EFFECT OF BEHAVIORAL BIAS ON REAL ESTATE PRICES IN KENYA (A CASE OF REAL ESTATES IN KIAMBU COUNTY)

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ABSTRACT

The study sought to find the effect of behavioral finance concepts (or biases), on the effect of real estate prices in Kiambu County. The study used descriptive survey design. The finding of the study revealed that overconfidence bias, herding effect, gamblers fallacy and regret aversion positively influenced real estate market prices. Results of the inferential statistics such as unstandardized regression coefficients showed a positive effect on real estate prices in Kenya. This further indicated that these behavioural bias factors had a significant effect on real estate prices in Kenya as indicated by the low p values. Regression model showed that there was positive relationship between behavioural bias factors and real estate prices in Kenya. The behavioral bias calls for a serious concern in any business investment, the more reason why this study turned a beam light on the subject matter. From the findings of the study, it was revealed that behavioral biases influence real estate prices in Kenya. Thus the study concluded that behavioral biases influence real estate prices in Kenya. Regarding demographic characteristics of the respondents, the study concluded that behavioral biases is an issue that is crosscutting regardless of gender, marital status, age, education level and so on. Based on objective one, the study found out that there was a significant relationship between overconfidence bias and real estate prices in Kenya. Thus the study concluded that overconfidence affects real estate prices in Kenya positively. The study found out that there is insignificant relationship between herding effect and real estate prices in Kenya. Thus the study concluded that herding does not influences real estate prices in Kenya. Thus the study concluded that gamblers fallacy influences real estate prices in Kenya. It was found out that regret aversion have a significant relationship with real estate prices in Kenya. Thus the study concluded that regret aversion influence real estate prices in Kenya. Based on the findings of this research it was recommended that the individual investors need to analyses the investment factors carefully using the reasonable business knowledge before making an investment decision. The investors should also be able to interpret the market and economic indicators of various industries and firms in the market since they influence the performance of the real estate investment.

Key Words: *Overconfidence Bias, Herding Effect, Gamblers Fallacy, Regret Aversion*

INTRODUCTION

Investors can seriously harm their wealth by allowing the behavioral biases to affect their decision making. As a result of inherent biases built in our brains and bodies, human beings make suboptimal decisions, (Gordon, 2011). According to behavioral finance an investor is assumed to be normal. Many researchers in the field of behavioral finance conducted research and suggested that investors do not always behave rationally when making investment decisions (Ayopo and Adekunle, 2012). Behavioral bias is categorized in two main areas: emotional time line and heard instincts. Emotional time line describes how people make decision, which is defined by a time line that begins with hope or fear and ends with pride or regret. Heard instincts describe how people make decision with regard to how other people make same decision. Real estate prices have skyrocketed in Kenya and the study checked if these have been due to behavioral aspects or the appreciation of the real value. This study therefore contributed to the knowledge of behavioral finance with regard to real estate in the Kenyan context.

Behavioral bias can be categorized into two. One is emotional time line and herd instincts and overreaction. Behavioral biases, abstractly, are defined in the same way as systematic errors are, in judgment (Chen, Kim, Nafsinger & Rui 2007). According to psychologist Lola Lopes (2002) investors experience a variety of emotions, positive and negative. The emotions experienced by a person with respect to investment may be expressed along an emotional time line which begins by decision and ends by the goal. When making the decision, if one is driven by fear this will lead to anxiety and the outcome will be regret. On the other side hope leads to anticipation and later pride. Hope and fear have a bearing on how investors evaluate alternatives. Fear induces investors to look at the downside of things, whereas hope causes them to look at the upside.

There is a natural desire on the part of human beings to be part of a group so people tend to herd together. Herding in financial markets can be defined as mutual imitation leading to a convergence of action (Hirshleifer and Teoh, 2003). Moving with the herd, however, magnifies the psychological biases. It induces one to decide on the "feel" of the herd rather than on rigorous independent analysis. This tendency is accentuated in the case of decisions involving high uncertainty. Investors apply to "herd behavior" because they are concerned of what others think of their investment decisions (Scharfstein and Stein, 2006).

Overconfidence according to Ritter (2003) manifests itself when there is little diversification because of a tendency to invest too much in what one is familiar with. Selecting common stocks that will outperform the market is a difficult task in that predictability is low and feedback is noisy thus, stock selection is the type of task for which people are most overconfident (Barber and Odean, 2001). Overconfidence explains why portfolio managers trade so much, why pension funds hire active equity managers, and why even financial economists often hold actively managed portfolios-they all think they can pick winners (DeBondt & Thaler, 1994).

Graham (1999) defined herding behavior as often said to occur when many people take the same action, perhaps because some mimic the actions of others in making investment. It is where individuals are led to conform to the majority of the individuals present in the decision making environment by following their decisions (Chelangat, 2011). Herd behavior can lead people astray when they follow blindly. According to Prechter (1999), herd behavior in humans results from impulsive mental activity in individuals responding to signals from the behavior of others. Due to the fact that more and more information is spread faster and faster, (Fromlet, 2001), life for decision makers in financial markets

has become more complicated. According to Johnson, Lindblom, &, Platan (2002) the interpretation of new information may require heuristic decision-making rules.

In the current context, real estate prices are not regulated by any authority. Real estate investments and prices are good measures for reflecting expected real estate demand, and serve as good predictors of economic growth, (Frank, 2011). The "real estate" market and industry is considered to include land and improvements, their selling and rental prices, the economic rent of land and returns on buildings and other improvements, and the construction industry.

Although real estate values are influenced by the supply and demand for properties in a given location and the replacement cost of developing new properties, the income approach is the most common valuation technique for investors. The income approach provided by appraisers of commercial properties and by underwriters and investors of real estate-backed investments is very similar to the discounted cash flow analysis conducted on equity and bond investments, (Jennergren, 2011).

Asset bubbles are inflated by overconfidence and herding behavior. These bubbles are then kept alive exactly by the arbitrageurs expected to bring price close to fundamental (or equilibrium value) and exacerbated by the existing institutional setting which is unable to control and address conflicts of interest, (Constantinescu, 2010). Experiments conducted by Fehr et al. indicate that positive and negative inflation shocks have asymmetric effects on the price development with negative shock not leading so readily to price adjustment as positive shock.

Interestingly, a similar effect was observed in the property valuation literature by Harvard (2009), where appraisers were observed to adjust prices upwards more readily than downward when given proof of improper estimation. Case and Shiller

(2009) have conducted surveys of recent buyers, showing that buyers in booming markets have greater expected house price appreciation than buyers in a control market. Buyers in the booming market indicate that they treat the purchase of a home more as an investment, and discuss housing market changes more frequently. By contrast, buyers in the control market spend less time discussing the housing market, and place more weight on the consumption value of a home, as opposed to its investment value.

Values in Kenya's residential property market continue to rise, amidst robust economic growth and a sharp increase in the population of middle-class. Residential property values in Kenya have skyrocketed a stunning 357% from the year 2000 to Q3 in the year 2014 according to Hass Consult. During the year 2014 to end-Q3 2014, the Hass Composite Property Sales Index, a measure of asking sales prices of residential properties, rose by 4.7%, a sharp improvement from increases of 0.05% in Q2 2014, 1.7% in Q1 2014, and 0.3% in Q4 2013, based on a report released by Hass Consult Limited. Quarter-on-quarter, residential property prices increased 3.1% in Q3 2014.The Hass index is based on 4,000 to 6,000 properties tracked across Kenya, which are collected from multiple estate agencies and all publicly available house sales, including in property magazines, property websites and the national media, (Hass Consultant Limited, 2016).

The real estate prices in Kiambu County can be clearly seen to have been on the increase. This increase in prices has been higher as compared to other major cities, where their economies are much stronger. According to Statman, Fisher and Anginer, (2008) many people make investment decisions emotionally. Feelings, fantasy, mood and sentiments have been observed to affect investment decisions. The real estate market has gained much interest in recent years, and it's most likely that herding has caused speculation and generally an increase on property prices.

Statement of the Problem

Behavioral bias is defined as a pattern of variation in judgment that occurs in particular situations, which may sometimes lead to perceptual alteration, inaccurate judgment, illogical interpretation, or what is largely called irrationality (Rasheed, Raftar, Fatima and Maqsood, 2013). There is evidence to show repeated patterns of irrationality in the way humans arrive at decisions and choices when faced with uncertainty, (Subash, 2012).

Real estate has had immense interest globally due to the unique characteristic of the industry. Housing has unique characteristics because it can be viewed as both an investment and a consumption good, (Stepanyan, Poghosyan and Bibolov, 2010). Researchers have had a lot of interest in behavioral finance and real estate. A study by Luong, Ha (2011) on the behavioral factors influencing individual investor's decision in Vietnam, found that behavioral factors affect Investor's decision. The study recommended for further research to confirm the findings. A research by Muthama, (2012) on effects of investor psychology on real estate market prices in Nairobi concludes that investor psychology actually affects real estate decision. A recent study by Choka, (2012) on the effects of investor sentiment on real estate investment, concludes that investor sentiments influence investor's decision on real estate.

Miregi, Obere (2014), studied the effects of market fundamental variables on property prices in Kenya with a case study of Nairobi. The study was seeking to dispel the fear of the prevailing high real estate prices, using VAR model. Property prices were used as the dependent variable while stock prices, interest rate, building cost and inflation as the independent variables. On the basis of the overall objective whether market fundamental variables have effect on the property prices in Kenya, the study reveals a pricing trend that is not fundamentally supported, at least by the variables investigated. Investors need to make rational decisions for maximizing their returns based on the information available by taking judgments that are free from emotions (Brabazon, 2000). Investor behavior is characterized by overexcitement and overreaction in both rising and falling security markets and various factors influences their decision making processes.

According to Kimani (2011) there were five behavioral factors that were at play. These were: herding, market, prospect, overconfidence and anchoring bias. However, it was not clear whether these behavioral biases affected individual investor decisions concerning IPOs. Additionally, a recent study related to IPOs conducted by Kipngetich et al. (2011) modeled investor sentiments in their equation of determinants of IPO pricing in Kenya using secondary data obtained from the NSE. However, their study did not explore the behavioral biases that underpin individual investor behavior during IPOs. This means that most of the studies on investor behavior that have been reported were carried out in mature markets. There is a gap in relevant literature on developing countries markets particularly Kenya which is an emerging real estate market. However little has been done to research on behavioral bias effect of real estate prices which this research intends to fill this gap. This Study intends to address the research question: - What is the effect of behavioral bias on real estate prices in Kiambu County?

Objective of the Study

The general objective of the study was to assess the effect of behavioral bias on real estate prices in Kenya. The specific objectives were:-

- To establish the effect of overconfidence on real estate prices in Kenya.
- To assess the effect of herding on real estate prices in Kenya.

- To establish the effect of gamblers fallacy on real estate prices in Kenya.
- To determine the effect of regret aversion on real estate prices in Kenya.

LITERATURE REVIEW
Theoretical Review

Heuristic Theory

Heuristics are defined as the rules of thumb, which makes decision making easier, especially in complex and uncertain environments (Ritter, 2003) by reducing the complexity of assessing probabilities and predicting values to simpler judgments (Kahneman & Tversky, 1974). They seem to be ones of the first writers studying the factors belonging to heuristics when introducing three factors namely representativeness, availability bias, and anchoring. Waweru, N., M., Munyoki, E., and Uliana, E. (2008), also list two factors named Gambler's fallacy and Overconfidence into heuristic theory. Representativeness refers to the degree of similarity that an event has with its parent population (DeBondt & Thaler, 1995) or the degree to which an event resembles its population. Representativeness may result in some biases such as people put too much weight on recent experience and ignore the average long-term rate (Ritter, 2003). A typical example for this bias is that investors often infer a company's high long-term growth rate after some quarters of increasing (Waweru et al., 2008). Representativeness also leads to the so-called "sample size neglect" which occurs when people try to infer from too few samples (Barberis & Thaler, 2003).

The belief that a small sample can resemble the parent population from which it is drawn is known as the "law of small numbers" (Rabin, 2002; Statman, 1999) which may lead to a Gamblers' fallacy (Barberis & Thaler, 2003). More specifically, in real estate market, Gamblers' fallacy arises when people predict inaccurately the reverse points which are considered as the end of good (or poor) market returns (Waweru et al., 2008). In addition, when people subject to status quo bias, they tend to select suboptimal alternative simply because it was chosen previously (Kempf and Ruenzi, 2006).

Anchoring is a phenomena used in the situation when people use some initial values to make estimation, which are biased toward the initial ones as different starting points yield different estimates (Kahneman & Tversky, 1974). In real estate market, anchoring arises when a value scale is fixed by recent observations. Investors always refer to the initial purchase price when selling or analyzing. Thus, today prices are often determined by those of the past. Anchoring makes investors to define a range for a real estate price based on the historical trends, resulting in under-reaction to unexpected changes. Anchoring has some connection with representativeness as it also reflects that people often focus on recent experience and tend to be more optimistic when the market rises and more pessimistic when the market falls (Waweru et al., 2008).

Availability bias happens when people make use of easily available information excessively. In real estate market, this bias manifest itself through the preference of investing in real estates which investors are familiar with or easily obtain information, despite the fundamental principles so-called diversification of portfolio management for optimization (Waweru et al., 2008).

Prospect Theory

The prospect theory describes how people frame and value a decision involving uncertainty. According to the prospect theory, people look at choices in terms of potential gains or losses in relation to a specific reference point, which is often the purchase price. The theory was originally

conceived by Kahneman and Tversky (1979) and later resulted in Daniel Kahneman being awarded the Nobel Prize for Economics.

The theory distinguishes two phases in the choice process: the early phase of framing (or editing) and the subsequent phase of evaluation. Tversky and Kahneman, by developing the Prospect Theory, showed how people manage risk and uncertainty. In essence, the theory explains the apparent irregularity in human behavior when assessing risk under uncertainty. It says that human beings are not consistently risk-averse; rather they are risk-averse in gains but risk-takers in losses. People place much more weight on the outcomes that are perceived more certain than that are considered mere probable, a feature known as the "certainty effect". (Kahneman & Tversky, 1979).

People's choices are also affected by the „Framing effect". Framing refers to the way in which the same problem is worded in different ways and presented to decision makers and the effect deals with how framing can influence the decisions in a way that the classical axioms of rational choice do not hold. It was also demonstrated systematic reversals of preference when the same problem was presented in different ways (Kahneman & Tversky, 1981).

The value maximization function in the Prospect Theory is different from that in Modern Portfolio Theory. In the modern portfolio theory, the wealth maximization is based on the final wealth position whereas the prospect theory takes gains and losses into account. This is on the ground that people may make different choices in situations with identical final wealth levels. An important aspect of the framing process is that people tend to perceive outcomes as gains and losses, rather than as final states of wealth. Gains and losses are defined relative to some neutral reference point and changes are measured against it in relative terms, rather than in absolute terms, (Kahneman & Tversky, 1979). We can therefore say that people

will not necessary do their independent analysis but will most likely be influenced, by how investment options are presented and therefore their decision will affects real estate prices.
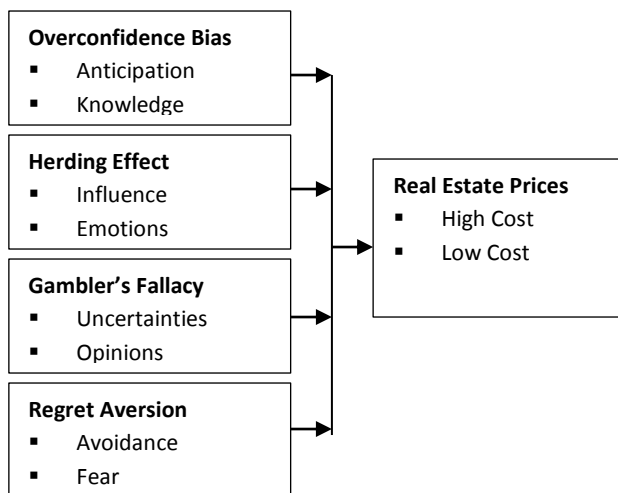
Efficient Markets Hypothesis

Modern finance is built upon the Efficient Markets Hypothesis (EMH) by Fama (1970). EMH is the notion that securities "prices already reflect all available information. The EMH argues that competition between investors seeking abnormal profits drives prices to their "correct" value, so that any arbitrage opportunities disappear as soon as they arise. Behavioral finance assumes that, in some circumstances, financial markets are informationally inefficient (Ritter, 2003).

A market is said to be efficient with respect to some information if that information is not useful in making investors to earn excess positive return (Jordan & Miller, 2008). The market is not efficient if some investors have access to insider information leading to insider trading and their ability to earn excess positive returns than other investors. Statman (1999) stated that market efficiency is at the center of the battle of standard finance versus behavioral finance versus investment professionals. He argues that the term "market efficiency" has two meanings. One meaning is that investor's cannot systematically beat the market and Statman concurs with this. The other meaning is that security prices are rational implying that they reflect only "fundamental" or "utilitarian" characteristics, such as risk, but not "psychological" or "value-expressive" characteristics, such as sentiment. Statman strongly disagrees with this second meaning. However from the EMH theory, Fama did not include psychological bias in his theory and these are therefore not reflected on the market.

According to EMH, it is very difficult for investors to consistently beat the market (earn positive excess

return) over a long period of time. The excess return is the difference between the earnings of a particular investment and the earnings of other investments with similar risk. A positive excess return means that an investment has out-performed other investments of the same risk (Jordan and Miller, 2008). Odean (2009) states that excessive trading in retail brokerage accounts could result from either investors" overconfidence or from the influence from brokers wishing to generate commissions. Excessive institutional trading could also result from overconfidence or from agency relationships. He cites a study by Dow and Gorton (2007) which shows that money managers, who would otherwise not trade, do so for the mere reason of signaling to their employers that they are earning their fees and are not "simply doing nothing". According to this theory lack or presence of market information will influence real estate prices either positively or negatively. In efficient market, investors are expected to use the available market information to make decision on the cost of real estate they intend to invest in.

Conceptual Framework

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┌─────────────────────────┐
│ Overconfidence Bias     │
│  ▪ Anticipation         │
│  ▪ Knowledge            │
└─────────────────────────┘

┌─────────────────────────┐          ┌─────────────────────────┐
│ Herding Effect          │          │ Real Estate Prices      │
│  ▪ Influence            │─────────▶│  ▪ High Cost            │
│  ▪ Emotions             │          │  ▪ Low Cost             │
└─────────────────────────┘          └─────────────────────────┘

┌─────────────────────────┐
│ Gambler's Fallacy       │
│  ▪ Uncertainties        │
│  ▪ Opinions             │
└─────────────────────────┘

┌─────────────────────────┐
│ Regret Aversion         │
│  ▪ Avoidance            │
│  ▪ Fear                 │
└─────────────────────────┘
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Independent Variables   Dependent Variable

Figure 1: Conceptual Framework

Overconfidence

Overconfidence can be defined as the unmerited confidence in self's judgments and abilities. Odean (2008) describes overconfidence as the belief that a trader's information is more precise than it actually is. This is equivalent to narrow confidence intervals in predictions. Daniel et al. (2008) define an overconfident investor as one who overestimates the precision of his private information signal, but not of information signals publicly received by all.

Overconfidence may stem from different reasons. Self-attribution bias is attributing successful outcomes to own skill but blaming unsuccessful outcomes on bad luck as discussed in Miller and Ross (2005) and Kunda (2007). Langer (2005) states that illusion of control is the tendency for people to overestimate their ability to control events that they have no influence over. Unrealistic optimism is simply confidence about the future or successful outcome of something. It is the tendency to take a favourable or hopeful view as discussed by Weinstein (2000) and Kunda (2007). Russo and Shoemaker (2002), define confirmation bias as the tendency for people to favour information that confirms their arguments, expectations or beliefs. As discussed by Svenson (2001), better than average effect implies that people think they have superior abilities than on average. Hence, individuals tend to believe they are in the best class among peers. Calibration refers to how individuals can assess the correctness of their estimates. Deaves et al. (2010) argue that a miscalibrated agent assumes lower level of mistake than she / he actually makes.

Different forms of overconfidence reveal that overconfident investors believe that their decisions will prove to be correct and expect higher returns than average. However, this is not necessarily the case and overconfident investors are exposed to possible losses due to their investment decisions.

Odean (2008) presents a good summary of overconfidence in different professional fields such as investment bankers and managers. The author also finds that overconfidence affects financial markets; overconfidence increases expected trading volume, increases market depth and decreases the expected utility of overconfident traders. In line with literature, we hypothesize that overconfidence is common among Turkish individual equity investors.

Barber and Odean (2001) test whether men are more overconfident than women by partitioning investors on gender. The authors use data from a nationwide brokerage house for the period 1991-1996 by focusing on common stock investments of households. The authors define overconfidence as annual turnover and find that women turn their portfolios almost 53% while men turn 77% annually indicating that men trade 45% more than women annually. Findings of Barber and Odean (2009), Chen et al. (2007), Acker and Duck (2008), Graham et al. (2009), Grinblatt and Keloharju (2009), Hoffmann et al. (2010) also support the view that men are more overconfident than women. In line with literature, we also expect Turkish male investors to be more overconfident than female investors.

Chen et al. (2007) use transaction data of a large Chinese brokerage house to analyze overconfidence in Chinese investors. The authors find that individual investors in China trade more frequently than US individual investors. Acker and Duck (2008) use a stock market game and predictions of examination marks to measure overconfidence among Asian and British students. They find that Asian students are more overconfident than British students. These findings imply that level of overconfidence can be different among cultures. In line with literature, we hypothesize that Turkish individual stock investors are more overconfident than US individual investors.

Graham et al. (2009) find that wealthier and highly educated investors are more likely to perceive themselves as competent, implying overconfidence. On the other hand, Ekholm and Pasternack (2007) confirm that investors with smaller portfolios are more overconfident compared to investors with larger portfolios as these investors are more experienced and wealthier. Hence, we hypothesize that sophisticated investors are less prone to overconfidence.

Herding Effect

Herding effect in financial market is identified as tendency of investors' behaviors to follow the others' actions. Practitioners usually consider carefully the existence of herding, due to the fact that investors rely on collective information more than private information can result the price deviation of the securities from fundamental value; therefore, many good chances for investment at the present can be impacted. Academic researchers also pay their attention to herding; because its impacts on stock price changes can influence the attributes of risk and return models and this has impacts on the viewpoints of asset pricing theories (Tan, Chiang, Mason & Nelling, 2008).

In the perspective of behavior, herding can cause some emotional biases, including conformity, congruity and cognitive conflict, the home bias and gossip. Investors may prefer herding if they believe that herding can help them to extract useful and reliable information. Whereas, the performances of financial professionals, for example, fund managers, or financial analysts, are usually evaluated by subjectively periodic assessment on a relative base and the comparison to their peers. In this case, herding can contribute to the evaluation of professional performance because low-ability ones

may mimic the behavior of their high-ability peers in order to develop their professional reputation (Kallinterakis, Munir & Markovic, 2010).

In the security market, herding investors base their investment decisions on the masses' decisions of buying or selling stocks. In contrast, informed and rational investors usually ignore following the flow of masses, and this makes the market efficient. Herding, in the opposite, causes a state of inefficient market, which is usually recognized by speculative bubbles. In general, herding investors act the same ways as prehistoric men who had a little knowledge and information of the surrounding environment and gathered in groups to support each other and get safety (Caparrelli et al., 2004). There are several elements that impact the herding behavior of an investor, for example: overconfidence, volume of investment, and so on. The more confident the investors are, the more they rely on their private information for the investment decisions. In this case, investors seem to be less interested in herding behaviors. When the investors put a large amount of capital into their investment, they tend to follow the others' actions to reduce the risks, at least in the way they feel. Besides, the preference of herding also depends on types of investors, for example, individual investors have tendency to follow the crowds in making investment decision more than institutional investors (Goodfellow, Bohl & Gebka, 2009).

Waweru et al. (2008) propose that herding can drive stock trading and create the momentum for stock trading. However, the impact of herding can break down when it reaches a certain level because the cost to follow the herd may increase to get the increasing abnormal returns. Waweru et al. (2008) identify stock investment decisions that an investor can be impacted by the others: buying, selling, choice of stock, length of time to hold stock, and volume of stock to trade. Waweru et al. (2008) conclude that buying and selling decisions of an investor are significantly impacted by others' decisions, and herding behavior helps investors to have a sense of regret aversion for their decisions. For other decisions: choice of stock, length of time to hold stock, and volume of stock to trade, investors seem to be less impacted by herding behavior. However, these conclusions are given to the case of institutional investors; thus, the result can be different in the case of individual investors because, as mentioned above, individuals tend to herd in their investment more than institutional investors.

Gamblers' Fallacy

Kahneman and Tversky (2001) describe the heart of gambler's fallacy as a misconception of the fairness of the laws of chance. One major impact on the financial market is that investors suffering from this bias are likely to be biased towards predicting reversals in stock prices. Gamblers' Fallacy arises when investors inappropriately predict that trend will reverse and are drawn into contrarian thinking. Gamblers' Fallacy is said to occur when an investor operates under the perception that errors in random events are self-correcting. For instance, if a fair coin is tossed ten times and it land on heads each time, an investor who feels that the next flip will result in tails can be said to be suffering from this bias. Perhaps the most bizarre argument for being bullish is the belief that markets can't go down for four years in a row. This is a prime example of the Gamblers' Fallacy, Montier (2003).

The belief that a small sample can resemble the parent population from which it is drawn is known as the "law of small numbers" (Rabin, 2002; Statman, 2009) which may lead to a Gamblers' fallacy (Barberis & Thaler, 2003). More specifically, in stock market, Gamblers' fallacy arises when people predict inaccurately the reverse points which are considered as the end of good (or poor) market returns (Waweru et al., 2008). In addition, when people subject to status quo bias, they tend

to select suboptimal alternative simply because it was chosen previously (Kempf & Ruenzi, 2006). Gamblers' fallacy is associated with the situation where investors tend to predict a reverse of a particular trend. In most situations, it leads investors to anticipate the end of a good or bad market performance. Thus investors who are biased to a status tend to choose an alternative regardless of whether or not the choice is optimal (Kempf & Ruenzi, 2006).

Regret Aversion

Regret Aversion is a psychological error that arises out of excessive focus on feelings of regret at having made a decision, which turned out to be poor, mainly because the outcomes of the alternative are visibly better for the investor to see. The root cause of this type of error is the tendency that individuals hate to admit their mistakes. Because of suffering from this bias, investors may avoid taking decisive actions for the fear that whatever decisions they make take will be sub-optimal in Hindsight. One potential downside is that this could lead investors into holding onto a losing position for too long, because of unwillingness to admit and rectify mistakes in a timely manner. Another downside is that it can stop investors from making an entry into the market when there has been a downtrend, which is showing signs of ending, and signals that it is a good time to buy. The Fear of Regret happens often when individuals procrastinate while making decisions. Various psychology experimental studies suggest that regret influences decision-making under uncertainty. People who are regret averse tend to avoid distress arising out of two types of mistakes; errors of commission – which occur as a result of misguided action, where the investor reflects on this decision and rues the fact that he made it, thus questioning his beliefs; errors of omission – which occur as a result of missing an opportunity which existed, (Pompian, 2006).

Regret is an emotion occurs after people make mistakes. Investors avoid regret by refusing to sell decreasing shares and willing to sell increasing ones. Moreover, investors tend to be more regretful about holding losing stocks too long than selling winning ones too soon (Forgel & Berry, 2006). Regret avoidance may also result in what is known as herding behavior. Shiller (2007) outlines psychological experiment by Deutsh & Gerrard where the human tendency to concur with the majority view was shown. In the experiment, people questioned their own opinions and found everybody disagreed with it. These human tendencies are individually sensible, but collectively can lead to irrational and herding behavior. Any investor may feel more comfortable investing in a popular stock if everybody else believed that it is a good one however responsibility of it falling will be shared with the other investors who originally expected it to do well.

Real Estate Prices

In the current context, real estate prices are not regulated by any authority. Real estate investments and prices are good measures for reflecting expected real estate demand, and serve as good predictors of economic growth, (Frank, 2011). The "real estate" market and industry is considered to include land and improvements, their selling and rental prices, the economic rent of land and returns on buildings and other improvements, and the construction industry.

Although real estate values are influenced by the supply and demand for properties in a given location and the replacement cost of developing new properties, the income approach is the most common valuation technique for investors. The income approach provided by appraisers of commercial properties and by underwriters and investors of real estate-backed investments is very similar to the discounted cash flow analysis

conducted on equity and bond investments, (Jennergren, 2011).

Empirical Review

Overconfidence

They added that those who bought at the peak listed their homes for sale at 25% to 35% higher than fair market value in hopes of avoiding regret aversion. This behavior caused their homes to remain on the market much longer than sellers who purchased more recently and had more realistic asking prices. Rational behavior can also be deviated from when a person's private information is confirmed by an independent, objective external market source. Wang, Zhoa, Chan, and Chau (2000) demonstrate that developers become over-confident and that their over-confidence leads to over-building. These actions are found to cause excessive volatility in the real estate sector and even affect real estate cycles.

Study by Mayer and Genesove (2001) from downtown Boston in the 1990s show that loss aversion determines seller behavior in the housing market. They established that condominium owners subject to nominal losses 1) set higher asking prices of 25-35 percent of the difference between the property's expected selling price and their original purchase price; 2) attain higher selling prices of 3-18 percent of that difference; and 3) exhibit a much lower sale hazard than other sellers. They further point out that list price results were twice as large for owner-occupants as investors, but hold for both. Their findings are consistent with prospect theory and help explain the positive price-volume correlation in real estate markets behavior in the Boston market.

Herding Effect

Studies by Luong, (2011) in Vietnam on behavioral factors influencing individual investors' decision making and performance revealed an effect of

behavioral finance. The research concluded by giving five behavioral factors that impact the investment decisions of individual investors at the Ho Chi Minh Stock Exchange namely: Herding, Market Prospect, Overconfidence, gamble's fallacy, and Anchoring-ability bias. The herding factor includes four behavioral variables: following the decisions of the other investors (buying and selling; choice of trading stocks; volume of trading stocks; speed of herding). The market factor consists of three variables: price changes, market information, and past trends of stocks.

Using databases of more than 680,000 retail investor transactions at the Nairobi Securities Exchange between 2005 – 2007, Riaga (2008) study shows that trades are systematically correlated and individuals buy (or sell) in concert with noise trader models collectively the findings of his study support a role for investor sentiment in the formation of stock returns. Otieno (2012) in a study of investor psychology on investment decision making at Nairobi Securities Exchange established that although investors tend to put clear the objectives of their investment to steer investment decisions to ensure that they get returns from their investments, psychological processes also influence the kind of an investment an individual would want to engage in. In a study that was examining the effect of financial information on investment in shares for Kenyan retail investors, applying the behavioral finance theory. The traditional Efficient Market Hypothesis was deficient to explain investor behaviors in the capital markets Aroni, 2014.

Gamblers Fallacy

Seiler & Lane (2010), examined the degree of mental accounting and false reference points in the property markets when moving from holding a real estate investment in isolation versus holding the asset as part of a mixed-asset portfolio their results demonstrate that mental accounting is prevalent amongst investors in the real estate market. Seller

and Seilcr (2010) in their study of mental accounting and false reference points revealed that mental accounting is commonplace and investors focus on breaking point as a reference point. Other authors who have used mental accounting to explain the role of behavioral factors in property price dynamics include Case and Shiller (2009, and 2004) and Shiller (2007). They all conclude that investors form expectations about growth in property price and use that expectation as a basis for the asking price clearly disregarding market forces.

A research hypothesis that the existence of speculative price bubbles in the real estate market is impossible when not accompanied by behavioral factors was put forward by Brezezicka and Winsniewski (2014) in a study of the price bubble in the real estate market by behavioral factors. In conclusion the assumed considerations indicated that the housing price bubble could not exist in the real estate market (REM) if its formation was not accompanied by behavioral aspects, Brzezicka and Winsniewski (2014). The study was conducted based on the global crisis environment using the findings of behavioral science.

Regret Aversion

Bokhari and Geltner (2010) in their paper on loss aversion and anchoring in commercial real estate market data based on all U.S. sales of commercial property greater than $5,000,000 from January 2001 through December 2009 found that loss aversion plays a significant role in the endeavor of investors in commercial real estate they also find that more experienced investors, and larger more sophisticated investment institutions, exhibit at least as much loss aversion endeavor as less experienced or smaller firms.

In Kenya, studies have been done on property pricing determinants Marete (2011) found out that the key determinants of real estate property prices in Kiambu Municipality in Kenya were location of a real estate property and estate agents influence on

the prices. The study concluded that prices in the real estate market are dictated by a different set of forces unlike other markets where price are determined by forces of demand and supply. According to Makena (2012) in her study of determinants of residential real estate prices in Nairobi she suggests that the level of money in supply and information gave a better predictor of the real estate market on real estate prices.

METHODOLOGY

The study used a descriptive research design. A descriptive study is concerned with finding out who, what, where, when, or how much (Cooper & Schindler, 2006). The target population of this study was real estate agents in Kiambu County. The following Regression Model was used to analyze the effect of behavioural bias on real estate prices in Kenya (a case of real estates in Kiambu County).

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

Where:-

Y = Real Estate Market Prices

X_1 = Overconfidence Bias

X_2 = Herding Effect

X_3 = Gamblers Fallacy

X_4 = Regret Aversion

b_0 = y intercept

e = error

FINDINGS

Overconfidence Bias

Respondents were required to indicate the extent to which they agreed to various aspects on overconfidence bias and its influence on real estate market prices. Items were measured on a five point

Likert-Type scale ranging from 1 being "Strongly Disagree" to 5 being "Strongly Agree". Means of between 2.850 - 4.700 and standard deviations of between 0.4700- 1.3870 were registered. The study findings therefore revealed that majority of the respondents agreed that lack of market information hinder them from making sound investment decisions to a great extent (4.700). They further agreed that the market information is important for their real estate investment (4.650). However, it was clear from the research findings that the respondents agreed that they were able to anticipate the end of good or poor market to a moderate extent (2.850). The findings were as presented in Table 1.

Table 1: Overconfidence Bias

Aspects	Mean	Std. Deviation
I believe that my skills and knowledge of real estate market can help me to outperform the market.	3.100	.7180
I am normally able to anticipate the end of good or poor market.	2.850	1.3870
I believe that my skills and knowledge of the real estate market are sufficient to make sound investment decisions.	4.050	.6860
I have the over-reaction to price changes of real estate.	3.750	.7160
Market information is important for my real estate investment.	4.650	.4890
Lack of market information hinder me from making sound investment decisions	4.700	.4700

The results were in line with earlier studies; Graham et al. (2009) find that wealthier and highly educated investors are more likely to perceive themselves as competent, implying overconfidence. On the other hand, Ekholm and Pasternack (2007) confirm that investors with smaller portfolios are more overconfident compared to investors with larger portfolios as these investors are more experienced and wealthier. Hence, we hypothesize that sophisticated investors are less prone to overconfidence.

Herding Effect

Respondents were further required to indicate the extent to which they agreed to various aspects on the herding effect and its influence on real estate market prices. Items were measured on a five point Likert-Type scale ranging from 1 being "Strongly Disagree" to 5 being "Strongly Agree". Means of between 3.050 - 4.250 and standard deviations of between 0.4100- 1.3530 were registered. The study findings therefore revealed that majority of the respondents agreed that they consider carefully the price changes of real estate that they intend to invest in to a great extent (4.250). They further agreed that they tend to treat each element of their investment portfolio separately to a great extent (4.200). However, it was clear from the research findings that the respondents were of the opinion that they usually react quickly to the changes of other investors' decisions and follow their reactions to the real estate market to a moderate extent (3.050). The findings are as presented in Table 2.

Table 2: Herding Effect

Aspects	Mean	Std. Deviation
Thinking hard and for a long time about something gives me little satisfaction	3.600	1.3530

	Mean	SD
Other investors' decisions on choosing real estate types have impact on my investment decisions.	4.050	.6050
Other investors' decisions on real estate volume have impact on my investment decisions.	3.700	.7330
Other investors' decisions of buying and selling real estates have impact on my investment decisions.	3.850	.4890
I usually react quickly to the changes of other investors' decisions and follow their reactions to the real estate market.	3.050	1.1460
I tend to treat each element of my investment portfolio separately.	4.200	.4100
I consider carefully the price changes of real estate that I intend to invest in	4.250	.4440

This is in agreement with earlier studies; Waweru et al. (2008) propose that herding can drive stock trading and create the momentum for stock trading. However, the impact of herding can break down when it reaches a certain level because the cost to follow the herd may increase to get the increasing abnormal returns. Waweru et al. (2008) identify stock investment decisions that an investor can be impacted by the others: buying, selling, choice of stock, length of time to hold stock, and volume of stock to trade. Waweru et al. (2008) conclude that buying and selling decisions of an investor are significantly impacted by others' decisions, and herding behavior helps investors to have a sense of regret aversion for their decisions. For other decisions: choice of stock, length of time to hold stock, and volume of stock to trade, investors seem to be less impacted by herding behavior. However, these conclusions are given to the case of institutional investors; thus, the result can be different in the case of individual investors because, as mentioned above, individuals tend to herd in their investment more than institutional investors.

Gamblers Fallacy

Respondents were further required to indicate the extent to which they agreed to various aspects on gamblers fallacy and its influence on real estate market prices. Items were measured on a five point Likert-Type scale ranging from 1 being "Strongly Disagree" to 5 being "Strongly Agree". Means of between 2.250 – 4.150 and standard deviations of between 0. 3660- 0.9510 were registered. The study findings therefore revealed that majority of the respondents agreed that they normally anticipate good market returns before they invest and they put past trends of real estate prices under their consideration for investment decisions to a great extent (4.150). They further agreed that they normally speculate gains on real estate prices as compared to their original capital investment to a great extent (4.100). However, it was clear from the research findings that some of the respondents were of the opinion that they ignore the connection between different investment possibilities to a moderate extent (2.250). The findings are as presented in Table 3.

Table 3: Gamblers Fallacy

Aspects	Mean	SD
I normally fix a target price for buying/selling in advance	3.650	.8130
I am averse to uncertainties	2.800	.9510
My investment decisions are influenced by popular opinion about the market	4.000	.7250

	Mean	SD
My decisions are based on opinions of friends and colleagues	2.950	.8260
I normally anticipate good market returns before I invest	4.150	.5870
I put the past trends of real estate prices under my consideration for investment decisions	4.150	.3660
I ignore the connection between different investment possibilities	2.250	.4440
I normally speculate gains on real estate prices as compared to their original capital investment	4.100	.6410

The findings were in line with earlier studies; the belief that a small sample can resemble the parent population from which it is drawn is known as the "law of small numbers" (Rabin, 2002; Statman, 2009) which may lead to a Gamblers' fallacy (Barberis & Thaler, 2003). More specifically, in stock market, Gamblers' fallacy arises when people predict inaccurately the reverse points which are considered as the end of good (or poor) market returns (Waweru et al., 2008). In addition, when people subject to status quo bias, they tend to select suboptimal alternative simply because it was chosen previously (Kempf & Ruenzi, 2006). Gamblers' fallacy is associated with the situation where investors tend to predict a reverse of a particular trend. In most situations, it leads investors to anticipate the end of a good or bad market performance. Thus investors who are biased to a status tend to choose an alternative regardless of whether or not the choice is optimal (Kempf & Ruenzi, 2006).

Regret Aversion

Respondents were further required to indicate the extent to which they agreed to various aspects on regret aversion and its influence on real estate market prices. Items were measured on a five point Likert-Type scale ranging from 1 being "Strongly Disagree" to 5 being "Strongly Agree". Means of between 2.650 – 3.700 and standard deviations of between 0.7330- 1.3730 were registered. The study findings therefore revealed that majority of the respondents agreed that they have made an investment decision to buy or sell a real estate that that they still regret having made to a great extent (3.700). They further agreed that they are holding to their investments because they know the prices will revert soon and they avoid selling real estate that have decreased in value and readily sell real estate that have increased in value to a greater extent (3.550). However, it was clear from the research findings that some of the respondents were of the opinion that they avoid making decision for fear of regretting on the success of their investments to a moderate extent (2.650). The findings are as presented in Table 4.

Table 4: Regret Aversion

Aspects	Mean	SD
I have made an investment decision to buy or sell a real estate that I still regret having made	3.700	.7330
I avoid making/ taking positions in the real estate market for the fear that the outcome may be unfavorable	2.950	1.3170
I avoid making decision for fear of regretting on the success of my investments	2.650	.9880
I normally avoid making investment decisions for fear of a loss	3.100	1.
I am holding to my investments because I know the prices will revert soon	3.550	.9990

I avoid selling real estate that have decreased in value and readily sell real estate that have increased in value	3.550	.8260

Shiller (2007) outlines psychological experiment by Deutsh & Gerrard where the human tendency to concur with the majority view was shown. In the experiment, people questioned their own opinions and found everybody disagreed with it. These human tendencies are individually sensible, but collectively can lead to irrational and herding behavior. Any investor may feel more comfortable investing in a popular stock if everybody else believed that it is a good one however responsibility of it falling will be shared with the other investors who originally expected it to do well.

Real Estate Market Prices

Respondents were finally required to indicate the extent to which they agreed to various aspects on

real estate market prices in Kenya. Items were measured on a five point Likert-Type scale ranging from 1 being "Strongly Disagree" to 5 being "Strongly Agree". Means of between 1.700 – 3.650 and standard deviations of between 0.4700- 1.0500 were registered. The study findings therefore revealed that majority of the respondents agreed that real estate in Kenya are expensive to a great extent (3.650). They further agreed that real estate prices are predictable to a great extent (2.500). On the contrary, it was clear from the research findings that some of the respondents were of the opinion that real estate in Kenya are cheap to a moderate extent (1.700). The findings are as presented in Table 5.

Table 5: Real Estate Market Prices

Aspects	Mean	SD
Real estate prices are affordable in Kenya	2.050	1.0500
Real estate in Kenya are cheap	1.700	.4700
Real estate in Kenya are expensive	3.650	.9880
Real estate prices are predictable	2.500	.8890
Real estate prices are regulated	2.000	1.0260
Information on real estate prices is known to me	2.350	.8130

Although real estate values are influenced by the supply and demand for properties in a given location and the replacement cost of developing new properties, the income approach is the most common valuation technique for investors. The income approach provided by appraisers of commercial properties and by underwriters and investors of real estate-backed investments is very similar to the discounted cash flow analysis conducted on equity and bond investments, (Jennergren, 2011).

In Kenya, studies have been done on property pricing determinants Marete (2011) found out that the key determinants of real estate property prices

in Kiambu Municipality in Kenya were location of a real estate property and estate agents influence on the prices. The study concluded that prices in the real estate market are dictated by a different set of forces unlike other markets where price are determined by forces of demand and supply. According to Makena (2012) in her study of determinants of residential real estate prices in Nairobi she suggests that the level of money in supply and information gave a better predictor of the real estate market on real estate prices.

Regression Analysis

Regression Model

Table 6 shows the results of regression coefficients which reveal that a negative effect was reported for all the behavioural bias effect under study apart from overconfidence bias**.**

Table 6: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	3.009	1.071		2.809	0.013
Overconfidence Bias	0.736	0.013	0.684	5.670	0.000
Herding Effect	-0.128	0.014	-0.123	-.918	0.373
Gamblers Fallacy	-0.548	0.0179	-0.380	-3.063	0.008
Regret Aversion	-0.325	0.079	-0.554	-4.118	0.001

The Standardized Beta Coefficients give a measure of the contribution of each variable to the model. A large value indicates that a unit change in this predictor variable has a large effect on the criterion variable. The t and Sig (p) values give a rough indication of the impact of each predictor variable, a big absolute t value and small p - value suggests that a predictor variable is having a large impact on the criterion variable. Overconfidence bias has standardized beta coefficients of 0.736 while herding effect has a standardized beta coefficient of -0.128. This means that for every unit increase in overconfidence bias we expect a 0.736 increase in real estate market prices while for every unit increase in herding effect we expect a -0.128 decrease in real estate market prices. Gamblers fallacy and regret aversion had negative standard beta coefficients of -0.548 and -0.325 respectively. This means that for every unit increase in gamblers fallacy we expect a -0.548 decrease in real estate market prices while in every unit increase in regret aversion we expect a -0.325 decrease in real estate market prices. Based on p-values all variables under study are significant.

The equation for the regression model is expressed as:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_3 X_4 + £$$

$$Y = 3.009 + 0.736 X_1 - 0.128 X_2 - 0.548 X_3 - 0.325 X_4 + 1.071$$

Where

β is a correlation coefficient

Y = Real Estate Market Prices

X_1 = Overconfidence Bias

X_2 = Herding Effect

X_3 = Gamblers Fallacy

X_4 = Regret Aversion

From this study it was evident that at 95% confidence level, all the variables produce statistically significant values for this study (high t-values, $p < 0.05$) apart from herding effect which had a p value of 0.373 and therefore insignificant. A positive effect is reported for overconfidence bias

meaning that an increase in overconfidence bias increases real estate market prices.

However, herding effect, gamblers fallacy and regret aversion shows negative effect to the real estate market prices, an indication that an increase in herding effect, gamblers fallacy and regret aversion decreases real estate market prices in Kenya. The results of the regression equation show that, at all the other factors are held constant, an increase in 1- point of independent variables real estate market prices is predicted to increase by 3.009.

Coefficient of Multiple Determination

The coefficient of determination (R^2) and correlation coefficient (R) shows the degree of association between real estate market prices and behavioral bias aspects under study. The research findings indicated that the coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variables) R^2 equals 0.795, that is, behavioral bias explains 79.5% of observed change in real estate market prices. The P- value of 0.000 (Less than 0.05) implies that the regression model is significant at the 95% significance level. From this study it is evident that at 95% confidence level, the variables produce statistically significant values and can be relied on to explain real estate market prices in Kenya. The findings are as shown in Table 7. The findings revealed that there is positive relationship between aspects under study (overconfidence bias, herding effect, gamblers fallacy, and regret aversion) and real estate market prices.

Table 7: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
.982	.795	.740	.18248	14.550	0.000

Overall Significance of Regression Model (ANOVA)

Table 8 showed the results of ANOVA test which revealed that the combined independent variables have significant effect on real estate market prices in Kenya. This can be explained by high F values (14.550) and low p values (0.000) which is less than 5% level of significance. The adjusted R square value of, R^2 = 0.740 in table 4.14, also indicates that the independent variables in the multiple linear regression model could explain for approximately 74.0% of the variations in real estate market prices

in Kenya. The study therefore establishes that overconfidence bias, herding effect, gamblers fallacy, and regret aversion significantly influenced the real estate market prices in Kenya. All the variables were therefore significant. This means that all these were factors and are a notable difference in the real estate market prices in Kenya. However there other factors other than the ones examined in the study that constitutes the remaining 26.0% which could not be explained by the study.

Table 8: Analysis of Variance (ANOVA)

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1.938	4	.485	14.550	.000

Residual	0.499	15	.033
Total	2.437	19	

The results showed that there is significance relationship between independent variables and dependent variable under study. All the variables under study affected real estate market prices in Kenya positively and they can be statistically relied upon to determine the real estate market prices in Kenya.

CONCLUSIONS AND RECOMMENDATIONS

The findings of the study revealed that overconfidence bias positively influenced real estate prices in Kenya. The study findings revealed that majority of the respondents agreed that lack of market information hinder them from making sound investment decisions to a great extent. They further agreed that the market information is important for their real estate investment. However, it was clear from the research findings that the respondents agreed that they were able to anticipate the end of good or poor market to a moderate. Results of the inferential statistics such as unstandardized regression coefficients show a positive effect on real estate prices in Kenya. This further indicates that overconfidence bias had a significant effect on real estate prices in Kenya as indicated by the low p values. Regression model shows that there is positive relationship between overconfidence bias and real estate prices in Kenya.

The findings of the study revealed that herding effect positively influenced real estate prices in Kenya. The study findings therefore revealed that majority of the respondents agreed that they consider carefully the price changes of real estate that they intend to invest in to a great extent. They further agreed that they tend to treat each element of their investment portfolio separately to a great extent. However, it was clear from the research findings that the respondents were of the opinion that they usually react quickly to the changes of other investors' decisions and follow their reactions to the real estate market to a moderate extent. Results of the inferential statistics such as unstandardized regression coefficients show a positive effect on real estate prices in Kenya as revealed by the low p values. Regression model shows that there is positive relationship between herding effect and real estate prices in Kenya.

The findings of the study revealed that gamblers fallacy influenced real estate prices in Kenya. The study findings therefore revealed that majority of the respondents agreed that they normally anticipate good market returns before they invest and they put past trends of real estate prices under their consideration for investment decisions to a great extent. They further agreed that they normally speculate gains on real estate prices as compared to their original capital investment to a great extent. However, it was clear from the research findings that some of the respondents were of the opinion that they ignore the connection between different investment possibilities to a moderate extent. Results of the inferential statistics such as unstandardized regression coefficients show a positive effect on real estate prices in Kenya as indicated by the low p values. Regression model shows that there is positive relationship between gamblers fallacy and real estate prices in Kenya.

The findings of the study reveals that regret aversion positively influenced real estate prices in Kenya. The study findings therefore revealed that majority of the respondents agreed that they have made an investment decision to buy or sell a real estate that that they still regret having made to a

great extent. They further agreed that they are holding to their investments because they know the prices will revert soon and they avoid selling real estate that have decreased in value and readily sell real estate that have increased in value to a greater extent. However, it was clear from the research findings that some of the respondents were of the opinion that they avoid making decision for fear of regretting on the success of their investments to a moderate extent. Results of the inferential statistics such as unstandardized regression coefficients show a positive effect on real estate prices in Kenya as revealed by the low p values. Regression model shows positive relationship between regret aversion and real estate prices in Kenya.

Conclusion

The objective of this study was to evaluate the effect of behavioural bias on real estate prices in Kenya. Based on previous studies, the aspects were expected to have a positive effect on real estate prices in Kenya. The study findings indicate that there is a significant positive relationship between the factors under study and real estate prices in Kenya. From the research findings and the answers to the research questions, some conclusions can be, made about the study.

The behavioral bias calls for a serious concern in any business investment, the more reason why this study turned a beam light on the subject matter. From the findings of the study, it was revealed that behavioral biases influence real estate prices in Kenya. Thus the study concludes that behavioral biases influence real estate prices in Kenya. Regarding demographic characteristics of the respondents, the study concluded that behavioral biases is an issue that is crosscutting regardless of gender, marital status, age, education level and so on. This is because at least all of the demographic categories represented in the questionnaire had a positive response. Based on objective one, the

study found out that there was a significant relationship between overconfidence bias and real estate prices in Kenya. Thus the study concludes that overconfidence affects real estate prices in Kenya positively. Regarding objective two, the study found out that there is insignificant relationship between herding effect and real estate prices in Kenya. Thus the study concludes that herding does not influences real estate prices in Kenya. In reference to objective three, the study found out that there is a significant relationship between gamblers fallacy and real estate prices in Kenya. Thus the study concludes that gamblers fallacy influences real estate prices in Kenya. On objective four, it was found out that regret aversion have a significant relationship with real estate prices in Kenya. Thus the study concludes that regret aversion influence real estate prices in Kenya.

From the findings, it can be concluded that investors in the Kenyan property market are influenced by behavioral factors. Herding instinct and the gamblers fallacy are the most dominant influencing behaviors. Thus these factors will fall into play and hence influence property prizes. This explains why properties would trade beyond the expert's valuation. Further, Kenyan property investors sometimes use predictive skills, have high expectations on property returns and uses property price as a reference point in trading.

Recommendations

Based on the findings of this research it is recommended that the individual investors need to analyse the investment factors carefully using the reasonable business knowledge before making an investment decision. The investors should also be able to interpret the market and economic indicators of various industries and firms in the market since they influence the performance of the real estate investment. Investors do also need to be open- minded while making their investment

decisions and desist from holding onto the past notions with hindsight that they may reflect the future due to the fact that the real estate market is a dynamic market with new developments coming in so quickly. They should evaluate all the variables in the environment instead of considering only one variable.

The investors need to evaluate market very well before they make investment decisions. Before doing investments there is need for investors to have enough knowledge about the market so that they can be able to make wise decisions. When prices changes there is no need for overreaction. Investors need to gather a lot of information about the market so as to make sound investment decisions

Investors should not react quickly to changes done by other investors and they should not be swayed in investing by other people other than their own investment decisions. For investors to be satisfied with their investment decisions they need to make quick but positive decision on their investments. They should not allow other investors impact their investment decisions negatively. The investors need to consider carefully market dynamism before they make their investments.

There is need for the investors to explore various investment possibilities before they commit themselves. Uncertainties in any investment is inevitable and investors in real estate market need to embrace any eventualities in the market. Though friends and colleagues are good in giving advice on investment decisions, their investment advice should not impact you negatively. In ever investment flexibility is very paramount to allow for negotiations. Popular opinion about the market should not influence investment decisions but rather enough knowledge about the market should

carry the day. There is need for the investors to anticipate good market returns before they make their investments and also put into considerations past trend about the real estate market before they invest.

Investors need to make investment decision that the will not regret after investment. Business is about the risk and investors should not avoid making/ taking positions in the real estate market for the fear that the outcome may be unfavorable. It is good to be always positive in investments so that even if the market is not favourable you still have hope for better future. It is good to learn market dynamism so as to make favourable investment decisions at the right time.

There is need to make real estate prices cheap, predictable, affordable and accessible. The real estate regulatory authorities must take into account the behavioral factors affecting the real estate prices and come up with proper regulations which should be incorporated to help in reducing irrational behavior in the real estate industry. Policy makers in real estate industry should focus on creating awareness and conditions through which behavioral factors have the least amount of impact on the real estate prices. This would also ensure that the economy is cautioned from a market crash.

Areas for Further Research

The study confined itself to real estate in Kiambu County. This research therefore should be replicated in all other counties to establish a relationship between behavioural bias factors and real estate market prices and compare results. Further research can be undertaken using other variables apart from which are studied to measure the effect of behavioural bias on real estate market prices.

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