



Relationship between heuristic based biases and the performance of real estate market in Kenya

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Abstract

The Kenyan real estate market has delivered greater price stability than all international markets surveyed. Despite this, Kenya has the lowest real estate returns in the Eastern Africa. This study attempted to determine the contribution of heuristic based behavioural biases in influencing real estate performance in Kenya using a sample of 353 individual investors. To test the hypothesis, Model R2, ANOVA statistics and regression coefficients were generated and interpreted. The results indicate that heuristic bias negatively influence the performance of real estate industry. The findings provide an eye-opener and basis of appreciation of the effect of behavioural biases on the real estate market. Real estate investors can use these findings to understand the market dynamics and incorporate behavioral factors in analyzing the markets performance.

Keywords: real estate, heuristic biases, investor behavior, availability bias, anchoring bias, overconfidence bias

Introduction

Kahneman (2011) ^[9] describes heuristics as easy rules of the thumb that give details on how citizens make decisions, arrive at judgments as well as resolve problems when faced with complex situations or in cases where the available information is incomplete. While using these rules of the thumb, one may arrive at positive conclusions nonetheless in some cases this may result to cognitive biases that are systematic. Tversky, & Kahneman, (1979) ^[8] identified availability heuristic which refers to the fact of establishing the probability of an occasion occurring depending on the easiness of remembering previous alike cases. In other words individuals make decisions based on previous occurrences and how simple that outcome is to visualize.

Tversky and Kahneman (1981) determined that heuristics have an influence on the process of human decision making. Tversky explains heuristic to be a strategy that could be practical to diversity of troubles, that regularly—but not for all time—give up a right resolution. Investors frequently make use of heuristics (or else shortcuts) so as to minimize solving of complex problem to more easy critical operations (Tversky and Kahneman, 1981). Under heuristic decision making process, shareholders get things out for themselves through trial and error leading to the growth of the rule of the thumb. According to Brabazon, (2000) ^[3] rules of the thumb are used by individuals to make decisions in uncertain as well as complex environments.

Investors are not able to internalize all the data that they are offered with on every day basis. Subash (2012) ^[15] noted that the experience gained via the procedure of doing something results to a feeling of how something works. Such process generates rules of the thumb which could then be utilized when an individual faces alike situations. This phenomenon is referred to as the utilization of heuristics. The phenomenon is particularly relevant in current trading, as the number of securities and the quantity of information available in the

market has increased tremendously. Investors use heuristics to enable them make speedy decisions as opposed to reasonably processing the offered information. Making use of heuristics is attractive since it saves time during decision making while the main drawback is the fact that the decision arrived at is wholly dependent on previous experience. However, Shefrin (2000) ^[13] note that financial models that are traditional assume the omission of heuristics, plus that decision making is based on rational statistical tools.

Residential real estate investments in Kenya earn lower returns compared to Tanzania, where investors in residential real estate earn an average of 6% in return in spite of the fact that Tanzania population in the capital City, is way above that of Kenya by 28.5% (Knight Frank, 2015) ^[10]. Overall, Uganda real estate investors earn higher yields irrespective of the type of real estate investment compared to Kenya. These contrasts beg the question, are the returns of real estate market driven by objective market fundamentals? The fact that Kenya and specifically Nairobi, with the lowest residential investment returns is the fastest growing, could be a pointer that investors in residential real estate are not driven by sound and rational behaviour in making investment decisions. It could be argued that the mainly reasonable explanation for the theatrical raise in real estate prices cannot be found in investment finance fundamentals.

The research sought to explore the influence of heuristic based behavioural biases on the real estate performance in Kenya.

Literature Review

Salzman & Zwinkels (2013) ^[11, 12] carried out an analysis of the effect of property market inefficiencies from a behavioural perspective in the UK. They explained this from two perspectives; the importance of housing as well as the different stakeholders within the market property. The review of both corporate shareholders and household showed that cognitive biases for instance over-confidence and over-

optimism can clarify divergences from rationality. This study also found that emotions as well as behavior are entrenched in the process of decision in the market of real estate either as an investor or a consumer is irrefutable and that the evaluator plays a vital role in determining prices of property: Real observed processes of appraisal mainly deviate from the agreed process of normative. Salzman & Zwinkels (2013) ^[11, 12] also found out that the nonfinancial consumer perspective in the market of housing highlights emotional attachment and residential mobility towards houses. This study by Salzman & Zwinkels (2013) ^[11, 12] contributes to literature as it points out the potential behavioural biases in real estate investments. However the study did not contribute on the relevance of financial knowledge in investment decisions. Similarly, this study was carried out in a developed real estate market and also in a developed economy.

Glaeser (2013) ^[7] carried out an empirical analysis on the of investor rationality in the US housing markets. Using the “Gordonian” approach, which uses finance to establish the net present value of a property as well as the “Thunenite” approach which justifies prices by comparing local prices to the prices in similar geographic areas, Glaeser (2013) ^[7] determined that investors acted irrationally when making real estate investments. Studying the housing convulsions that occurred between 1996 and 2012 in the US, Glaeser attributes the rising real estate prices to the optimistic expectations where investors paid high prices with an optimistic assessment of future price growth. He noted that Americans speculated heavily on real estate and they paid high prices with optimistic expectations with the support of the credit market. Through extensive review of literature, Glaeser (2013) ^[7] found that the optimistic projections fail to materialize due to the investor inability to forecast and the emotional expectations. The study contributes by ascertaining the psychological factors for real estate speculation. However the study did not contribute in terms of examining the different behavioural characteristics that investors and potential investors portrayed while investing in real estate.

Bilgehan (2014) ^[2] also reviews Eichholtz and Yönder (2014) ^[4] who gauge overconfidence of CEO via their activities of corporate investment options, plus differentiate Real Estate Investment Truths (REITs) guided by CEOs who are overconfident from additional REITs. The researchers merge the information of REIT with a sample of approximately 8000 transactions of commercial real estate and produced forecasted figures for every property within the sample, and consequently compared the resulting forecasting's with the real prices of purchase as well as sales. The researchers developed a hedonic evaluation model of commercial assets to create forecasted prices for every transactions of real estate conducted by REITs, furthermore, relate the real prices of sales and purchase to these forecasting's, differentiating the transactions of REITs guided by CEOs who are overconfident from others. The researchers as well compute the difference between the calculated expected price and the actual price of transaction from a combined REIT transactions regression and a control model by other kinds of sellers and buyers, together with REITs for which they can't establish overconfidence. The researchers then contrasted the prices of residual transaction means for REITs with managers who were

overconfident and their counterparts who were not overconfident and did a second stage analysis of regression.

Methodology

Population, sample and data

This research utilized a process of multi-stage sampling in the choosing of the sample for this study. The target population is the real estate agents in Kenya. The population will be accessed through the registered real estate agents in Nairobi Kenya. However of the many and unknown real estate investors in Nairobi, there is that category of investors who are enlisted with real estate agents. This study used the real estate investors who are enlisted with the Estate Agents Registration Board (EARB) in Kenya. EARB is a regulatory body for estate agency practice in Kenya and maintains a list of all registered real estate agents. The study used the list of real estate agents to get in touch with investors. Out of the registered EARB list of 331, 86% (284) operate in Nairobi. The accessible real estate agents population is regarded as 284. In order to access these investors, a multi-phase process was used. Multi stage or multiphase sampling entails a process of selecting a sample in two or more successive stages (Gatara, 2010; Cooper and Schindler, 2011) ^[6].

To determine the size of the sample when the whole population is greater than 10,000 (n), Fisher *et al.* (1983) ^[5] recommend the use of equation below.

$$n = \frac{z^2 pq}{d^2}$$

The study used (0.5) to be the values of p and q in the formula. Fisher *et al.* (1983) ^[5] recommended that if there are no estimates available in population of target assumed to have the characters of importance, 50% should be utilized for the proportion of the target population with characteristic being measured. Based on the above equation, at 95% desired level of confidence, the size of the sample for this study (n) was determined as a minimum of 384 respondents.

This study used a sample size of the sample which was arrived at in two successive stages. First, the list of registered real estate agents operating in Nairobi, which is listed alphabetically, was used. This list has 284 REAs. From this list one investor each was selected giving a sample of 284 investors. In order to arrive at the remaining minimum of 100 respondents, a systematic random sampling was used. The 284 REA was divided by the required sample size of 100 REI. This process resulted into obtaining an investor from every 2nd REA in the list of 284. Similarly as in the first phase of sampling, all the second REA was used to provide the second investor. A total of 142 investors were obtained in the second phase. The total sample size of the investors for this study was therefore the total of 284 arrived at in the first phase and an additional 142 computed in the second phase, which was 426 REI. This was deemed appropriate since the minimum sample size statistically computed was 384 respondents. In social research, it is deemed more appropriate to oversample where the response rate is likely to be small. One of the reasons for low response rate in research is when the information sought is regarded as confidential or sensitive to the respondent. This study relied on real estate investors providing information on

the performance of their investment. This information could in business finance be regarded as quite confidential to the investors themselves. It was therefore appropriate to retain the oversampling of approximately 10% over and above the statistically determined minimum sample size of 384 respondents in order to increase the response rate.

For the study objective, statistical modeling was done through a series of procedures. First, factor analysis was done. Based on the output of the model parameters, the preferable model was selected. Secondly, bivariate regression was done and inferences drawn for the objective. After the bivariate regression, the resultant model residual was used to test homoscedasticity and assess the suitability of the bivariate model between heuristic bias and investment performance (Shevlin & Miles, 2010) [14]. For the bivariate regression, model fitness was assessed to determine the coefficient of determination for the predictor on dependent variable. Further, one way analysis of variance (ANOVA) was presented to determine the specified model suitability.

To establish the influence of heuristic based behavioural biases on performance, bivariate regression expression was used. In this expression, (REP) is Real Estate Performance, α is the constant; β_1 is the rate of change of performance with a unit change in predictor and X_1 , the composite measure of Heuristic based behavioural biases.

$$REP = \alpha + \beta_1 X_1$$

Results and Discussion

The objective was to explore the influence of heuristic based behavioural biases on the real estate performance in Kenya. To achieve this objective, respondents were asked to indicate their level of agreement to various heuristic based behavioural biases. These activities included availability bias, anchoring bias and overconfidence bias in investment decisions. The study hypothesized that there was no statistically significant relationship between heuristic based behavioural biases and the real estate performance in Kenya. The results showed that there was a significant relationship between heuristic based behavioural biases on the real estate performance in Kenya. The null hypothesis; H_0 : Heuristic driven behaviour biases do not influence the real estate investment performance in Kenya, was rejected and the alternative hypothesis accepted. Using the standardized coefficient heuristic bias had a beta value of -0.350 with a t value of -0.473 and $p=0.000$. Since $p < 0.05$, we reject H_0 at 0.05 level of significance.

The rejection of the hypothesis (H_0) which explored the relationship between Heuristic driven behaviour biases and the real estate investment performance in Kenya, shows that the behaviour of investors will influence the performance of their investments. Heuristic biases were found to have a statistically significant influence on the human decision making process among real estate investors in Kenya. This is an indication that investors are not rational or markets may not be efficient and real estate investment performance may significantly deviate from fundamental values due to existence of irrational investors. The implication thus is that investors do not often evaluate their biases and the effect they have on performance hence they keep on suffering from the consequences of the same mistakes.

These findings reflect a similarity to the findings by Azouzi and Jarboui's (2012) [1] whose research examined the determinants of firms' investment structure introducing a behavioural perspective. In their research a theoretical analysis was made and results presented that CEO emotional biases highlights role (optimism, loss aversion, overconfidence) to explaining investment choice. Further the research showed that overconfidence negatively affects investment performance. Further studies by Salzman & Zwinkels (2013) [11, 12] on an analysis of the effect of inefficiencies in the property market from a behavioural perspective in the UK, found that both corporate investors as well as household showed that cognitive biases such as over-optimism and over-confidence explaining deviations from investment rationality and investment performance.

Recommendations

This study indicates that Heuristic based behavioural biases have a negative impact on investment performance. To avoid the negative impact of behavioural biases when evaluating investments, investors should avoid at barely looking at the risk and return characteristics of that individual investment. Rather, analyze how that particular investment will impact to the total portfolio performance, and determine whether it will enhance the total return, minimize risk, or both.

Behavioural finance is a contemporary way of analyzing and explaining the forces underpinning investment decisions the world over. In doing so, through the establishment of certain psychological patterns, behavioural finance seeks to detect behaviour that is inconsistent with the assumptions of investor rationality and market efficiency. This study has found that investor behaviour does influence portfolio performance for those investing in the real estate market in Kenya. The findings clearly indicate that heuristic based behavioural biases affect investors in the real estate market in Kenya and their effect on performance is significant. Therefore the study recommends that the government establishes a regulatory body that will come up with investment policies and regulations. These will be of help to investors when it comes to making investment decisions regarding to which areas of real estate investment to venture and for them to develop their own market niche. These policies and regulations will also be useful to the government when it comes to tax regulations and control of the real estate industry.

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