversion had a significant effect on trade earning. The correlation between loss aversion biased and trade earnings was moderate negative.

Herding behaviour had a significant effected on trade earnings. There correlation between herding behaviour and trade earnings is moderate and negative. Implying a rise in representative bias results to a decrease in trade earnings. Trade earnings are

significantly affected by overconfidence bias. Also the correlation between overconfidence bias and trade earnings are also moderate and negatively which therefore implies that an increase in overconfidence bias would result to a decrease in trade earnings.

5.4 Recommendations of the study

Since representative bias was found to affect trade earnings negatively, the study recommends that traders should trade in goods that give returns and not based on their past performance. Also, the study recommends workshops to be conducted on the traders to aid them in averting this bias.

Loss aversion bias was found to negatively affect trade earnings. Policy makers should take note of the findings of this study and that they should factor the loss aversion bias when they are dealing with the traders. This will aid in improvement of the trading experience.

Herding behaviour affected trade earnings negatively. Following what other traders are engaging in a bid to get best returns should be discouraged by the institutions that train traders to do their undertakings. This can be in the form of trainings and outright advice.

Overconfidence bias affected trade earnings negatively. Traders should attend workshops and trainings provided by the county and national governments so as to get rid of this bias. Also, policy makers should take note of the existence of this bias while they are dealing with the traders it should be provided for in the process of arriving at choices so as to minimize the effect on trade earnings.

5.5 Limitation of the study

Primary data was used for the research is in most cases can be construed to be unclear and information obtained may not be specific to assist traders in making trading decisions. Accuracy of collected data also relied on the honesty of respondents hence may possess elements of subjectivity as there was no way of authenticating the data collected. The study looked at four biases only hence may not be an exhaustive. Beside behavioural biases, many other factors mostly relating to demand and supply market force not considered in the study could still affect trade earnings. Further not all targeted population were will to cooperate in completing the questionnaire which led to a response rate of only 55% hence generalisation of findings may be limited.

5.6 Suggestions for further research

More factors could have affected the trade earnings of the traders at Kongowea and this study recommends that these unknown factors be studied to establish what the 80.8% represents. More studies can be done in other markets in different counties to ascertain whether the same or different results may be obtained.

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APPENDICES

Appendix I: Questionnaire

SECTION A: GENERIC DETAILS

1. Gender: Male [ ]   Female [ ]

2. Age in Years:

    i.   18 to 20   [ ]

    ii.   21 to 30   [ ]

    iii.   31 to 40   [ ]

    iv.   41 to 50   [ ]

    v.   50 and above [ ]

3. Number of Year engaged trading

    vi.   1-3 [ ]

    vii.   4-6 [ ]

    viii.   7-10 [ ]

    ix.   Over 10 [ ]

4. Section/Unit of Kongowea Market_____

    i.   Cereals   [ ]

    ii.   Food staffs   [ ]

    iii.   General Merchandize   [ ]

    iv.   Metalworks   [ ]

    v.   Woodworks   [ ]

    vi.   Second hand clothes vending   [ ]

    vii.   Shoes [ ]

5. What type of trading activities do you undertake here at Kongowea market?

_____

SECTION B: TRADE EARNINGS

6. What has been your average monthly profit from your goods in the last six months?

    i.   About Kes 5,000 to 15,000 [ ]

    ii.   About Kes 15,000 to 25,000 [ ]

iii.   About Kes 25,000 to 35,000 [ ]

iv.   Over Kes 35,000[ ]

SECTION C: BEHAVIORAL BIASES

In questions 7to16, choose the option that best fit your situation.

The responses are 1= I strongly disagree 2= I disagree 3= I am neutral 4= I agree 5= I strongly

No.	Statement	1	2	3	4	5
7	I decide to trade in certain goods based past performance of those goods.					
8	I forecast future changes in the prices of goods based on the recent prices.					
9	I become more careful in subsequent buying and selling whenever I incur losses.					
10	I always prefer trading in goods with the lowest chances of making losses					
11	In deciding on which goods to buy and sells, I follow what another trader buy and sell and are fast and more certain.					
12	Trading in goods that everyone is buying and selling is less risky.					
13	I always change to trading in goods that yield the best return in the market.					
14	I'm convinced that my expertise and proficiency can assist me outcompete other traders in Kongowea market.					
15	I feel I am experience enough to know the goods that yield better returns in the market.					
16	I have more knowledge on trading at Kongowea Market than other traders.					