

**EFFECT OF BEHAVIOURAL BIASES ON TACTICAL ASSET  
ALLOCATION IN INSURANCE COMPANIES IN MOMBASA TOWN,  
KENYA**

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## DECLARATION

This research project report is my original work and has not been presented for a degree in any other university.

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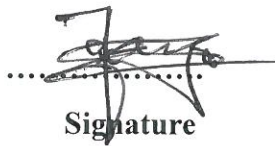
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This research project report has been submitted for examination with my approval as University supervisor.

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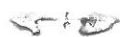
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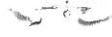
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## ABBREVIATIONS AND ACRONYMS

<b>ANOVA</b>	Analysis of Variance
<b>IPO</b>	Initial Public Offering
<b>NSE</b>	Nairobi Securities Exchange
<b>OCB</b>	Overconfidence Bias
<b>PC</b>	Pearson Correlation
<b>RAB</b>	Regret Aversion Bias
<b>RB</b>	Representativeness Bias
<b>ROA</b>	Return on Assets
<b>ROE</b>	Return on Equity
<b>SAB</b>	Self-Attribution Bias
<b>SL</b>	Significance Level
<b>SMEs</b>	Small and Medium Enterprises
<b>TAA</b>	Tactical Asset Allocation
<b>UK</b>	United Kingdom
<b>VIF</b>	Variance Inflation Factor

## ABSTRACT

Behavioural finance recognizes that investor biases make investors not to view investment rationally from the risk-return perspective. Behavioural biases determines the way tactical asset allocation among insurance companies as it is the financial managers who make major corporate investment decisions. The emotions and cognitive psychology of investors determines medium term changes to asset mix of their portfolios. Tactical asset allocation is necessary for the insurance companies in order to take advantage of short-term profitable opportunities and make appropriate adjustments to the portfolio based on changes in the business environment. Despite this practice being considered appropriate to enhance performance, some insurance companies in Kenya are experiencing decline in financial performance, in the midst of changes in the regulatory environment, namely interest rate capping in Kenya. The study was conducted to determine the effect of behavioural biases on tactical asset allocation in insurance companies in Mombasa town, Kenya. The study particularly determined the effect of overconfidence bias, representativeness bias, self-attribution bias and regret aversion bias on tactical asset allocation in insurance companies in Mombasa town, Kenya as well as the moderating effect of financial regulations on the relationship between behavioural biases and tactical asset allocation in insurance companies in Mombasa town, Kenya. The study was founded on overconfidence theory, human heuristics theory, behavioural portfolio theory and prospect theory. Descriptive cross-sectional survey research design was used. The target population of this study was 102 employees of 34 insurance companies in Mombasa town, Kenya. A census survey was conducted. The researcher tested the research questionnaire's reliability and also ensured its validity before undertaking the main study. The research supervisor was consulted to ensure face validity and content validity of the research questionnaire. Cronbach's alpha coefficient was used to test the reliability of the research questionnaire. Data was collected using self-administered structured questionnaires. Descriptive statistical tools included frequencies, percentages, means and standard deviations. Inferential statistical tools were correlation and multiple regression analysis. Tables and graphs were used in presentation of study findings. It was noted that increased overconfidence bias, representativeness bias and regret aversion bias are associated with decreased tactical asset allocation while increased self-attribution bias is associated with enhanced tactical asset allocation and vice-versa, though insignificantly. It was concluded that tactical asset allocation decisions in insurance companies are subject to behavioural biases. It was also concluded that overconfidence bias ( $\beta_1 = 0.347$ ;  $p > 0.05$ ) and regret aversion bias ( $\beta_4 = 0.182$ ;  $p < 0.05$ ) positively and significantly affect tactical asset allocation while self-attribution bias ( $\beta_3 = 0.123$ ;  $p > 0.05$ ) and representativeness bias ( $\beta_2 = -.022$ ;  $p > 0.05$ ) have insignificant effect on tactical asset allocation. It was also concluded that that financial regulations do not significantly moderate the relationship between the behavioural biases and tactical asset allocation in insurance companies in Mombasa town, Kenya is insignificant. Recommendations were made to insurance companies, financial advisors and consultants and future researchers.

## CHAPTER ONE

### INTRODUCTION

#### **1.1 Background to the Study**

Investor psychology and emotions are key determinants of investments in financial markets and the value of financial securities as is widely recognized (Nyamute, Lishenga & Oloko, 2015). An investor is said to be behaviourally biased when the investor makes decisions that are not rational, that is, faulty decisions (Pompian, 2012). Biased investors are subject to given beliefs or attitudes as they make decisions which are said to be irrational (Shefrin, 2007). Singh (2010) stated that investors may make cognitive errors because of faulty reasoning caused by emotions and investor psychology.

Tactical asset allocation is an allocation within a portfolio that takes advantage of short-term opportunities which result in an extra return, based on preset asset mix. Tactical asset allocation is considered as a practice that helps to improve returns from the initial long-term asset mix set by the enterprise (Dziwok, 2014). Insurance companies can be said to be practicing tactical asset allocation when they adjust the asset mix in line with forecasts of movements of investment returns in the short term. In tactical asset allocation, the investor considers changes to the initial asset targets for the overall portfolio and within asset classes (Usman, 2018)

Theories have been developed to explain the behavioural biases that affect investment decision makers. According to overconfidence theory, knowledge overestimation, risk underestimation and exaggeration of event control ability are common practices among overconfident investors. Overconfident investors tend to ignore the fact that information that they have at their disposal may not be adequate to ensure reliable forecasting. Investment with overconfidence, can lead to inappropriate or risky investments. According to heuristics theory, what individuals tend much more broadly to rely upon are simple rules that require shorter time, both in terms of information collection and processing (Cruciani, 2017). Behavioural portfolio theory suggests that investors usually allocate funds in their portfolios based on various objectives and not actually to maximize portfolio value amidst risks (Shefrin & Statman, 2007). Prospect theory suggests that people are concerned with possible gains and losses that result

from certain investment decisions based on a given point of reference such as the cost of acquisition (Heukelom, 2009).

Insurance companies modify their portfolios by reallocating funds to various asset classes in the midst of changes in the business environment. An example of such change is interest rate capping in Kenya which had implications for portfolio mix of insurance companies which usually buy bank bonds. The insurance companies are critical in raising funds and risk management, to facilitate financial and economic development (Li, 2019). Interest rate capping in Kenya resulted in generally low interest rates offered by banks. The advent of low interest rates affected the financial connection between banking and insurance sectors as it changes the patterns of funding banks and the strategies of investment in insurance company business (Niedrig, 2015). Efficiently carrying out tactical allocation of funds in insurance companies are key in enhancing the competitiveness of insurance business (Li, 2019).

### **1.1.1 Behavioural Biases**

Behavioral biases are wrongs and potential damaging behaviors caused by an erroneous decision. Psychologists have noted that people are usually overconfident; they usually overrate their abilities to achieve investment targets, that is, performance of investments. One can rarely find a person rating his ability as below average (Byrne & Utkus, 2013). Practically, people usually view the world positively as regards their endeavours and plans. Despite the fact that such world views can help one to forget disappointing experiences, it can result in biased fund allocation decisions. This is because the investor will be tempted to exaggerate their ability to engage in successful investment ventures and have a narrow view of the real factors surrounding the investment decisions, that the investor has made. Overconfident investors are usually miscalibrated and are suffer from better-than-average effects, control illusions and too much optimism (Byrne & Utkus, 2013).

The notion of representativeness bias implies that, stereotype-based investment decisions are made by the investor. This occurs when the investor does not look at the necessary and consequential nitty-gritties surrounding an investment decision. This results in funds being allocated to various investments without detailed and adequate evaluation of the situation (Byrne & Utkus, 2013). For example, people prefer

buying securities of companies or firms that are generally performing well. Such decisions don't consider the possibility that the share prices of such companies may change as various fundamental factors change in the investment environment. Therefore, such quick decisions which don't consider adequate fundamental analysis results in faulty investment decisions (Byrne & Utkus, 2013).

Investors who exhibit self-attribution bias usually view successful outcomes as a result of their abilities and skills, but when the outcomes are not positive, the investors view that as a result of misfortunes or that the luck was not favoring them. This results in ignorance of unfavourable feedback which could aid in providing the way forward to implement strategies that would lead to allocation of funds in successful investments (Byrne & Utkus, 2013). Self-serving bias is common and observable in our day-to-day environment, it can be detected easily, and it feeds on financial crises as it provides a fertile ground for factors to which people can attribute their failure (Moosa & Ramiah, 2017).

Regret aversion describes how the anticipation of a negative feeling can substantially affect the outcome of the decision-making process (Cruciani, 2017). Different from other heuristics, whose nature and implications have mainly been treated descriptively, the implications of regret aversion have been formally described in a model, initially proposed as one of the alternatives to the expected utility model by Loomes and Sugden (1982). Individuals evaluate the possible regret or rejoice arising from the realization of each one of the possible occurrences compared to what could have been. In other words, individuals are able to anticipate negative and positive feelings arising from a given choice and translate them into increases or decreases in utility (Cruciani, 2017).

### **1.1.2 Tactical Asset Allocation**

Construction of a broad-based portfolio in financial terms is called asset allocation. It is generally encouraged that, the previous fund allocation into various asset classes be reviewed so that changes in the business environment can be factored into the investment decision (Dziwok, 2014). Tactical asset allocation is an allocation within a portfolio that takes advantage of short-term opportunities which result in an extra return, based on preset asset mix. Consequently, one can take advantage of short term

profitable investment opportunities. Usually, the undervalued assets are bought and the overvalued assets are sold (Dziwok, 2014). The permitted level of tolerance established for the reference portfolio at the beginning should not be significantly changed. While the decision-making process for allocating assets in the long-term requires the consideration of long term class return, volatility and correlation, changes in the market and the business environment determine the decision to tactically allocate assets (Dziwok, 2014).

Tactical asset allocation in insurance companies implies that the returns to funds invested are monitored over time as well as the risks in the short term evaluated in order to make changes to the initial asset mix in the short to medium term (Dwizok, 2014). Tactical asset allocation involves adjusting the initial strategic or long-term asset mix in view of upcoming investment opportunities. Tactical shifts to the portfolio may also be done within asset classes. Therefore, adjustment of long-term asset class mix weights, adjustment of sub-asset class mix weights, short term return forecasts as well as portfolio monitoring are key indicators of tactical asset allocation in insurance companies (Dwizok, 2014).

Usman (2018) noted that it is a good practice for investors to define their tolerable risk levels, strategize appropriately in allocating funds to various asset classes and rebalance their investment portfolio at appropriate times. According to Dziwok (2014), the restructuring of asset mix of an enterprise should be done whenever there are sudden market changes, or based on an investment policy developed which stipulates the portfolio rebalancing timelines. Tactical asset allocation is a key strategy for insurance companies to make gains resulting from utilization of opportunities in the short term and respond to pressure from the business environment in order to enhance portfolio performance (Dziwok, 2014).

### **1.1.3 Behavioural Biases and Asset Allocation**

According to Pompian (2012) from the United States, control illusion can be the result of familiarity with tasks, competition and actively getting involved. The result of such bias in investment decision making is inefficient tactical asset allocation in portfolio management (Pompian, 2012). Linciano (2010) from Italy noted that investors systematically commit reasoning or preference errors to reconcile with the rationality

assumption. These errors are reflected in behavioural anomalies that lead investors to perceive wrongly the relationship between risks and returns and hence negatively affecting tactical asset allocation process (Linciano, 2010). In tactical asset allocation process, identification of demand for investments and alternative evaluation are significantly and positively associated with investor overconfidence bias in Taiwanese stock market (Linciano, 2010).

In the United States, the United Kingdom, Germany, Japan investors' cognitive psychology and mental biases lead to investors carrying out tactical asset allocation in favor of the growth stocks, that is, the growth stocks are always preferred to the value stocks by the investors irrespective of the stock fundamentals behavior (Akinde, Peter & Ikpefan, 2018). Alquraan, Alqisie and Al Shorafa (2016) recognized that overconfidence, loss averse and perception of investor's risk significantly affects tactical asset allocation among investors in the stock market in Saudi Arabia. According to Miwa and Ueda (2014), tactical asset allocation through investment in growth stock in the Japan and United States equity market is influenced by sentiments and behavior of investors.

#### **1.1.4 Insurance companies in Mombasa County**

The insurance companies in Mombasa can be classified as general insurers, long-term insurers and reinsurers. General insurance entails annual or short-term contracts that insure the policy holders in case of damage to property or liability, other than life. General insurance includes commercial and personal insurance. Reinsurance business involves protecting insurance companies from financial losses. Long term insurers provide protection against life events such as death, retirement and disability (Insurance Regulatory Authority [IRA], 2018). The insurance companies in Mombasa town are generally increasing investments in assets that generate income. In Kenya, most of the investments by insurance companies are in securities offered by government (57.4%), properties (15.8%), term deposits (9.4%) and listed equities (7.6%). The total investment portfolio of general insurers are financial securities of the government (41.9%) and properties (22.5%) (IRA, 2018).

## 1.2 Research Problem

Behavioural finance recognizes that investor biases make investors not to view investment rationally from the risk-return perspective. Behavioural biases determines the way tactical asset allocation among insurance companies as it is the financial managers who make major corporate investment decisions. The emotions and cognitive psychology of investors determines medium term changes to asset mix of their portfolios (Nyamute, Lishenga & Oloko, 2015). Tactical asset allocation is necessary for the insurance companies in order to take advantage of short-term profitable opportunities and make appropriate adjustments to the portfolio based on changes in the business environment. Despite this practice being considered appropriate to enhance performance, some insurance companies in Kenya are experiencing decline in financial performance, in the midst of changes in the regulatory environment, namely interest rate capping in Kenya (IRA, 2018).

Tactical asset allocation can help to ensure realignment of the portfolio mix in the short term for improved financial performance. Notwithstanding, insurance companies in Mombasa County are generally reporting declined financial performance, (IRA, 2018). The insurance industry report by IRA report confirms this. A loss of KES 1.65 billion was reported in 2018 by general insurers in underwriting. The reinsurers reported a loss of KES 397.90 million in 2018, down from 2017 profit of KES 252.79 million in underwriting. Declining performance in underwriting business resulted in reduced ROA and ROE. There was a 16.6% drop in income from investments of long-term insurers, in 2017 to 2018 (IRA, 2018).

Several studies conducted by researchers reveal that behavioural biases affect tactical asset allocation. Kanojia, Singh and Goswami (2018) found out that investors get maximum influenced by representative bias, followed by overconfidence, cognitive dissonance and disposition effect. In Islamabad Stock Exchange, investors are overconfidently think that they have power to control their investments fully (Qadri & Shabbir, 2014). It was revealed through the review of pertinent literature that most studies did not focus on tactical asset allocation in insurance companies with particular focus on adjustment of long-term asset class mix weights, adjustment of sub-asset class mix weights, short term return forecasts and portfolio monitoring. It was revealed that little has been done on the effect of overconfidence bias (OCB), representativeness



bias (RB), self-attribution bias(SAB) and regret aversion bias (RAB) on tactical asset allocation (TAA) in insurance companies. Therefore, the question the researcher sought to answer is: What is the effect of behavioural biases on TAA in insurance companies in Mombasa town, Kenya?

### **1.3 Research Objective**

To determine the effect of behavioural biases on tactical asset allocation in insurance companies in Mombasa town, Kenya.

### **1.4 Value of the Study**

Policy makers will greatly benefit from this study. They will get valuable knowledge on practices that should be encouraged among small investors as regards investments. This is because the decision on asset allocation revolves around the use of finances. It is the goal of policy makers to ensure that best approaches and practices are adopted by insurance companies in investment process.

The study will be paramount to financial services practitioners. To financial advisors and consultants, this study will be important as it will provide knowledge and guide their investment advice for insurance companies. They will understand the effect that behavioural biases have on their tactical asset allocation practices. This will act as a guide to them as they will get insights on what behaviours to avoid and how to prevent negative impacts of behavioural biases in investment process.

This study will act as a point of reference for the researches in the future once they assimilate the information that will be conveyed by the research. In particular, this study will guide future researchers on what aspects of behavioural biases to focus on in future studies and in what entities to study them because investment decisions are made both in securities markets and non-securities markets.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The chapter reviews the theories that will guide the research. The researcher reviews prior studies done on topic as well as pertinent theories and presents the conceptual framework for study variables. The researcher also summarizes the literature and presents critique of literature and gaps in research.

#### **2.2 Theoretical Review**

Overconfidence theory, human heuristics theory, behavioural portfolio theory and prospect theory will act as the basis for the conceptualizing that study variables are related.

##### **2.2.1 Overconfidence Theory**

Overconfidence theory was proposed by Daniel, Hirshleifer and Subrahmanyam in 1997. According to overconfidence theory, human beings are prone to overestimation of skills and ability to achieve success. This affects the accuracy of judgements and consequentially the rationality of investment decisions made (Odean, 1998). It has been established by psychologists that people are usually too confident and are prone to overestimating their forecasts' accuracy based on available information (Odean, 1998). The implication of overconfidence is that people undertake investments which results in returns which are not commensurate to the risks assumed. This means that there is irrationality in investment decision making. Scholars and researchers in psychology have noted that almost all people are overconfident in some way (Odean, 1998).

Overconfidence is predominant in all categories of professionals. People are prone to overconfidence in making decisions on asset allocation. In financial market this leads to form opinions about where the market is going on the basis of far too little information (Odean, 1998). Overconfidence theory is used in contextualizing the overconfidence bias variable. The theory recognizes that investors generally tend to be overoptimistic when allocating funds to various units of their portfolios. It is on the basis of this theory that the researcher hypothesized that overconfidence bias and self-

attribution bias affects tactical asset allocation in insurance companies in Mombasa town, Kenya.

### **2.2.2 Heuristics Theory**

The idea that individuals have issues in using classic probability rules in making decisions was introduced by Tversky and Kahneman (1971), in a famous publication describing the law of small numbers. The authors collected empirical evidence that, differently than what statistical theory suggests, individuals do not need to rely on very large samples to make inference on the nature of what they observe (Cruciani, 2017). The signals they receive, frequency of an outcome for instance, are factored in decision-making and combined with prior expectations, despite their accuracy or statistical validity (Cruciani, 2017). The implications of the law of small numbers and other misapplications of statistical rules are further addressed by Kahneman, Slovic and Tversky (1974), who explicitly address the way in which individuals make decisions in uncertain situations, looking at probability assessment and value prediction and formally introducing the concept of heuristics.

It is contended that people tend to use mental shortcuts when making decisions to allocate funds to various units of their investment portfolio, instead of gathering adequate information which is critical in decision making (Cruciani, 2017). Heuristics theory is the basis for contextualizing the representativeness bias variable. Cognitive psychologists recognize that heuristics that occur most frequently in the population and that can impair decision-making. Kahneman and Tversky and Slovic (1982) summarize the evidence on the representativeness heuristic. The heuristics theory was the basis for conceptualizing that representativeness bias affects tactical asset allocation in insurance companies in Mombasa town, Kenya.

### **2.2.3 Behavioural Portfolio Theory**

Shefrin and Statman (2000) proposed construction of investment portfolios based on a number of goals that they aim to achieve (Shefrin & Statman, 2000). A behavioral portfolio has a strong resemblance to a pyramid with layers that are distinct. Each layer has goals which are well defined. The base layer is devised in a manner that prevents financing disaster, whereas, the top layer is devised to attempt to ensure return

maximization, an attempt to provide a shot at becoming rich (Shefrin & Statman, 2007).

Portfolios in behavioural finance are formed in such a manner that each objective of the investor, assuming there is a layered pyramid, is on a different layer, and the allocation of funds to the portfolio therefore depends on the location of the objective. Such objectives as poverty alienation and hope for wealth could guide the portfolio construction process (Shefrin & Statman, 2007).

In real life, investors do not factor in the covariance between the layers in the pyramid. This therefore results in cases of poor portfolio diversification in investment process (Shefrin & Statman, 2000). This theory demonstrates how rather than hold well diversified portfolios, investors layer their portfolio according to goals such as require return, utility, access to information and regret aversion (Shefrin & Statman, 2000). This theory was the basis for conceptualizing that regret aversion bias and self-attribution bias affects tactical asset allocation in insurance companies in Mombasa town, Kenya.

#### **2.2.4 Prospect Theory**

Kahneman and Tversky (1979) developed this theory. According to prospect theory, decisions are made in accordance with the probable value of the investment gain and loss as opposed to the eventual outcome. In their model, the gain or loss from investment is what investors value, without regard to assets; and decision weight replaces probability (Heukelom, 2009). Prospect theory stresses that people's investment decisions are determined much by their aversion to losses as losses give result in more pain than the happiness for equivalent gains (Heukelom, 2009).

According to prospect theory, people are not rational when making investment decisions due to psychological influences. The propensity to hold poorly diversified portfolios can be interpreted in the light of the cumulative prospect theory (Polkovnichenko, 2005). According to this theory, the approach to risk changes depending on the probability of gains and losses; in particular, risk appetite increases with regard to high probable prospects whereas aversion prevails with regard to prospects with a very low probability of occurrence. Portfolio diversification eliminates the extreme and less probable events precluding also the chance, even if

very low, of making significant returns (Polkovnichenko, 2005). This theory was the basis for conceptualizing that regret aversion bias affects tactical asset allocation in insurance companies in Mombasa town, Kenya.

### **2.3 Determinants of Tactical Asset Allocation**

This section describes the factors that determine asset allocation namely; overconfidence bias, representativeness bias, SAB and RAB and other factors

#### **2.3.1 Overconfidence Bias**

In investment process, people are bound to overrate their value, opinion, beliefs or abilities (Moosa & Ramiah, 2017). People usually exhibit overconfidence and do not expect failure in most cases, hence they do not believe that outcomes of investment choices will be unfavourable. Miscalibration is a form of overconfidence. Overconfident investors are prone to knowledge overestimation, risk understatement and control ability exaggeration. In the investment process, overconfident investors tend to be too sure that they are able to identify the best investments that will lead to high returns in the market. Overconfidence may make people ignore the complexity of investment environment and thus make wrong forecasts especially regarding expected cash flows and returns. Overconfidence makes investors prone to the illusion of control on investments (Byrne & Utkus, 2013). Overconfidence bias affects the decisions on investments among Colombo Stock Exchange's investors (Kengatharan & Kengatharan, 2014). Overconfidence in making investment decisions is solely determined by years of experience as an investor. Overconfidence has positive effect on making of decisions on investments in the market for property in Plateau state, Nigeria (Usman, 2018).

#### **2.3.2 Representativeness Bias**

Investors are usually bound to estimate chance of occurrence of an event or outcome basing decisions on similarity with available data (Cruciani, 2017). Representativeness bias is a very pervasive heuristic governing probability assessment. When facing a risky situation, probabilities have to be inferred to evaluate which option is more likely. Through representativeness, the subjective evaluation of the probability of an event is determined by similarity (Cruciani, 2017). Investors' decisions in the Indian stock market get maximum influence from representative bias, followed by overconfidence,

cognitive dissonance and disposition effect (Kanojia, Singh & Goswami, 2018). There is an association between initial piece of information and investment decision. Depending on the information at hand, an investor may either buy or sell assets for financial gain and with regard to changes in the market. Beliefs on expected price movements also motivate buying and selling of assets (Waweru, Mwangi & Parkinson, 2014).

### **2.3.3 Self-Attribution Bias**

People usually view positive results as the outcome of their efforts and view unpleasant results as unfortunate. They believe that bad results happen due to misfortunes and do not link such to them. This means people will then ignore reasons for not attaining good results, which could provide avenues for improvement (Byrne & Utkus, 2013). This is because they tend to associate good result with their effort and bad results with factors that are external (Moosa & Ramiah, 2017). Self-serving self-attribution bias influences the making of investment decisions (Ghelichi, Nakhjavan & Gharehdaghi, 2016). Athur (2014) noted that individual investment decisions in Kenya are negatively and insignificantly related to self-attribution bias.

### **2.3.4 Regret Aversion Bias**

People usually make decisions while taking into account the emotional discomfort associated with the occurrence of an unfavourable result (Moosa & Ramiah, 2017). The decision maker takes into consideration the emotional discomfort associated with the occurrence of an unfavourable result (Cruciani, 2017). Anticipatory regret is mostly functional, leading to vigilant decision making. Thus, individuals feeling anticipatory regret will be more motivated to search for additional options or information concerning existing options and perform a more careful comparison of their options. In extreme cases, anticipatory regret can lead to dysfunctional procrastination and decision avoidance (Cruciani, 2017).

### **2.3.5 Other Factors Determining Tactical Asset Allocation**

The monetary policy stance in a country, which can be favourable or unfavourable, will affect investor decisions on whether to tactically allocate assets in the portfolio. The investor market sentiment which denotes the level of optimism or pessimism

regarding the returns to investment in the market also determines how investors will allocate assets (Hoang, 2016).

## **2.4 Empirical Review**

The part exposes important empirical research findings from pertinent literature on the effect of behavioural biases examined in this study on tactical asset allocation. Shikuku (2012) established that unit trusts' investment decisions in Kenya are affected by overconfidence. Unit trust managers usually have too much belief in themselves and also rely on what they have experienced regarding performance in the past hence anchoring bias is involved (Shikuku, 2012). However, this study did not focus on tactical asset allocation in insurance companies. Park, Gu, Kumar and Raghunathan (2010) established that confirmation bias and overconfidence are positively correlated in South Korea. It was noted that overconfidence results in investors having too much expectation on investment returns and frequent trading but with low returns. However, this study did not focus on tactical asset allocation in insurance companies. Moreover, the research was not done in Kenyan context.

Yosra and Boujelbene (2013) assessed the determinants of institutional investors behaviours in Tunisia. It was established that Tunisian investor tends to use past information to predict future security performance. There is a tendency to be overoptimistic regarding the chance that certain investment outcomes will be realized in future (Yosra & Boujelbene, 2013). However, this study did not focus on tactical asset allocation in insurance companies. Moreover, the study was not conducted in Kenya. According to Usman (2018), representativeness bias and investors' decisions in property market in Plateau State, Nigeria are related positively and significantly. The study concluded that representativeness bias in making investment decisions is solely determined by years of experience as an investor. However, this study did not focus on tactical asset allocation in insurance companies. Moreover, the study was not conducted in Kenya.

Antony (2009) results revealed that the psychology of the real estate investor in Kenya is fundamental in determination of prices in the market as well as fund allocation decisions. It was noted that that as regards strength of the bias effects in decision making, representativeness bias was the first followed by mental accounting and

herding effect respectively (Antony, 2009). However, this study did not focus on tactical asset allocation in insurance companies. Mahina, Muturi and Florence (2017) study findings indicate that self-attribution bias positively and significantly influences investment in Rwandan Stock Exchange. However, this study did not focus on tactical asset allocation in insurance companies. Moreover, the study was not conducted in Kenya.

Kafayat (2014) examined the effect of biases on investment decisions and noted that self-serving bias results in irrational investment decisions, implying that risk and return aspects of investment are not thoroughly evaluated. However, this study did not focus on tactical asset allocation in insurance companies. Lin (2010) established that regret positively and significantly influences the decisions of investors as regards fund allocation in various portfolio units in Malaysia. However, this study did not focus on tactical asset allocation in insurance companies. Moreover, the study was not conducted in Kenya.

Ghelichi, Nakhjavan and Gharehdaghi (2016) found out that being remorseful and regretting while making decisions on investment is predominant among investors. However, this study did not focus on tactical asset allocation in insurance companies. Kisaka (2015) established that increased fear of regret results in increased stock investment. The coefficient of determination was found to be 26.5% meaning the above factors accounted for this percent while other factors accounted for 73.5% of the NSE investors financial and investment decisions (Kisaka, 2015). However, this study did not focus on tactical asset allocation in insurance companies.

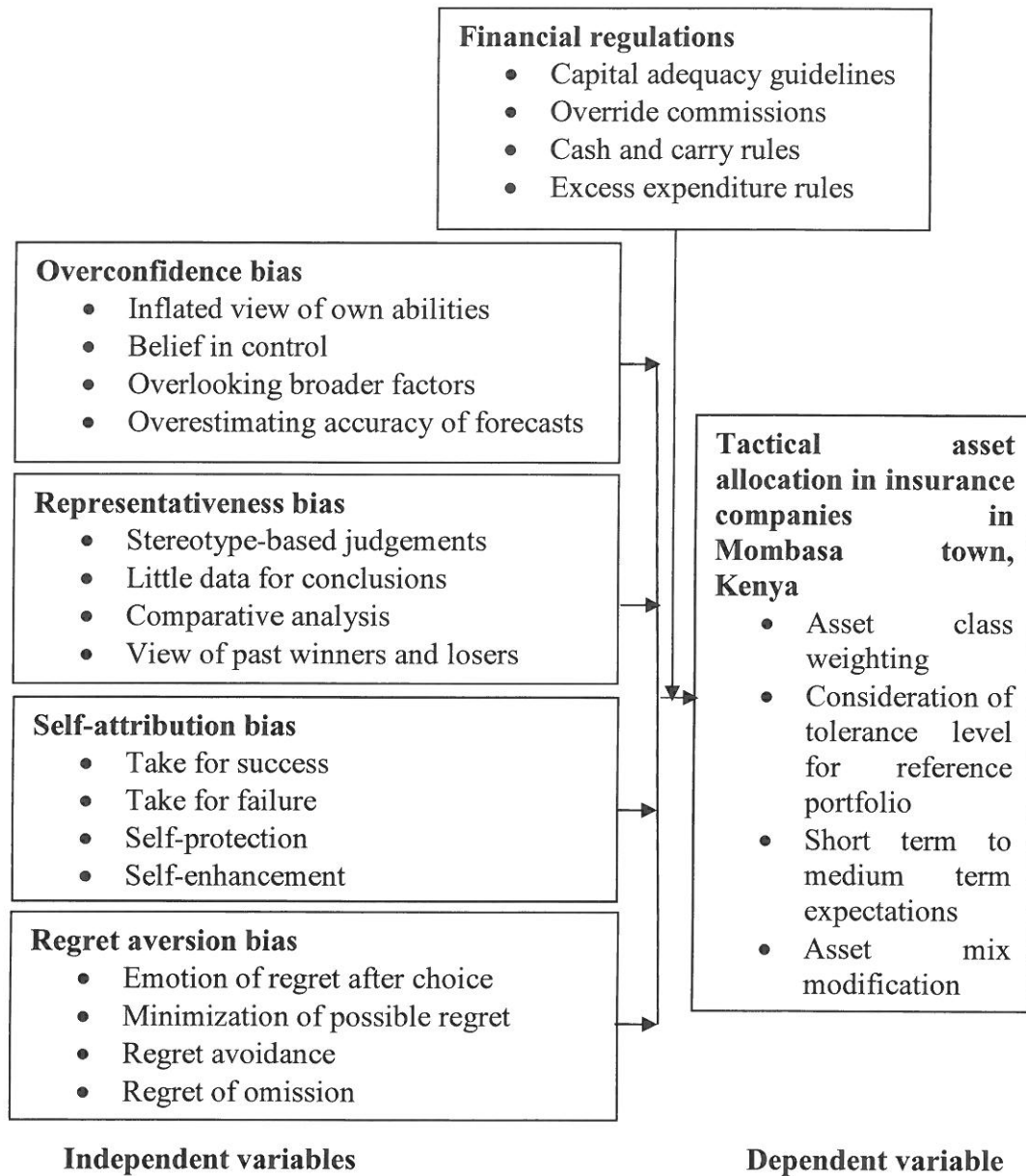
Mahina, Muturi and Memba (2017) established that over-optimism bias and stock investment are positively and linearly related, that is, investors suffer behavioral biases in the Rwanda stock market. However, this study did not focus on tactical asset allocation in insurance companies. Moreover, the study was not conducted in Kenya. Metwally and Darwish (2015) reveal significant evidence that overconfidence, self-attribution and investors' confidence ignites the momentum when the Egypt stock market demonstrates an upward trend. However, this study did not focus on tactical asset allocation in insurance companies. Moreover, the study was not conducted in Kenya.



Akinde, Peter and Ikpefan (2018) studied portfolio selection strategies and cognitive psychology biases in the Nigerian equity market. The findings from the analyses conducted confirmed a strong existence of cognitive psychology and mental biases in favor of the growth stocks in the Nigerian equity market. Investors had more belief in growth stocks than the value stocks notwithstanding the behavior of the market fundamentals (Akinde, Peter & Ikpefan, 2018). However, this study did not focus on tactical asset allocation in insurance companies. Moreover, the study was not conducted in Kenya. Waruingi (2011) found out that overconfidence bias affects individual investor choices at NSE (Waruingi, 2011). However, this study did not focus on tactical asset allocation in insurance companies.

## **2.5 Conceptual Framework**

The researcher shows diagrammatically the relationship between study constructs using the conceptual framework which usually developed based on theoretical and empirical review. The independent variable is presumed to be the cause of the changes and it influences the dependent variable (Mugenda & Mugenda, 2013). The independent variables were; overconfidence bias, representativeness bias, SAB and RAB. The dependent variable was tactical asset allocation in insurance companies in Mombasa town, Kenya. The moderating variable was financial regulations. It was hypothesized that behavioural biases affect tactical asset allocation in insurance companies in Mombasa town, Kenya as depicted in Figure 2.1.



**Figure 2.1: Conceptual Framework**

## 2.6 Summary of Literature Review and Research Gap

Overconfidence theory posits that an investor usually overrates one’s skills and ability to be successful. It was noted that overconfidence positively affects decisions regarding investments. Overconfidence results in investors having too much expectation on investment returns and frequent trading but with low returns. According to heuristics theory, individuals do not need to rely on very large samples to make inference on the nature of what they observe. It was established that the signals they

receive, frequency of an outcome for instance, are factored in decision-making and combined with prior expectations, despite their accuracy or statistical validity. It was determined that what individuals tend much more broadly to rely upon are simpler rules that require shorter time, both in terms of information collection and processing. It was noted that representativeness bias and investors' decision making are significantly and positively correlated. The researcher determined that there is an association between initial piece of information and investment decision.

The behavioral portfolio theory proposes construct investment portfolios based on a number of goals that they aim to achieve. This approach may lead to poor results being its main weakness the fact that it ignores covariance among layers. It was noted that self-serving bias lead to irrational investment decisions being made. It was noted that individual investor outcomes are negatively and insignificantly related to self-attribution bias. It was noted that the investment outcomes of individuals are negatively and insignificantly related to regret aversion bias. According to prospect theory, decisions are made in accordance with the probable value of the investment gain and loss as opposed to the eventual outcome. In their model, the gain or loss from investment is what investors value, without regard to assets; and decision weight replaces probability. Prospect theory stresses that people's investment decisions are determined much by their aversion to losses as losses give result in more pain than the happiness for equivalent gains. It was noted that self- attribution bias positively and significantly affects investment decisions. It was determined that, in extreme cases, anticipatory regret can lead to dysfunctional procrastination and decision avoidance.

It was revealed through literature review that most empirical studies have noted that indeed behavioural biases affect asset allocation decisions in enterprises. However, most studies did not focus on tactical asset allocation in insurance companies with particular focus on adjustment of long-term asset class mix weights, adjustment of sub-asset class mix weights, short term return forecasts and portfolio monitoring. It was revealed that little has been done on the effect of OCB, representativeness bias, SAB and RAB on tactical asset allocation in insurance companies. This was the study gap.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents discussions on step by step procedures that were followed based on the design of the research. The researcher also outlines the unit of analysis, as depicted in the sections showing population and sample design.

#### **3.2 Research Design**

The researcher adopted descriptive research design, which entails observation and description of subjects' behaviour with no manipulation at all. In this case, cross-sectional data will be used. It was preferred for expeditious access of information. Through this research plan, the researcher was able to describe the subjects' views meaningfully. The research design is generally considered suitable by social science researchers as it is easy to implement especially in studies involving surveying of respondents (Goertz & Mahoney, 2012).

#### **3.3 Population of the Study**

The target population was 102 employees of 34 insurance companies in Mombasa town, Kenya. The study targeted the manager, assistant manager and 1 finance employee of each insurance company in Mombasa town, Kenya. These were considered knowledgeable enough on matters pertaining to investments in their respective organizations. The list of insurance companies is shown in Appendix III (Mombasa County Government, 2018).

#### **3.4 Census Survey**

The researcher surveyed all the 102 employees of the insurance companies in Mombasa town, Kenya. This method was preferred as the researcher could easily manage to access the respondents as they are just within Mombasa town, Kenya. It was also manageable in terms of the financial costs involved (Kumar, 2014).

### **3.5 Data Collection**

#### **3.5.1 Data Collection Techniques**

The researcher used self-administered structured questionnaires to collect data. The method is preferred as it allowed the respondents provide data and then return the questionnaires in this study which involves many respondents. Questionnaires save time and are economical to administer. Questionnaires can elicit the best responses depending on how they are designed, structured and worded; which should be optimal in view of the knowledge and expertise of the respondents (Kumar, 2014).

#### **3.5.2 Validity and Reliability Tests**

A pre-study is relevant to enable the assessment of questionnaire's reliability and ensuring its validity. 10% of sample size is sufficient for piloting the research questionnaire (Kothari, 2004). Hence, a sample of 39 respondents from Kilifi town participated in pre-testing the research questionnaire. Piloting helps in revealing questions that are vague so that they are reviewed until they convey the same meaning to all the subjects (Saunders, Thornhill & Lewis, 2012). The research supervisor was consulted to ensure the research questionnaire was valid content-wise and face-wise. It is only when the research questionnaire is valid that the constructs of the study can be said to be correctly measured. Failure to ensure valid questionnaire implies that the researcher may ask questions addressed to different concepts other than the ones intended by the study (Saunders et al., 2012).

Cronbach's alpha coefficient (CAC) was used in evaluation of questionnaire's reliability, with a threshold of 0.7 used as the level of acceptance; though some statisticians accept a coefficient above 0.6 (Bryman & Bell, 2011). A reliable questionnaire consistently gives the same results if repeatedly administered on the same respondents over time. This implies that if you bring to a respondent the same questions between time intervals, he/she should be able to give the same responses. There should be high correlation, if not perfect, between previous and current scores on the questionnaires (Saunders, Thornhill & Lewis, 2012).

#### **3.5.3 Data Collection Procedures**

Firstly, the letter of introduction was gotten before conducting pilot study. After conducting the pilot study, permission to conduct field work was sought. The

researcher and research assistants enlightened the respondents regarding the study's significance before questionnaires were delivered to them. Afterwards, the research questionnaires were delivered and distributed in person to the participants and collected immediately once they were duly filled. Respondents who were not able to provide data were given a duration within which the questionnaires will be required to be filled up and follow ups were made.

### 3.6 Data Analysis

Due procedures were followed which started with processing. Data was then analysed. In the data processing stage, data was edited, coded and then entered into SPSS. The study employed both descriptive and inferential analysis. Frequencies, percentages, means and standard deviations constituted the descriptive statistics that was used by the researcher. Multiple regression analysis and Pearson product moment correlation comprised the inferential statistics for the study. The results of statistical analysis were presented in tables and graphs. The multiple regression model that was adopted is depicted in Equation 3.1.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon \dots \dots \dots \text{Equation 3.1}$$

Where;

**Y** represents portfolio diversification in insurance companies in Mombasa town, Kenya

**$\beta_0$**  represents the y-intercept

**$\beta_1, \beta_2, \beta_3$  and  $\beta_4$**  represent coefficients of OCB, representativeness bias, SAB and RAB respectively

**$X_1, X_2, X_3$  and  $X_4$**  represent the OCB, representativeness bias, SAB and RAB respectively

**$\epsilon$**  represent error term

The researcher also adopted the multiple regression model shown in Equation 3.4 for moderated regression analysis.

$$Y = \beta_0 + \beta_1 X_1 * Z + \beta_2 X_2 * Z + \beta_3 X_3 * Z + \beta_4 X_4 * Z + \epsilon \dots \dots \text{Equation 3.2}$$

Where;

**Y** represents portfolio diversification in insurance companies in Mombasa town, Kenya

$\beta_0$  represents the y-intercept

Z represents the moderating variable-financial regulations

$\beta_1, \beta_2, \beta_3$  and  $\beta_4$  represent coefficients of overconfidence bias, representativeness bias, SAB and RAB respectively

$X_1, X_2, X_3$  and  $X_4$  represent overconfidence bias, representativeness bias, SAB and RAB respectively

$\varepsilon$  represent error term

### 3.6.1 Operationalization of Variables

The researcher will use a 5-point Likert scale for variable measurement. These details are presented in Table 3.1.

**Table 3.1: Operationalization of Variables**

Notation	Variable	Operationalization
$X_1$	Overconfidence bias	Ordinal scale: Inflated view of own abilities, belief in control, overlooking broader factors, overestimating accuracy of forecasts
$X_2$	Representativeness bias	Ordinal scale: Stereotype-based judgements, little data for conclusions, comparative analysis, view of past winners and losers
$X_3$	Self-attribution bias	Ordinal scale: Linking successful outcomes to own actions, linking bad outcomes to external factors, self-protection, self-enhancement
$X_4$	Regret aversion bias	Ordinal scale: Emotion of regret after choice, minimization of possible regret, regret avoidance, regret of omission
$Y$	Tactical asset allocation	Ordinal scale: Asset class weighting, consideration of tolerance level for reference portfolio, short term to medium term expectations, asset mix modification
	Financial regulations	Ordinal scale: Capital adequacy guidelines, override commissions, cash and carry rules, excess expenditure rules

### 3.6.2 Diagnostic Tests

The assumptions of regression analysis need to be tested before fitting the model to the data. Linearity assumption which implies that a linear relationship between the set of predictors and the outcome variable, will be tested using residual plots and ANOVA test of linearity (Garson, 2012). Homoscedasticity implies that error terms have

constant variance, as can be depicted using residual plots. The normality of error terms denotes that they follow a normal probability distribution, which can be viewed using histograms and normal P-P plots (Garson, 2012). It is assumed that explanatory variables are not correlated, that is, there is no multicollinearity problem, implying that tolerance is not less than 0.1 or a variance inflation factor (VIF) is not greater than 10. The independence assumption implies that successive residuals should be independent. This assumption will be tested using Durbin-Watson statistic which ranges from 1.5 to 2.5 if there is no residual autocorrelation (Garson, 2012).

### **3.6.3 Tests of Significance**

The study will utilize the F-tests and t-tests of statistical significance. The F-test will be used in testing the significance of the overall model at 5% level of significance (Garson, 2012). The t-tests of statistical significance of each coefficient of the independent variables. In using the F-tests and the t-tests, the researcher will use a significance level of 5% as the basis of rejecting ( $p > 0.05$ ) or failure to reject ( $p < 0.05$ ) null hypothesis (Garson, 2012).



## CHAPTER FOUR

### RESEARCH FINDINGS AND ANALYSIS

#### 4.1 Introduction

In this chapter, the rate of response, respondent background information, descriptive analysis and inferential analysis results are outlined.

#### 4.2 Response Rate

A total of 102 questionnaires were administered out of which 97 were completely filled and given back to the researcher. The response rate, which was 95.1%, was excellent for analysis and reporting (Kothari & Garg, 2014). The analysis of questionnaire return is depicted in Table 4.1.

**Table 4.1: Response Rate**

	Frequency (FREQ)	Percent (PERC)
Questionnaires duly filled and returned	97	95.1
Questionnaires not returned	5	4.9
Total	102	100

#### 4.3 Reliability Test Results

The CAC was used to assess questionnaire's reliability as revealed in Table 4.2.

**Table 4.2: Reliability of the Research Questionnaire**

Constructs	Cronbach's Alpha	Test Items
Overconfidence bias	0.776	4
Representativeness bias	0.885	4
Self-attribution bias	0.854	4
Regret aversion bias	0.774	4
Financial regulations	0.897	4
Tactical asset allocation in insurance companies in Mombasa town, Kenya	0.818	4

The results indicated that financial regulations had the highest coefficient (0.897). It was noted that representativeness bias had the second highest coefficient (0.885). Self-attribution bias had the third highest coefficient (0.854). The study established that

tactical asset allocation in insurance companies in Mombasa town, Kenya had the third lowest coefficient (0.818). It was found out that overconfidence bias had the second lowest coefficient (0.776). It was also noted that regret aversion bias had the lowest coefficient (0.774). This implies that the research questionnaire was reliable as variables had CAC higher than 0.7.

#### 4.4 Background Information

The study sought respondent background information. This included gender, age, educational level, category of business and time the businesses had been in operation.

##### 4.4.1 Distribution of Respondents by Gender

This study also examined how the respondents were distributed according to their gender as outlined in Table 4.3.

**Table 4.3: Distribution of Respondents by Gender**

<b>Gender of respondent</b>	<b>FREQ</b>	<b>PER</b>
Female	55	56.7
Male	42	43.3
Total	97	100.0

It was established that 55 (56.7%) respondents were female while 42 (43.3%) were male.

##### 4.4.2 Distribution of Respondents by Age

The results of age category distribution analysis are shown in Table 4.4.

**Table 4.4: Distribution of Respondents by Age**

<b>Age bracket</b>	<b>Frequency</b>	<b>Percent</b>
31 to 40 years	43	44.3
20 to 30 years	27	27.8
41 to 50 years	27	27.8
Total	97	100.0

It was found out that 43 (44.3%) respondents were in the age bracket of 31 to 40 years. 27 (27.8%) of them were in the age brackets of 20 to 30 years and 41 to 50 years.

#### 4.4.3 Distribution of Respondents by Educational Level

The study further sought to ascertain the highest academic qualifications of respondents. These results are shown in Table 4.5.

**Table 4.5: Highest Educational Level of Respondents**

<b>Educational Level</b>	<b>Frequency</b>	<b>Percent</b>
Graduate	78	80.4
Post secondary	13	13.4
Post graduate	6	6.2
Total	97	100.0

It was found out that 78 (53.7%) respondents were graduates while 6(6.2%) were post graduates. It was also found out that 13 (13.4%) of them were post secondary graduates.

#### 4.4.4 Distribution of Respondents by Category of Insurance Business

The analysis on category of insurance business distributed is presented in Table 4.6.

**Table 4.6: Category of Insurance Business**

<b>Time</b>	<b>Frequency</b>	<b>Percent</b>
General insurance	60	61.9
Reinsurance	17	17.5
Long-term insurance	12	12.4
General and long-term insurance	8	8.2
Total	97	100.0

The study noted that 60 (61.9%) respondents worked in general insurance business. 17 (17.5%) respondents worked in reinsurance business. 12 (12.4%) respondents worked in long-term insurance business. 8 (8.2%) respondents worked in general and long-term insurance business.

#### 4.4.5 Distribution of Respondents by Period of Time in Business Operation in Mombasa Town

The analysis of period of time in business operation in Mombasa Town is outlined in Table 4.7.

**Table 4.7: Period of Time in Business Operation in Mombasa Town**

<b>Time</b>	<b>Frequency</b>	<b>Percent</b>
Over years	60	61.9
6 to 10 years	30	30.9
3 to 6 years	4	4.1
1 to 3 years	3	3.1
Total	97	100.0

The researcher found out that 56 (41.2%) respondents had been in insurance business in their organizations for over 10 years, in Mombasa town. 30 (30.9%) respondents had been in insurance business in their organizations for between 6 to 10 years, in Mombasa town. 4 (4.1%) respondents had been in insurance business in their organizations for between 3 to 6 years, in Mombasa town. 3 (3.1%) respondents had been in insurance business in their organizations for between 1 to 3 years, in Mombasa town.

#### **4.5 Descriptive Analysis**

The researcher also sought the opinions of respondents on overconfidence, representativeness, self-attribution and regret aversion biases as well as financial regulations and tactical asset allocation in insurance companies in Mombasa town, Kenya. Descriptive statistics (DS) namely; the frequencies (Freq.) and percentages (Perc.), means and standard deviations (STDV) for each response were recorded.

##### **4.5.1 Overconfidence Bias**

The study sought the opinion of respondents on overconfidence bias as shown in Table 4.8.

**Table 4.8: DS for Overconfidence Bias**

		<b>Total</b>	<b>SDS</b>	<b>DS</b>	<b>NT</b>	<b>AG</b>	<b>SAG</b>	<b>MN</b>	<b>STDV</b>
It is possible to beat all competitors in the market once strategies have	Freq.	97	1	7	26	27	36	3.93	1.013
	Perc.	100	1.0	7.2	26.8	27.8	37.1		

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been set by the business									
All relevant factors	Freq.	97	2	5	19	51	20	3.85	.882
that may impede	Perc.	100	2.1	5.2	19.6	52.6	20.6		
achievement of investment risk and return objectives can be examined and overcome									
Once particular	Freq.	97	0	0	19	44	34	4.15	.727
factors relevant to	Perc.	100	0.0	0.0	19.6	45.4	35.1		
the success of the enterprise are considered, energy is directed to those specific factors									
It is possible to	Freq.	97	0	0	7	43	47	4.41	.625
have minimal	Perc.	100	0.0	0.0	7.2	44.3	48.5		
deviation from revenue, expenditure and risk forecasts made as regards enterprise investments									

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The study found out that 8 (8.2%) respondents disagreed that it is possible to be over and above all market competitors given business strategies set. 63 (64.9%) respondents agreed that it is possible to be over and above all market competitors given business strategies set. It was generally agreed that it is possible to be over and above all market competitors given business strategies set (mean = 3.93; STDV = 1.013). It was established that 7 (7.3%) respondents disagreed that all relevant factors that may impede achievement of investment risk and return objectives can be examined and

overcome. 71 (73.2%) respondents agreed that all relevant factors that may impede achievement of investment risk and return objectives can be examined and overcome. There was consent that all relevant factors that may impede achievement of investment risk and return objectives can be examined and overcome (mean = 3.85; STDV = 0.882).

The researcher noted that no respondent disagreed that once particular factors relevant to the success of the enterprise are considered, energy is directed to those specific factors. 78 (80.5%) respondents agreed that once particular factors relevant to the success of the enterprise are considered, energy is directed to those specific factors. The researcher established that there was general agreement that once particular factors relevant to the success of the enterprise are considered, energy is directed to those specific factors (mean = 4.15; STDV = 0.727). It was noted that no respondent disagreed that it is possible to have minimal deviation from revenue, expenditure and risk forecasts made as regards enterprise investments. 90 (92.8%) respondents agreed that it is possible to have minimal deviation from revenue, expenditure and risk forecasts made as regards enterprise investments. There was general agreement that it is possible to have minimal deviation from revenue, expenditure and risk forecasts made as regards enterprise investments (mean = 4.41; STDV = 0.625).

#### 4.5.2 Representativeness Bias

The researcher also examined the opinion of respondents on representativeness bias as revealed in Table 4.9.

**Table 4.9: DS for Representativeness Bias**

		Total	SDS	DS	NT	AG	SAG	MN	STDV
Funds are usually allocated to investments with major focus on their current returns and past returns to guide decision process	Freq.	97	0	1	23	36	37	4.12	.807
	Perc.	100	0.0	1.0	23.7	37.1	38.1		

Once it is believed	Freq.	97	0	1	27	36	33	4.04	.815
that an investment	Perc.	100	0.0	1.0	27.8	37.1	34.0		
is worth based on									
available									
information, funds									
are allocated									
without much									
worry and very									
detailed analysis									
Potential	Freq.	97	1	2	19	43	32	4.06	.839
investments are	Perc.	100	1.0	2.1	19.6	44.3	33.0		
usually compared									
with current and									
past investments so									
that if they are									
almost similar,									
there is less worry									
to invest									
More investments	Freq.	97	0	1	15	38	43	4.26	.794
are usually made	Perc.	100	0.0	1.0	15.5	39.2	44.3		
after examining the									
success of past									
investments made									
by the insurance									
company									

The study determined that 1 (1.0%) respondent disagreed that funds are usually allocated to investments with major focus on their current returns and past returns to guide decision process. 73 (75.2%) respondents agreed that funds are usually allocated to investments with major focus on their current returns and past returns to guide decision process. It was consented that funds are usually allocated to investments with major focus on their current returns and past returns to guide decision process (mean = 4.12; STDV = 0.807). It was established that 1 (1.0%) respondent disagreed that

once it is believed that an investment is worth based on available information, funds are allocated without much worry and very detailed analysis. 69 (71.1%) respondents agreed that once it is believed that an investment is worth based on available information, funds are allocated without much worry and very detailed analysis. It was generally agreed that once it is believed that an investment is worth based on available information, funds are allocated without much worry and very detailed analysis (mean = 4.04; STDV = 0.815).

The researcher noted that 3 (3.1%) respondents disagreed that potential investments are usually compared with current and past investments so that if they are almost similar, there is less worry to invest. 75 (77.3%) respondents agreed that potential investments are usually compared with current and past investments so that if they are almost similar, there is less worry to invest. There was general agreement that potential investments are usually compared with current and past investments so that if they are almost similar, there is less worry to invest (mean = 4.06; STDV = 0.839). It was noted that 1 (1.0%) respondent disagreed that more investments are usually made after examining the success of past investments made by the insurance company. 81 (83.5%) respondents agreed that more investments are usually made after examining the success of past investments made by the insurance company. It was consented that more investments are usually made after examining the success of past investments made by the insurance company (mean = 4.26; STDV = 0.794).

#### 4.5.3 Self-attribution Bias

The researcher analysed the views of respondents on self-attribution bias as revealed in Table 4.10.

**Table 4.10: DS for Self-attribution Bias**

				Total	SDS	DS	NT	AG	SAG	MN	STDV
Once	effort	is	Freq.	97	2	7	15	47	26	3.91	.947
directed		to	Perc.	100	2.1	7.2	15.5	48.5	26.8		
achieving											
investment											
objectives,											



chances of success are high										
At times, the enterprise performance objectives are not achieved mostly due to factors outside the firm	Freq.	97	1	1	17	44	34	4.12	.807	
	Perc.	100	1.0	1.0	17.5	45.4	35.1			
It is expected that investment performance will always be positive as desired	Freq.	97	4	16	29	21	27	3.53	1.182	
	Perc.	100	4.1	16.5	29.9	21.6	27.8			
It is usually grateful when the enterprise is viewed as successful by interested parties	Freq.	97	1	1	24	32	39	4.10	.884	
	Perc.	100	1.0	1.0	24.7	33.0	40.2			

The study found out that 9 (9.3%) respondents disagreed that once effort is directed to achieving objectives of investment, it is highly likely that success will be attained. 73 (75.3%) respondents agreed that once effort is directed to achieving objectives of investment, it is highly likely that success will be attained. It was generally agreed that once effort is directed to achieving objectives of investment, it is highly likely that success will be attained (mean = 3.91; STDV = 0.947). The findings indicate that 2 (2.0%) respondents disagreed that at times, the enterprise performance objectives are not achieved mostly due to factors outside the firm. 78 (80.5%) respondents agreed that at times, the enterprise performance objectives are not achieved mostly due to factors outside the firm. There was consent that at times, the enterprise performance objectives are not achieved mostly due to factors outside the firm (mean = 4.12; STDV = 0.807).

The researcher noted that 20 (20.6%) respondents disagreed that it is expected that investment performance will always be positive as desired. 48 (49.4%) respondents agreed that it is expected that investment performance will always be positive as desired. The researcher established that there was general agreement that it is expected that investment performance will always be positive as desired (mean = 3.53; STDV = 1.182). It was established that 2 (2.0%) respondents disagreed that it is usually grateful when the enterprise is viewed as successful by interested parties. 71 (73.2%) respondents agreed that it is usually grateful when the enterprise is viewed as successful by interested parties. There was consent that it is usually grateful when the enterprise is viewed as successful by interested parties (mean = 4.10; STDV = 0.884).

#### 4.5.4 Regret Aversion Bias

The study also analysed the views of respondents on regret aversion bias as depicted in Table 4.11.

**Table 4.11: DS for Regret Aversion Bias**

		Total	SDS	DS	NT	AG	SAG	MN	STDV
It is painful if wrong investment choices are made based on initial beliefs and investments analysis	Freq.	97	2	12	15	40	28	3.82	1.051
	Perc.	100	2.1	12.4	15.5	41.2	28.9		
When making fund allocations for investments, it is aimed that possible regret is minimal	Freq.	97	3	6	8	40	40	4.11	1.009
	Perc.	100	3.1	6.2	8.2	41.2	41.2		
It is preferred that risky investment alternatives are	Freq.	97	0	1	24	34	38	4.12	.820
	Perc.	100	0.0	1.0	24.7	35.1	39.2		

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not implemented										
when there is										
uncertainty and										
instability in the										
business										
environment										
It is painful when	Freq.	97	1	1	3	32	60	4.54	.708	
more profitable	Perc.	100	1.0	1.0	3.1	33.0	61.9			
investments that										
should have										
initially been										
undertaken are not										
implemented										

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The findings indicate that 14 (14.5%) respondents disagreed that it is painful if wrong investment choices are made based on initial beliefs and investments analysis. 68 (70.1%) respondents agreed that it is painful if wrong investment choices are made based on initial beliefs and investments analysis. It was generally agreed that it is painful if wrong investment choices are made based on initial beliefs and investments analysis (mean = 3.82; STDV = 1.051). It was established that 9 (9.3%) respondents disagreed that when making fund allocations for investments, it is aimed that possible regret is minimal. 80 (82.4%) respondents agreed that when making fund allocations for investments, it is aimed that possible regret is minimal. There was general consent that when making fund allocations for investments, it is aimed that possible regret is minimal (mean = 4.11; STDV = 1.009).

The study found out that 1 (1.0%) respondent disagreed that it is preferred that risky investment alternatives are not implemented when there is uncertainty and instability in the business environment. 72 (74.3%) respondents agreed that it is preferred that risky investment alternatives are not implemented when the environment of business is uncertain and unstable. There was general agreement that it is preferred that risky investment alternatives are not implemented when the environment of business is uncertain and unstable (mean = 4.12; STDV = 0.820). It was established that 2 (2.0%) respondents disagreed that it is painful when more profitable investments that should

have initially been undertaken are not implemented. 92 (94.9%) respondents agreed that it is painful when more profitable investments that should have initially been undertaken are not implemented. It was generally agreed that it is painful when more profitable investments that should have initially been undertaken are not implemented (mean = 4.54; STDV = 0.708).

#### 4.5.5 Financial Regulations

The study also analysed the views of respondents on financial regulations as revealed in Table 4.12.

**Table 4.12: DS for Financial Regulations**

			Total	SDS	DS	NT	AG	SAG	MN	STDV
The organization monitors margins on adequacy of capital and ensures adherence to the recommended ratios	Freq.		97	1	1	4	60	31	4.23	0.669
	Perc.	the	100	1.0	1.0	4.1	61.9	31.9		
The organization ensures that commissions paid are within the recommended limits by regulations	Freq.		97	1	4	7	35	50	4.33	.863
	Perc.	that	100	1.0	4.1	7.2	36.1	51.5		
The organization ensures upfront payment of premiums upon issue of cover	Freq.		97	4	3	5	35	50	4.28	.997
	Perc.	upfront	100	4.1	3.1	5.2	36.1	51.5		
The management expenses of the organization each	Freq.		97	3	4	9	25	56	4.31	1.014
	Perc.	of the organization each	100	3.1	4.1	9.3	25.8	57.7		

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financial year are  
within  
recommended limits

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The researcher found out that 2 (2.0%) respondents disagreed that the organization monitors the margins on adequacy of capital and ensures adherence to the recommended ratios. 91 (93.8%) respondents concurred that the organization monitors the margins on adequacy of capital and ensures adherence to the recommended ratios. The respondents generally consented that the organization monitors the margins on adequacy of capital and ensures adherence to the recommended ratios (mean = 4.23; STDV = 0.669). The study determined that 5 (5.1%) respondents disagreed that the organization ensures that commissions paid are within the recommended limits by regulations. 85 (87.6%) respondents agreed that the organization ensures that commissions paid are within the recommended limits by regulations. It was generally agreed that the organization ensures that commissions paid are within the recommended limits by regulations (mean = 4.33; STDV = 0.863).

The study determined that 7 (7.2%) respondents disagreed that the organization ensures upfront payment of premiums upon issue of cover. 85 (87.6%) respondents agreed that the organization ensures upfront payment of premiums upon issue of cover. It was consented that the organization ensures upfront payment of premiums upon issue of cover (mean = 4.28; STDV = 0.997). It was noted that 7 (7.2%) respondents disagreed that the management expenses of the organization each financial year are within recommended limits. 81 (83.5%) respondents agreed that the management expenses of the organization each financial year are within recommended limits. The researcher established that there was general agreement that the management expenses of the organization each financial year are within recommended limits (mean = 4.31; STDV = 1.014).

#### **4.5.6 Tactical Asset Allocation in Insurance Companies in Mombasa Town, Kenya**

The study also analysed the views of respondents on tactical asset allocation in insurance companies in Mombasa town, Kenya as shown in Table 4.13.

**Table 4.13: DS for Tactical Asset Allocation in Insurance Companies in Mombasa Town, Kenya**

			Total	SDS	DS	NT	AG	SAG	MN	STDV
The investments are made for various kinds of assets based on proportions deemed fit for each class of assets	Freq.	97	0	0	5	53	39	4.35	.578	
	Perc.	100	0.0	0.0	5.2	54.6	40.2			
The insurance company always considers the ability and willingness to take risk whenever short-term changes are made to proportions of funds initially allocated in enterprise investments	Freq.	97	0	7	27	27	36	3.95	.972	
	Perc.	100	0.0	7.2	27.8	27.8	37.1			
The insurance company usually sets short to medium term investment expectations as regards returns and ensures that they are achieved	Freq.	97	0	1	13	45	38	4.24	.718	
	Perc.	100	0.0	1.0	13.4	46.4	39.2			

The asset structure of the insurance company is usually reviewed in order to take advantage of short to medium term opportunities which are profitable	Freq.	97	0	2	15	31	49	4.31	0.808
	Perc.	100	0.0	2.1	15.5	31.9	50.5		

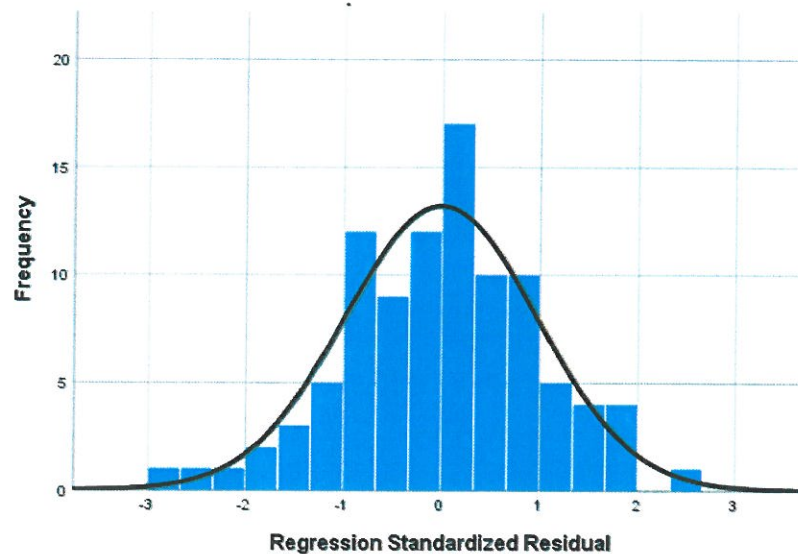
The study found out that no respondents disagreed that the investments are made for various kinds of assets based on proportions deemed fit for each class of assets. 92 (94.8%) respondents agreed that the investments are made for various kinds of assets based on proportions deemed fit for each class of assets. There was general agreement that the investments are made for various kinds of assets based on proportions deemed fit for each class of assets (mean = 4.35; STDV = 0.578). It was noted that 7 (7.2%) respondents disagreed that the insurance company always considers the ability and willingness to take risk whenever short-term changes are made to proportions of funds initially allocated in enterprise investments. 63 (64.9%) respondents agreed that the insurance company always considers the ability and willingness to take risk whenever short-term changes are made to proportions of funds initially allocated in enterprise investments. It was generally agreed that the insurance company always considers the ability and willingness to take risk whenever short-term changes are made to proportions of funds initially allocated in enterprise investments (mean = 3.95; STDV = 0.972).

The researcher noted that 1 (1.0%) respondents disagreed that the insurance company usually sets short to medium term investment expectations as regards returns and ensures that they are achieved. 83 (85.6%) respondents agreed that the insurance company usually sets short to medium term investment expectations as regards returns and ensures that they are achieved. The researcher established that there was general agreement that the insurance company usually sets short to medium term investment expectations as regards returns and ensures that they are achieved (mean = 4.24; STDV = 0.718). The study determined that 2 (2.1%) respondents disagreed that the asset

structure of the insurance company is usually reviewed in order to exploit opportunities which are profitable. 80 (82.4%) respondents were in agreement that the asset structure of the insurance company is usually reviewed in order to exploit opportunities which are profitable. There was general agreement that the asset structure of the insurance company is usually reviewed in order to take advantage of short to medium term opportunities which are profitable (mean = 4.31; STDV = 0.808).

#### 4.6 Diagnostic Tests

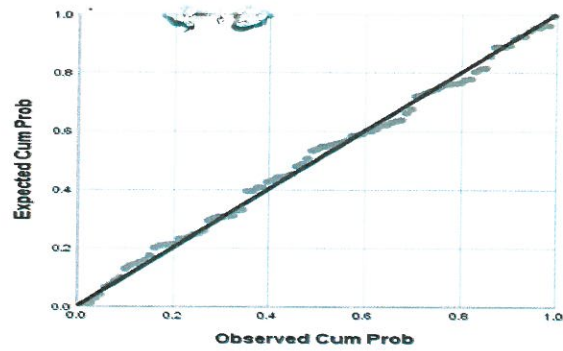
The researcher also established whether the multiple regression model adopted fits the data by establishing whether multiple regression model assumptions were met. The researcher tested whether the assumption of normality was met using the histogram. The results are depicted in Figure 4.1.



**Figure 4.1: Histogram**

The findings indicate that the histogram of regression standardized residual depicts an approximately normal curve. This implies that the assumption of normality was met (Garson, 2012). The normal P-P (NPP) plot was also used to test for normality as depicted in Figure 4.2.

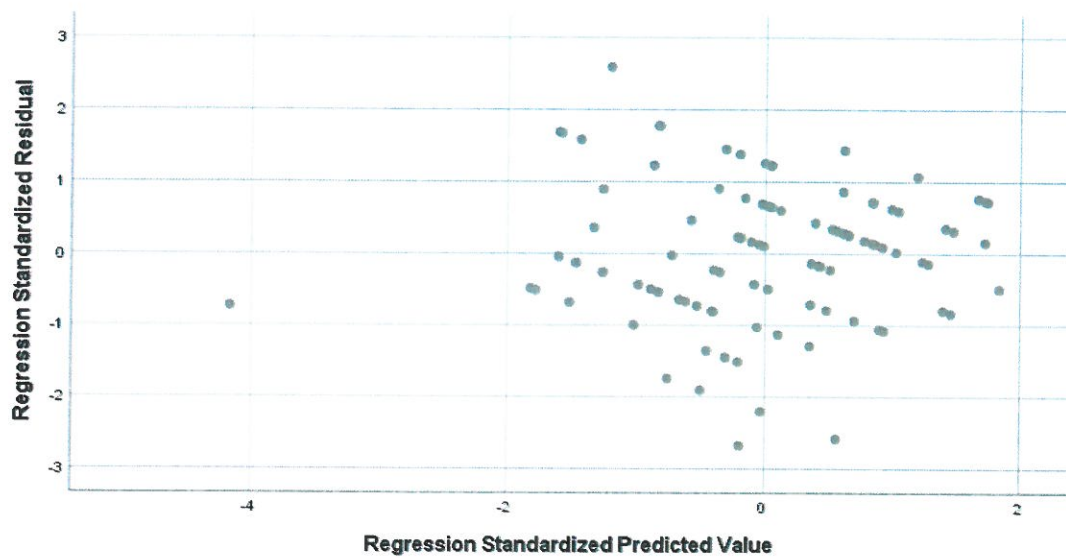




**Figure 4.2: Normal P-P Plot**

The findings indicate that residuals plot is approximately along the straight line in the NPP plot in Figure 4.1. This implies that the assumption of normality was met (Garson, 2012).

The researcher also assessed whether the assumption of linearity and homoscedasticity was met using residual plots as shown in Figure 4.3.



**Figure 4.3: Residual Plots**

It was revealed that the residuals are clustered around zero from the left to the right across various values of the predicted value. This implies that the linearity assumption was met. The residual plots are also approximately cloudy with no pattern implying that the assumption of homoscedasticity was met (Garson, 2012).

The researcher examined whether the assumption of no multicollinearity was met using variance inflation factor (VIF) and tolerance. The results are shown in Table 4.14.

**Table 4.14: Collinearity Statistics**

	<b>Tolerance</b>	<b>VIF</b>
Overconfidence bias	.829	1.207
Representativeness bias	.876	1.142
Self-attribution bias	.652	1.535
Regret aversion bias	.733	1.363

The findings indicate that overconfidence bias had a VIF of 1.207 and tolerance of 0.829. Representativeness bias had a VIF of 1.142 and tolerance of 0.876. Self-attribution bias had a VIF of 1.535 and tolerance of 0.652. Regret aversion bias had a VIF of 1.363 and tolerance of 0.733. The findings imply that there was no serious multicollinearity problems as all independent variables had tolerance greater than 0.2 and VIF less than 5 (Garson, 2012).

The researcher also ascertained whether there was autocorrelation among residuals. The results are depicted in Table 4.15.

**Table 4.15: Residual Autocorrelation Statistics**

<b>R</b>	<b>R Square</b>	<b>R Square Change</b>	<b>F Change</b>	<b>df1</b>	<b>df2</b>	<b>Sig. Change</b>	<b>F</b>	<b>Durbin-Watson</b>
.545a	.297	.267	9.725	4	92	.000		1.727

The findings indicate that the Durbin- Watson statistic was 1.727. This implies that the assumption of independence was met as the value is within the acceptable range of 1.5 to 2.5 (Garson, 2012).

#### **4.7 Correlation Analysis**

The results of Pearson correlation (PC) analysis re depicted in Table 4.16.

**Table 4.16: Correlation Analysis Results**

		<b>Tactical asset allocation in insurance companies in Mombasa town, Kenya</b>
Overconfidence bias	PC	.448
	Significance level (SL)	.000
Representativeness bias	PC	.155
	SL	.129
Self-attribution bias	Pearson Correlation	.397
	SL	.000
Regret aversion bias	Pearson Correlation	.386
	SL	.000

It was found out that there is a weak positive and significant relationship between overconfidence bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $r = 0.448$ ;  $p < 0.05$ ). Therefore, increased overconfidence bias is associated with enhanced tactical asset allocation in insurance companies in Mombasa town, Kenya and vice-versa.

It was found out that there is a weak positive and insignificant relationship between representativeness bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $r = 0.155$ ;  $p > 0.05$ ). It is implied that increased representativeness bias is associated with increased tactical asset allocation in insurance companies in Mombasa town, Kenya and vice-versa, though insignificantly.

It was found out that there is a weak positive and significant relationship between self-attribution bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $r = 0.397$ ;  $p > 0.05$ ). The implication is that increased self-attribution bias is associated with enhanced tactical asset allocation in insurance companies in Mombasa town, Kenya and vice-versa.

It was found out that there is a weak positive and significant relationship between regret aversion bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $r = 0.386$ ;  $p < 0.05$ ). This has the implication that increased regret aversion bias is associated with enhanced tactical asset allocation in insurance companies in Mombasa town, Kenya and vice-versa.

#### 4.8 Multiple Regression Analysis

The study conducted regression analysis with and without the moderator in order to examine the moderating effect of financial regulations on the relationship between behavioural biases and tactical asset allocation in insurance companies in Mombasa town, Kenya.

##### 4.8.1 Testing for Moderating Effects of Financial Regulations

The study conducted regression analysis for each independent variable and the dependent variable with and without the moderator. This was necessary to compare the results and detect any moderating effects of financial regulations. The analysis was first conducted based on uncentered interaction in order to determine the variance explained by each predictor with and without interaction effects. The researcher then conducted regression analysis based on centred terms in order to examine the moderating effect of financial regulations on the relationship between each independent variable and the dependent variable.

The researcher examined the variance of TAA that can be explained by overconfidence bias with and without the moderator as shown in Table 4.17.

**Table 4.17: Significance of the Interaction Term for Overconfidence Bias**

Model	R	R Square ( $R^2$ )	Adjusted R Square ( $AR^2$ )	Change Statistics				
				R Square Change ( $R^2C$ )	F Change (FC)	df 1	df 2	Sig. F Change (SFC)
1	.448a	.201	.193	.201	23.906	1	95	.000
2	.501	.251	.236	.050	6.335	1	94	.014

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b

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a. Predictor:  $\beta_0$ , Overconfidence bias

b. Predictor:  $\beta_0$ , Overconfidence bias,  $X_1$ \*financial regulations

c. Dependent Variable: Tactical asset allocation

The findings in Model 1 indicate that there is a weak positive and significant relationship between OCB and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $R = 0.448$ ;  $p < 0.05$ ). The findings indicate that 20.1% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya can be explained by overconfidence bias ( $R^2 = 0.201$ ). The findings in Model 2 indicate that overconfidence bias together with the interaction of overconfidence bias and financial regulations has moderately strong positive relationship with tactical asset allocation in insurance companies in Mombasa town, Kenya ( $R = 0.501$ ). The findings indicate that 5% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya can be explained by the interaction of overconfidence bias and financial regulations over and above the variance explained by overconfidence bias ( $R^2$  change = 0.05). In Model 2, it is also shown that there is a potentially significant moderation between overconfidence bias and financial regulations on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $p < 0.05$ ).

The researcher therefore tested for moderating effect of financial regulations using centred regression terms. This was done using Process version 3.3 software in SPSS 25 as outlined in Table 4.18.

**Table 4.18: Moderating Effect for Overconfidence Bias**

	$\beta$	STDV. Error	t	Sig
(Constant)	4.2228	0.0445	94.9297	.0000
Overconfidence bias	.4087	0.0774	5.2797	.0000
Financial regulations	0.1373	0.0776	1.7689	.0802
Overconfidence bias * Financial regulations	-.1812	0.0776	-2.3353	.0217

The findings indicate that interaction of overconfidence bias and financial regulations has negative significant effect on tactical asset allocation in insurance companies in

Mombasa town, Kenya ( $t = -2.3353$ ;  $p < 0.05$ ). This implies that increasing financial regulations has a buffering effect on the relationship between overconfidence bias and tactical asset allocation in insurance companies in Mombasa town, Kenya. It is shown that overconfidence bias has positive significant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = 5.2797$ ;  $p < 0.05$ ). Financial regulations has positive but insignificant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = 1.7689$ ;  $p > 0.05$ ). It is implied that complete moderation has not occurred as both overconfidence bias and financial regulations are not insignificant with the interaction of overconfidence bias and financial regulations added to the model. Given that both the interaction term and the  $R^2$  change are significant, it is implied that financial regulations negatively and significantly moderates the relationship between OCB and tactical asset allocation in insurance companies in Mombasa town, Kenya.

The researcher examined the variance of tactical asset allocation that can be explained by representativeness bias with and without the moderator as revealed in Table 4.19.

**Table 4.19: Significance of the Interaction Term for Representativeness Bias**

Model	R	$R^2$	$AR^2$	Change Statistics				
				$R^2C$	FC	df1	df2	SFC
1	.155a	.024	.014	.024	2.339	1	95	.129
2	.332b	.110	.091	.086	9.106	1	94	.003

a. Predictors: (Constant), Representativeness bias

b. Predictors: (Constant), Representativeness bias,  $X_2$ \*financial regulations

c. Dependent Variable: Tactical asset allocation

The findings in Model 1 indicate that there is a weak positive and insignificant relationship between representativeness bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $R = 0.155$ ;  $p > 0.05$ ). The findings indicate that 2.4% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya can be explained by representativeness bias ( $R^2 = 0.024$ ). The findings in Model 2 indicate that representativeness bias together with the interaction of representativeness bias and financial regulations has weak positive relationship with tactical asset allocation in insurance companies in Mombasa town, Kenya ( $R = 0.332$ ).

The findings indicate that 8.6% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya is accounted for by interaction of RB and financial regulations over and above the variance explained by overconfidence bias ( $R^2$  change = 0.086). In Model 2, it is also shown that there is a potentially significant moderation between RB and financial regulations on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $p < 0.05$ ).

The researcher therefore tested for moderating effect of financial regulations using centred regression terms. This was done using Process version 3.3 software in SPSS 25 as depicted in Table 4.20.

**Table 4.20: Moderating Effect for Representativeness Bias**

	$\beta$	STDV. Error	t	Sig
(Constant)	4.2120	.0474	88.8888	.0000
Representativeness bias	.0934	.0916	1.0199	.3104
Financial regulations	.2499	.0863	2.8959	.0047
Representativeness bias * Financial regulations	-.0390	.0478	.4165	.4165

The findings indicate that interaction of representativeness bias and financial regulations has negative insignificant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = -.0390$ ;  $p > 0.05$ ). This implies that increasing financial regulations has an insignificant buffering effect on the relationship between overconfidence bias and tactical asset allocation in insurance companies in Mombasa town, Kenya. It is shown that representativeness bias has positive insignificant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = 1.0199$ ;  $p > 0.05$ ). Financial regulations has positive significant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = 2.8959$ ;  $p < 0.05$ ). It is implied that complete moderation has not occurred as both representativeness bias and financial regulations are not insignificant with the interaction of overconfidence bias and financial regulations added to the model. Given that the interaction term is insignificant, it is implied that financial regulations does not significantly moderate the relationship between representativeness bias and tactical asset allocation in insurance companies in Mombasa town, Kenya.

The researcher examined the variance of tactical asset allocation that can be explained by self-attribution bias with and without the moderator as outlined in Table 4.21.

**Table 4.21: Significance of the Interaction Term for Self-attribution Bias**

Model	R	R <sup>2</sup>	AR <sup>2</sup>	Change Statistics				
				R <sup>2</sup> C	FC	df1	df2	SFC
1	.397a	.158	.149	.158	17.812	1	95	.000
2	.482b	.232	.216	.074	9.074	1	94	.003



The findings in Model 1 indicate that there is a weak positive and significant relationship between self-attribution bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $R = 0.397$ ;  $p < 0.05$ ). The findings indicate that 15.8% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya can be explained by self-attribution bias ( $R^2 = 0.158$ ). The findings in Model 2 indicate that self-attribution bias together with the interaction of SAB and financial regulations has weak positive relationship with tactical asset allocation in insurance companies in Mombasa town, Kenya ( $R = 0.482$ ). The findings indicate that 7.4% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya can be explained by the interaction of SAB and financial regulations over and above the variance explained by SAB ( $R^2$  change = 0.074). In Model 2, it is also shown that there is a potentially significant moderation between self-attribution bias and financial regulations on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $p < 0.05$ ).

The researcher therefore tested for moderating effect of financial regulations using centred regression terms. This was done using Process version 3.3 software in SPSS 25 as depicted in Table 4.22.

**Table 4.22: Moderating Effect for Self-attribution Bias**

	$\beta$	STDV. Error	t	Sig
(Constant)	4.2096	.0457	92.1987	.0000
Self-attribution bias	.2872	.0712	4.0327	.0001
Financial regulations	.2519	.0891	2.8283	.0057
Self-attribution bias * Financial regulations	.0274	.0463	.5925	.5549

a. Predictors: (Constant), Self-attribution bias

b. Predictors: (Constant), Self-attribution bias,  $X_3$ \*financial regulations

c. Dependent Variable: Tactical asset allocation

The findings indicate that interaction of self-attribution bias and financial regulations has positive insignificant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = .5925$ ;  $p < 0.05$ ). This implies that increasing financial regulations has an insignificant enhancing effect on the relationship between self-

attribution bias and tactical asset allocation in insurance companies (AAIC) in Mombasa town, Kenya. It is shown that self-attribution bias has positive significant effect on tactical AAIC in Mombasa town, Kenya ( $t = 4.0327$ ;  $p < 0.05$ ). Financial regulations has positive significant effect on tactical AAIC in Mombasa town, Kenya ( $t = 2.8283$ ;  $p < 0.05$ ). It is implied that the main effects are significant although moderation has occurred as self-attribution bias and financial regulations are significant with the interaction of self-attribution bias and financial regulations added to the model. Given that the interaction term is insignificant, it is implied that financial regulations does not significantly moderate the relationship between self-attribution bias and tactical asset allocation in insurance companies in Mombasa town, Kenya.

The researcher examined the variance of tactical asset allocation that can be explained by regret aversion bias with and without the moderator as outlined in Table 4.23.

**Table 4.23: Significance of the Interaction Term for Regret Aversion Bias**

Model	R	R <sup>2</sup>	AR <sup>2</sup>	Change Statistics				
				R <sup>2</sup> C	FC	df1	df2	SFC
1	.386a	.149	.140	.149	16.604	1	95	.000
2	.481b	.231	.215	.083	10.094	1	94	.002

a. Predictors: (Constant), Regret aversion bias

b. Predictors: (Constant), Regret aversion bias, X<sub>4</sub>\*financial regulations

c. Dependent Variable: Tactical asset allocation

The findings in Model 1 indicate that there is a weak positive and significant relationship between regret aversion bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $R = 0.386$ ;  $p < 0.05$ ). The findings indicate that 14.9% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya can be explained by regret aversion bias ( $R^2 = 0.149$ ). The findings in Model 2 indicate that RAB together with the interaction of RAB and financial regulations has weak positive relationship with tactical asset allocation in insurance companies in Mombasa town, Kenya ( $R = 0.481$ ). The findings indicate that 8.3% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya can be explained by the interaction of RAB and financial regulations over and above the variance explained by RAB ( $R^2$  change = 0.083). In Model 2, it is also shown

that there is a potentially significant moderation between RAB and financial regulations on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $p < 0.05$ ).

The researcher therefore tested for moderating effect of financial regulations using centred regression terms. This was done using Process version 3.3 software in SPSS 25 as clearly shown in Table 4.24.

**Table 4.24: Moderating Effect for Regret Aversion Bias**

	$\beta$	STDV. Error	t	Sig
(Constant)	4.2101	.0449	93.7108	.0000
Regret aversion bias	.2836	.0709	4.0021	.0001
Financial regulations	.2634	.0820	3.2127	.0018
Regret aversion bias * Financial regulations	.0257	.0380	.6769	.5001

The findings indicate that interaction of regret aversion bias and financial regulations has positive significant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = .6769$ ;  $p > 0.05$ ). This implies that increasing financial regulations has an insignificant enhancing effect on the relationship between regret aversion bias and tactical asset allocation in insurance companies in Mombasa town, Kenya. It is shown that regret aversion bias has positive significant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = 4.0021$ ;  $p < 0.05$ ). Financial regulations has positive significant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = 3.2127$ ;  $p > 0.05$ ). It is implied that the main effects are significant although moderation has occurred as regret aversion bias and financial regulations are significant with the interaction of regret aversion bias and financial regulations added to the model. Given that the interaction term is insignificant, it is implied that financial regulations does not significantly moderate the relationship between regret version bias and tactical asset allocation in insurance companies in Mombasa town, Kenya.

#### 4.8.2 Moderated Multiple Regression Analysis

The study analysed the combined effect of overconfidence bias, representativeness bias, self-attribution bias and regret aversion bias on tactical asset allocation in insurance companies in Mombasa town, Kenya as depicted in Table 4.25.

**Table 4.25: Significance of the Overall Moderating Effect of Financial Regulations**

Model	R	R <sup>2</sup>	AR <sup>2</sup>	Change Statistics				
				R <sup>2</sup> C	FC	df1	df2	SFC
1	.545a	.297	.267	.297	9.725	4	92	.000
2	.604b	.365	.307	.068	2.338	4	88	.061

a. Predictor:  $\beta_0$ , Regret aversion bias, OCB, Representativeness bias, Self-attribution bias

b. Predictor:  $\beta_0$ , Regret aversion bias, OCB, Representativeness bias, Self-attribution bias, X<sup>2\*</sup> financial regulations, X<sup>1\*</sup> financial regulations, X<sup>4\*</sup> financial regulations, X<sup>3\*</sup> financial regulations

c. Dependent Variable: Tactical asset allocation in insurance companies in Mombasa town, Kenya

In Model 1, the findings indicate that there is a moderately strong positive and significant relationship between behavioural biases and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $R = 0.545$ ;  $p < 0.05$ ). The findings indicate that 29.7% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya can be explained by overconfidence bias, representativeness bias, SAB and RAB ( $R^2 = 0.297$ ). In Model 2, the findings indicate that 6.8% of the variation in tactical asset allocation in insurance companies in Mombasa town, Kenya can be explained by the interaction of the behavioural biases and financial regulations over and above the variance explained by the behavioural biases ( $R^2$  change = 0.068). In Model 2, it is also shown that there is a potentially insignificant moderation between the behavioural biases and financial regulations on tactical asset allocation in insurance companies in Mombasa town, Kenya is insignificant ( $p > 0.05$ ).

The researcher also scrutinized the fit of the multiple regression model for the data collected using regression analysis of variance (ANOVA). The relevant results of ANOVA are depicted in Table 4.26.

**Table 4.26: ANOVA Results for Multiple Regression**

		<b>Sum Squares</b>	<b>of df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Model 1	Regression	7.256	4	1.814	9.725	.000b
	Residual	17.161	92	.187		
	Total	24.418	96			

a. Dependent Variable: Tactical asset allocation in insurance companies in Mombasa town, Kenya

b. Predictors: (Constant), RAB, OCB, RB, SAB

In Model 1, the findings indicate that there is a statistically significant relationship between behavioural biases and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $F = 9.725$ ;  $p < 0.05$ ). This implies that behavioural biases significantly determine tactical asset allocation in insurance companies in Mombasa town, Kenya ( $p < 0.05$ ).

The study also conducted the t-test to ascertain the statistical significance of the regression coefficient of each independent variable without moderation. This is because the initial findings using uncentred interaction terms revealed that the potential moderating effect of financial regulations on the relationship between behavioural biases and tactical asset allocation in Mombasa town, Kenya is insignificant ( $R^2$  change = 0.068;  $p > 0.05$ ) as revealed in Table 4.27.

**Table 4.27: Individual Regression Coefficients without Moderation**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	$\beta$	STDV. Error	Beta		
(Constant)	1.646	.464		3.549	.001
Overconfidence bias	.347	.100	.333	3.470	.001
Representativeness bias	-.022	.078	-.026	-.281	.779
Self-attribution bias	.123	.086	.155	1.430	.156
Regret aversion bias	.182	.079	.234	2.295	.024

The findings indicate that overconfidence bias significantly predicts tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = 3.470$ ;  $p < 0.05$ ). It is implied that overconfidence bias and tactical asset allocation in insurance companies in Mombasa town, Kenya are significantly related.

It was determined that representativeness bias insignificantly predicts tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = -.281$ ;  $p > 0.05$ ). The implication is that representativeness bias and tactical asset allocation in insurance companies in Mombasa town, Kenya are insignificantly related.

The study established that self-attribution bias insignificantly predicts tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = 1.430$ ;  $p > 0.05$ ). This means that self-attribution bias and tactical asset allocation in insurance companies in Mombasa town, Kenya have an insignificant relationship.

The study also established that regret aversion bias significantly predicts tactical asset allocation in insurance companies in Mombasa town, Kenya ( $t = 2.295$ ;  $p < 0.05$ ). Therefore, regret aversion bias and tactical asset allocation in insurance companies in Mombasa town, Kenya are significantly related.

The results of the t-test of individual regression coefficients clearly depict that overconfidence bias, regret aversion bias and the constant would be included in the regression equation as they were significant ( $p < 0.05$ ). The final regression model is shown in Equation 4.1.

$$Y = 1.646 + 0.347X_1 + 0.182X_4 \dots\dots\dots \text{Equation 4.1}$$

It is shown that increasing overconfidence bias by 1 unit enhances tactical asset allocation in insurance companies in Mombasa town, Kenya by 0.347 unit. The findings indicate that increasing regret aversion bias by 1 unit enhances tactical asset allocation in insurance companies in Mombasa town, Kenya by 0.182 unit.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### **5.1 Introduction**

In this chapter, the summary of key research findings, the conclusions drawn from the findings, recommendations and areas for further research are presented.

#### **5.2 Summary**

This section outlines a summary of major study findings carried out in Mombasa town, Kenya.

##### **5.2.1 Effect of Overconfidence Bias on Tactical Asset Allocation in Insurance Companies in Mombasa Town, Kenya**

The findings indicate that overconfidence bias affects the tactical asset allocation process in the insurance companies. It was found out that there is a weak positive and significant relationship between overconfidence bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $r = 0.448$ ;  $p < 0.05$ ). Therefore, increased overconfidence bias is associated with enhanced tactical asset allocation in insurance companies in Mombasa town, Kenya and vice-versa, as they are positively correlated. The results of regression analysis revealed that overconfidence bias has positive significant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $\beta_1 = 0.347$ ;  $p > 0.05$ ). It is implied that increasing overconfidence bias by 1 unit enhances tactical asset allocation in insurance companies in Mombasa town, Kenya by 0.347 unit.

##### **5.2.2 Effect of Representativeness Bias on Tactical Asset Allocation in Insurance Companies in Mombasa Town, Kenya**

The researcher determined that representativeness bias affects the tactical asset allocation process in the insurance companies. The researcher found out that there is a weak positive and insignificant relationship between representativeness bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $r = 0.155$ ;  $p > 0.05$ ). It is implied that increased representativeness bias is associated with increased tactical asset allocation in insurance companies in Mombasa town, Kenya and vice-versa, though insignificantly. The results of regression analysis revealed that representativeness bias has negative insignificant effect on tactical asset allocation in



insurance companies in Mombasa town, Kenya ( $\beta_2 = -.022$ ;  $p > 0.05$ ). It is shown that increasing representativeness bias by 1 unit reduces tactical asset allocation in insurance companies in Mombasa town, Kenya by 0.022 unit; though the effect is insignificant.

### **5.2.3 Effect of Self-attribution Bias on Tactical Asset Allocation in Insurance Companies in Mombasa Town, Kenya**

It was noted that self-attribution bias affects the tactical asset allocation process in the insurance companies. It was established that there is a weak positive and significant relationship between self-attribution bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $r = 0.397$ ;  $p > 0.05$ ). The implication is that increased self-attribution bias is associated with enhanced tactical asset allocation in insurance companies in Mombasa town, Kenya and vice-versa, as they are positively correlated. It was established that self-attribution bias has positive insignificant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $\beta_3 = 0.123$ ;  $p > 0.05$ ). This means that increasing self-attribution bias by 1 unit enhances tactical asset allocation in insurance companies in Mombasa town, Kenya by 0.123 unit; though the effect is insignificant.

### **5.2.4 Effect of Regret Aversion Bias on Tactical Asset Allocation in Insurance Companies in Mombasa Town, Kenya**

The findings indicate that regret aversion bias affects the tactical asset allocation process in the insurance companies. It was determined that there is a weak positive and significant relationship between regret aversion bias and tactical asset allocation in insurance companies in Mombasa town, Kenya ( $r = 0.386$ ;  $p < 0.05$ ). It is implied that increased regret aversion bias is associated with enhanced tactical asset allocation in insurance companies in Mombasa town, Kenya and vice-versa, as they are positively correlated. It was found out that regret aversion bias has positive significant effect on tactical asset allocation in insurance companies in Mombasa town, Kenya ( $\beta_4 = 0.182$ ;  $p < 0.05$ ). This implies that increasing regret aversion bias by 1 unit enhances tactical asset allocation in insurance companies in Mombasa town, Kenya by 0.182 unit.

### **5.3 Conclusions**

Firstly, the study concludes that tactical asset allocation process in insurance companies in Mombasa town, Kenya is subject to behavioural biases namely overconfidence bias, representativeness bias, SAB and RAB. Secondly, it is concluded that overconfidence bias positively and significantly affects tactical asset allocation in insurance companies in Mombasa town, Kenya. Thirdly, the researcher concludes that representativeness bias negatively and insignificantly affects tactical asset allocation in insurance companies in Mombasa town, Kenya.

Fourthly, the researcher concludes that self-attribution bias positively and insignificantly affects tactical asset allocation in insurance companies in Mombasa town, Kenya. Fifthly, the study also concludes that regret aversion bias positively and significantly affects tactical asset allocation in insurance companies in Mombasa town, Kenya and vice-versa. Lastly, it was concluded that that financial regulations do not significantly moderate the relationship between the behavioural biases and tactical asset allocation in insurance companies in Mombasa town, Kenya is insignificant.

### **5.4 Recommendations**

To insurance companies, this study recommends that when tactical investment decisions are being made, they should consider the adverse effects of representativeness bias which may lead to avoidance of profitable investment opportunities. Detailed analysis should always be conducted when evaluating tactical adjustments to the investment portfolios of insurance companies. Moreover, it is recommended that the effects of OCB, SAB and RAB should always be controlled for in tactical asset allocation process as it may hinder the achievement of ideal financial performance.

To financial advisors and consultants, this study recommends that they should advise insurance companies appropriately taking into account the influence of behavioural biases namely overconfidence bias, representativeness bias, SAB and RAB in tactical asset allocation process.

To future researchers and academicians, this study recommends that a study should be conducted on mechanisms that can be put in place to control for behavioural biases in the tactical asset allocation process in insurance companies. Moreover, a study should

be conducted on the effect of tactical asset allocation on insurance companies' financial results, with behavioural biases controlled for, so that the rationale for and optimality of tactical asset allocation can be determined.

## REFERENCES

- Abreu, M. (2014). *Individual investors' behavioural biases*. Lisboa: Lisboa Economics and Management.
- Akinde, M.A., Peter, E., & Ikpefan, O.A. (2018). Portfolio selection strategies and cognitive psychology biases: A behavioral evidence from the Nigerian equity market. *Investment Management and Financial Innovations*, 15(3), 267-282.
- Alquraan, T., Alqisie, A., & Al Shorafa, A. (2016). Do behavioral factors influence stock investment decisions of individual investors? (Evidence from Saudi Arabia). *American International Journal of Contemporary Research*, 6(3), 159-169.
- Byrne, A., & Utkus, S.P. (2013). *Behavioural finance: Understanding how the mind can help or hinder investment success*. London, United Kingdom: Vanguard Asset Management, Limited.
- Cruciani, C. (2017). *Investor decision-making and the role of the financial advisor: A behavioural finance approach*. Cham, Switzerland: Palgrave Macmillan. Retrieved from <https://doi.org/10.1007/978-3-319-68234-1>
- Dziwok, E. (2014). Asset allocation strategy in investment portfolio construction: A comparative analysis. *Journal of Economics & Management*, 18, 124-132.
- Garson, G.D. (2012). *Testing statistical assumptions*. Retrieved from <http://www.statisticalassociates.com/assumptions.pdf>
- Gitau, G.M. (2011). Effect and extent of behavioural factors and their influence on property decisions in Kenya. *Journal of entrepreneurship*, 2 (1), 3-5.
- Hirshleifer, D., Low, A., & Teoh, S.H. (2012). Are overconfident CEOs better innovators? *The Journal of Finance*, 67(4), 1457-1498.
- Hoang, N. (2016). *Tactical asset allocation: Factors to consider*. doi: 10.13140/RG.2.2.11264.84488
- Insurance Regulatory Authority. (2018). *Insurance industry report for the period October – December 2018: Fourth quarter release*. Nairobi, Kenya: Author.
- Kafayat, A. (2014). Interrelationship of biases: Effect investment decisions ultimately. *Theoretical and Applied Economics*, 21(6), 85-110.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica: Journal of the Econometric Society*, 47(3), 263–291.

- Kahneman, D., Slovic, P., & Tversky, A. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185(4157): 1124–1131.
- Kahneman, D., Slovic, P., & Tversky, A. (1982). *Judgement under uncertainty: Heuristics and biases*. Cambridge, UK: Cambridge University Press.
- Kanojia, S., Singh, D., & Goswami, A. (2018). An empirical analysis of the factors influencing individual investors in the Indian stock market. *IOSR Journal of Business and Management*, 20(3), 30-37.
- Kengatharan, L., & Kengatharan, N. (2014). The influence of behavioral factors in making investment decisions and performance: Study on investors of Colombo Stock Exchange, Sri Lanka. *Asian Journal of Finance and Accounting*, 6(1), 1-15.
- Kenya National Bureau of Statistics. (2016). *The 2016 national micro, small and medium establishment (MSME) survey report*. Nairobi, Kenya: Author.
- Kisaka, E. K. (2015). *The effect of behavioral finance factors on stock investment decisions in Kenya* (Unpublished doctoral dissertation). South Eastern Kenya University, Kenya.
- Kothari, C. R., & Garg, V. (2014). *Research Methodology Methods and Techniques*.
- Kumar, R. (2014). *Research methodology: A step-by-step guide for beginners* (4<sup>th</sup> ed.). Thousand Oaks, California: SAGE Publications Inc.
- Li, W. (2019). Research on asset allocation of insurance companies based on mean-variance model. *Advances in Economics, Business and Management Research*, 76, 196-204.
- Mahina, N.J., Muturi, W., & Florence, M. (2017). Effect of behavioural biases on investments at the Rwanda Stock Exchange. *International Journal of Accounting, Finance and Risk Management*, 2(4), 131-137.
- Meeker, D., Thompson, C., Strylewicz, G., Knight, T.K., & Doctor, J.N. (2015). Use of insurance against a small loss as an incentive strategy. *Decision Analysis*, 12(3), 122-129.
- Metwally, A.H., & Darwish, O. (2015). Evidence of the over-confidence bias in the Egyptian stock market in different market states. *The Business Management Reviews*, 6(4), 178-198.

- Miwa, K., & Ueda, K. (2014). Analyst preference for growth investing and vulnerability to market-wide sentiments. *The Quarterly Review of Economics and Finance*, 61, 40-52.
- Mombasa County Government. (2017). *Mombasa county permit registration*. Mombasa, Kenya: Author.
- Moosa, I.A., & Ramiah, V. (2017). *The financial consequences of behavioural biases: An analysis of bias in corporate finance and financial planning*. Cham, Switzerland: Palgrave Macmillan. Retrieved from <https://doi.org/10.1007/978-3-319-69389-7>
- Mugenda, O. M., & Mugenda, A. G. (2013). *Research methods: Quantitative and qualitative approaches*. Nairobi, Kenya: Acts Press.
- Polkovnichenko, V. (2005). Household portfolio diversification: A case for rank dependent preferences. *The Review of Financial Studies*, 18, 1467-1502.
- Pompian, M.M. (2012). *Behavioural finance and wealth management: How to build investment strategies that account for investor biases*. Hoboken.
- Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research methods for business students* (6<sup>th</sup> ed.). Harlow, England: Pearson Education.
- Shefrin, H. (2007). Behavioral finance: biases, mean-variance returns, and risk premiums. *CFA Institute Conference Proceedings Quarterly*, 24(2), 4-12.
- Shefrin, H., & Statman, M. (2000). Behavioral portfolio theory. *Journal of Financial and Quantitative analysis*, 35(2), 127-151.
- Singh, R. (2010). Behavioural finance studies: Emergence and developments. *Journal of Contemporary Management Research*, 4(2), 1.
- Usman, D.I. (2018). *Influence of cognitive biases on investment decision making in property market in Plateau state, Nigeria* (Unpublished doctoral thesis). Jomo Kenyatta University of Agriculture and Technology, Juja, Kenya.

## APPENDICES

### Appendix I: Introduction Letter

Dear Sir/Madam,

**RE: LETTER OF INTRODUCTION – BENARD NYARIGE ONG’AYO**

I am a postgraduate student undertaking Master of Business Administration (Finance Option) at University of Nairobi in the Department of Finance and Accounting, School of Business. The title of my research is “*effect of behavioural biases on tactical asset allocation in insurance companies in Mombasa town, Kenya*”. It is a humble request that you provide the required data as shown in the questionnaire. All the data collected and the identity of the respondents will be treated with utmost confidentiality. If you would like, we could send you the executive summary of the findings on request. Thank you.

Yours sincerely

---

Benard Nyarige Ong’ayo

Student, University of Nairobi

## Appendix II: Research Questionnaire

This questionnaire is intended to gather information for an academic study entitled “*effect of behavioural biases on tactical asset allocation in insurance companies in Mombasa town, Kenya*”.

Serial Number

### Section A: General information

Kindly put a tick (✓) against the correct choice.

1. Please indicate your gender

Male [ ] Female [ ]

2. Please indicate your age category

Below 20 years [ ] 20 -30 years [ ] 31 -40 years [ ]

41 -50 years [ ] 51 -60 years [ ] Above 60 years [ ]

3. What is your highest academic qualification?

Primary [ ] Secondary [ ] Post secondary [ ] Graduate [ ]

Post graduate [ ]

4. What category is your business in?

General insurance [ ] Reinsurance [ ] Long-term insurance [ ]

6. For how long has this business been in operation in Mombasa town?

Less than 1 year [ ] 1 to 3 years [ ] 3 to 6 years [ ]

6 to 10 years [ ] Over 10 years [ ]

### **INSTRUCTIONS FOR SECTIONS B, C, D, E, F AND G**

You are required to indicate your level of agreement/disagreement with the statements in the tables using the following 5-point Likert scale: 1 = Strongly disagree; 2 = Disagree; 3= Neutral; 4 = Agree and 5 = Strongly Agree. Kindly put a tick (✓) against the correct choice.



**Section B: Overconfidence Bias**

		1	2	3	4	5
1	It is possible to beat all competitors in the market once strategies have been set by the business					
2	All relevant factors that may impede achievement of investment risk and return objectives can be examined and overcome					
3	Once particular factors relevant to the success of the enterprise are considered, energy is directed to those specific factors					
4	It is possible to have minimal deviation from revenue, expenditure and risk forecasts made as regards enterprise investments					

**Section C: Representativeness Bias**

		1	2	3	4	5
1	Funds are usually allocated to investments with major focus on their current returns and past returns to guide decision process					
2	Once it is believed that an investment is worth based on available information, funds are allocated without much worry and very detailed analysis					
3	Potential investments are usually compared with current and past investments so that if they are almost similar, there is less worry to invest					
4	More investments are usually made after examining the success of past investments made by the insurance company					

**Section D: Self-attribution bias**

		1	2	3	4	5
1	Once effort is directed to achieving investment objectives, chances of success are high					
2	At times, the enterprise performance objectives are not achieved mostly due to factors outside the firm					
3	It is expected that investment performance will always be positive as desired					
4	It is usually grateful when the enterprise is viewed as successful by interested parties					

**Section E: Regret aversion bias**

		1	2	3	4	5
1	It is painful if wrong investment choices are made based on initial beliefs and investments analysis					
2	When making fund allocations for investments, it is aimed that possible regret is minimal					
3	It is preferred that risky investment alternatives are not implemented when there is uncertainty and instability in the business environment					
4	It is painful when more profitable investments that should have initially been undertaken are not implemented					

**Section F: Tactical asset allocation**

		1	2	3	4	5
1	The investments are made for various kinds of assets based on proportions deemed fit for each class of assets					
2	The insurance company always considers the ability and willingness to take risk whenever short-term changes are made to proportions of funds initially allocated in enterprise investments					
3	The insurance company usually sets short to medium term investment expectations as regards returns and ensures that they are achieved					
4	The asset structure of the insurance company is usually reviewed in order to take advantage of short to medium term opportunities which are profitable					

**Section G: Financial regulations**

		1	2	3	4	5
1	The organization monitors the margins on adequacy of capital and ensures adherence to the recommended ratios					
2	The organization ensures that commissions paid are within the recommended limits by regulations					
3	The organization ensures upfront payment of premiums upon issue of cover					
4	The management expenses of the organization each financial year are within recommended limits					

**THANK YOU FOR YOUR TIME AND COOPERATION!**

### Appendix III: List of Insurance Companies in Mombasa town

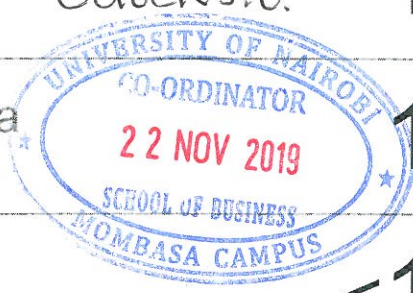
Serial Number	Name of Insurance Company
1	APA Insurance Ltd - Mombasa
2	AIG Kenya Insurance Co Ltd - Mombasa
3	Apollo Life Assurance Ltd - Mombasa
4	BRITAM - Mombasa
5	CIC Insurance Group Ltd - Mombasa Regional Office
6	Corporate Insurance Co Ltd - Mombasa
7	Directline Assurance Co. Ltd - Mombasa
8	Fidelity Shield Insurance Co Ltd
9	First Assurance Co Ltd - Town Office
10	GA Insurance Ltd
11	Geminia Insurance Co Ltd - Mombasa
12	Heritage Insurance Co. Kenya Ltd, The
13	ICEA Lion Group - Mombasa
14	Intra Africa Assurance Co Ltd
15	Invesco Assurance Co. Ltd - Mombasa
16	Jubilee Insurance Company of Kenya Ltd, The - Mombasa
17	Kenyan Alliance Insurance Co Ltd, The
18	Liberty Assurance Ltd Mombasa
19	Mayfair Insurance Co. Ltd - Mombasa
20	Metropolitan Cannon - Mombasa
21	Minet - Mombasa
22	Niconat Insurance
23	Occidental Insurance Co Ltd
24	Old Mutual - Mombasa
25	Pacis Insurance Company Ltd
26	Pioneer Assurance Co Ltd - Mombasa Branch
27	Resolution Insurance - Mombasa
28	Saham Assurance Company Kenya Ltd - Mombasa
29	Sanlam - mombasa
30	Sanlam Kenya ltd
31	Standard Assurance (K) Ltd - Mombasa
32	Takaful Insurance of Africa
33	The Monarch Insurance Co Ltd - Mombasa
34	Trident Insurance Co Ltd

# EFFECT OF BEHAVIOURAL BIASES ON TACTICAL ASSET ALLOCATION IN INSURANCE COMPANIES IN MOMBASA TOWN, KENYA

ORIGINALITY REPORT

<b>15%</b>	%	%	<b>15%</b>
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

<b>1</b>	Submitted to Mount Kenya University Student Paper		<b>1%</b>
<b>2</b>	Submitted to Kenyatta University Student Paper		<b>1%</b>
<b>3</b>	Submitted to CVC Nigeria Consortium Student Paper		<b>1%</b>
<b>4</b>	Submitted to KCA University Student Paper	<i>Prof. Peter Odock S.O.</i>	<b>1%</b>
<b>5</b>	Submitted to University of Kabianga Student Paper		<b>1%</b>
<b>6</b>	Submitted to University of Nairobi Student Paper		<b>&lt;1%</b>
<b>7</b>	Submitted to Ghana Technology University College Student Paper		<b>&lt;1%</b>
<b>8</b>	Submitted to African Population Health Research Centre		<b>&lt;1%</b>

*[Signature]*  
22/11/2019