



## **INFLUENCE OF BEHAVIOURAL FACTORS ON REAL ESTATE PERFORMANCE IN KISII TOWN, KENYA**

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### **Abstract**

The purpose of this study was to establish the influence of behavioral factors on real estate performance in Kisii town, Kenya. It was established that behavioural factors have a high correlation with the growth of real estate and that behavioural factors predict 73.3 percent of the performance of real estate. The study also found out that herding has a positive significant influence on real estate performance and representativeness has a positive and significant influence on the performance of real estate. The study concludes that performance of real estate significantly depends on behavioural factors and recommends that mortgage financing institutions make mortgage financing more accessible to real estate developers. Mortgage institutions and academicians will use results from this study for decisions regarding lending to their customers to finance real estate and in encourage further studies in the area of real estate financing respectively.

*keywords: Behavioral factors, influence, real estate performance*

## 1. Introduction

Behavioral Finance, which contrasts to traditional finance and its assumptions of investor rationality and market efficiency is built upon cognitive psychology of how people think and the limits to situations when markets are inefficient (Ritter, 2003). Rather than using all available information to evaluate investments, investors filter out some information. Behavioral finance attempts to explain and increase understanding of the reasoning patterns of investors, including the emotional processes involved and the degree to which they influence the decision-making process (Ricciardi and Simon, 2000). Behavioral finance attempts to explain the issues relating to what, why, and how finance and investing process are constructed from a human perspective and therefore providing explanations to many stock market anomalies (Statman *et al.*, 2008).

A number of empirical studies have been carried out on behavioural finance factors influencing investment decisions; Sadi *et al.* (2010) in a study on the popular perceptual errors among investors and its connection with their personality using 200 investors in Tehran's stock market found that there is direct positive correlation between behavioural factors such as overconfidence bias and investment decisions. In another study, Gholizadeh *et al.* (2013) in a study on the effect of behavioral financial knowledge on the behaviors of the investors in Tehran Stock found that behavioural factors such as compatibility, familiar concept and event orientation positively and significantly influence investment decision making. Sharma and Vasakarla (2013) in a study on how overconfidence may affect the investment decision making of the individual investor found no relationship between overconfidence and investment decisions. Bashir *et al.* (2013) in an investigation on the impact of behavioural biases on investor's financial decision making in Pakistan found that psychological factors affect investment decisions differently. In regional studies, Chaffai and Medhioub (2014) in a study on the influence of behavioural factors on the performance of Tunisian stock market found that investors' subjective judgments and persistence of behavioural biases can give an explanation to the market inefficiency. The study singled out overconfidence and herding as factors greatly influencing performance of investments in the stock market.

The real estate sector in Kenya has grown at a high rate in recent years because of believe that investment in real estate is worthwhile because prices and rental incomes keep on increasing (Muthama, 2012). According to Ruitha (2014), prices of housing and prime land have skyrocketed, increasing at an annual rate of; 16% for apartments/flats, 28% for mansionettes and annual rents for selected markets increasing at the rate of 10% per annum (Aduda and Muimi,

2014). Despite this trend, real estate markets in Kenya are not well developed in terms of regulation. But a transformation is taking place, with Capital Markets Authority (CMA)'s introduction of Real Estate Investment Trusts (REITs) and on-going establishment of regulations that will enhance the opening up of trading in real estate properties (lands and buildings) at the NSE. Transactions in real estate properties have been taking place in Kenya among individual and institutional investors making the markets imperfect (Aduda and Muimi, 2011).

A research by United Nations Development Programme (UNDP) (2014) found that the lack of sufficient housing and the persistent rise in rental values in Kisii town has resulted in the sprawling of the town into the adjacent agriculturally rich lands. This implies that if unchecked, the agriculturally rich hinterland of Kisii will be exhausted by 2050 (UNDP, 2014). Muthama (2012) noted that the growth of the real estate industry in the smaller towns of Kenya seems not to follow any pattern with some towns experiencing faster growth than others. Kisii is such a town, (Kisii County, 2013). Statistics indicate that the real estate industry in Kisii is growing at a rate of 23% annually (Kisii County, 2014). This rate is much higher than the annual average rate of 16% in the country with up to 75% of these investments being in residential real estate. This skewed investment has resulted to high prices in office space in the town. This study therefore seeks to establish why this skewed investment has continued to persist despite demand for real estate showing contrary statistics.

## **2. Statement of the Problem**

The real estate markets have become inefficient especially in terms of real estate asset pricing. Cognitive psychological biases such as overconfidence, herding and representativeness have been observed by behaviorists to influence investment decisions, leading to sub-optimization of returns from such investments. This is more prevalent in the imperfect real estate industry with statistics indicating increase in investment for residential real estate to 75% compared to that of office at 25% contrary to the requirement of 50% for each sector. Furthermore, statistics indicate that up to 200,000 new housing units are required per annum in Kenya's urban areas and yet only 35,000 are produced indicating that there is a huge shortfall of housing units in urban areas. Most of this shortfall is in office space. Previous studies in investor behavior have concentrated in the organized security markets with minimal studies in the real estate industry. These studies find contradicting results on the effect of behavioral factors on investment decision making particularly in real estate investment decisions and performance. Therefore this study sought to establish influence of behavioral factors on real estate performance in Kisii town, Kenya.

### 3. Objectives of the Study

The main objective of this study was to establish influence of behavioral factors on real estate performance in Kisii town, Kenya. The Study was guided by the following specific objectives:

- (i) Establish the influence of overconfidence on real estate performance in Kisii town, Kenya;
- (ii) Assess the influence of frame dependence on real estate performance in Kisii town, Kenya;
- (iii) Analyse the influence of herding on real estate performance in Kisii town, Kenya; and
- (iv) Evaluate the influence of representativeness on real estate performance in Kisii town, Kenya

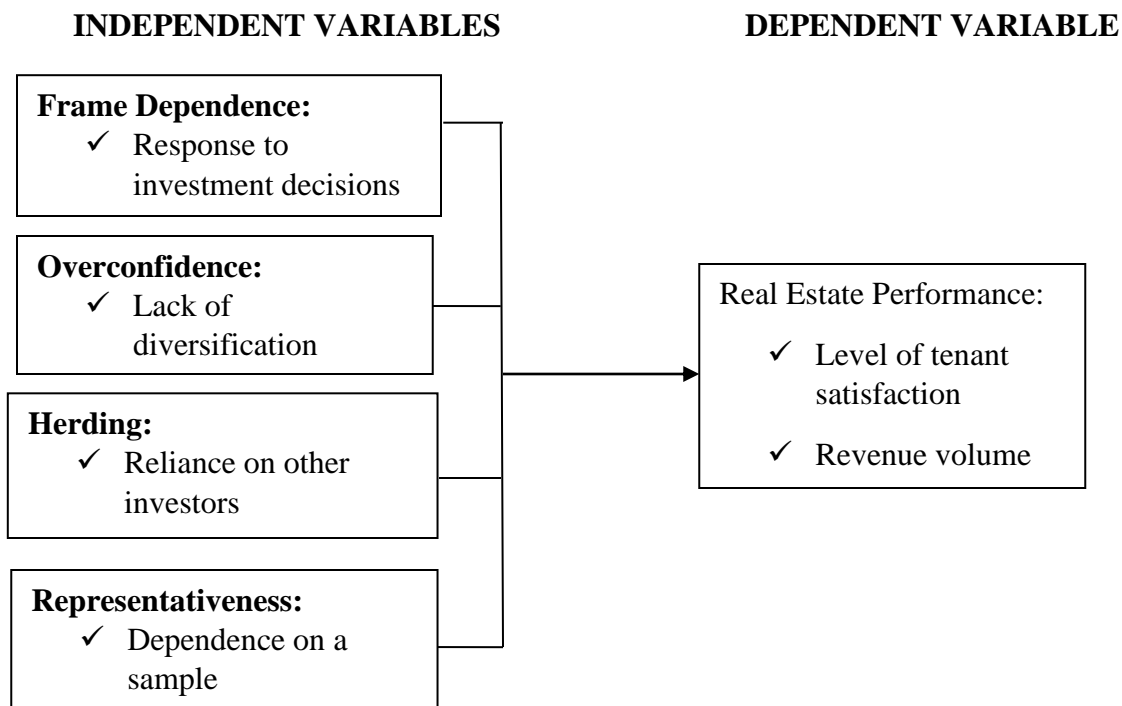


Figure 1 Conceptual Framework

### 4. Research Methodology

The study adopted a correlational research design. This is because the main purpose of the study was to establish how behavior financial factors correlate with investment in real estate. According to statistics available in the Housing Ministry of Kisii County Government, there are about 42 registered real estate investors in Kisii town with interests in commercial and residential

buildings. This formed the target population since they have the information on the factors that influence investment in the real estate industry. A correlational research method was chosen since it has the advantage of being suitable for distribution across a wide geographical area and to a large number of populations.

## RESULTS AND DISCUSSION OF FINDINGS

### 5. Level of Satisfaction on Real Estate Performance

To establish the level of satisfaction on the rate of growth of real estate in Kisii town, the respondents were asked to indicate their level of satisfaction on the rate of growth. The information is presented in table 1.

**Table 1 Level of Satisfaction Real Estate Performance**

	Frequency	Percent
Very Dissatisfied	3	7.5
Dissatisfied	5	12.5
Neither satisfied nor dissatisfied	6	15.0
Satisfied	20	50.0
Very Satisfied	6	15.0
<b>Total</b>	<b>40</b>	<b>100</b>

Table 1 indicates that most of the players in the real estate industry in Kisii town (50%) are satisfied about the rate of growth of the real estate industry in Kisii town. This is followed by the respondents who felt that the rate of growth of real estate in Kisii town was either very satisfactory (15%) or neither satisfactory nor satisfactory (15%). Only 3 respondents (7.5%) were very dissatisfied with the rate of growth of the real estate in Kisii. This implies that generally, most respondents (65%) were satisfied with the rate of growth of the real estate industry in Kisii town. Aduda and Muimi (2011) and Muthama (2012) also found that the rate of growth of the real estate industry in Kenya was satisfactory.

The study also set out to establish the main challenges facing the growth of real estate in Kisii town. The research grouped the challenges as being either low demand for the housing and office units, lack of adequate finance, lack of land for development or the lack of technical knowledge in the town. The findings are summarized in Table 2.

**Table 2: Challenges Facing Real Estate Performance**

<b>Main Challenge</b>	<b>Frequency</b>	<b>Percentage</b>
Low demand of houses	10	25.0
Lack of adequate finance	26	65.0
Inadequate Land	3	7.5
Low Technological Know-how	1	2.5
<b>Total</b>	<b>40</b>	<b>100</b>

Findings in Table 2 indicates that the main challenge facing real estate growth in Homa Bay town is finance (65%). Low demand for housing units was also cited as a challenge at 25%. Other challenges were lack of land (7.5%) and low technological know-how at 2.5%. This finding confirms studies by Atati (2014), Michuki (2010) and Kamau (2012) who established that finance was a major challenge to the growth of real estate in Kenya.

## **6. Behavioral Factors and Real Estate Performance**

The specific objectives of the study were to: establish the influence of overconfidence on real estate performance in Kisii town; assess the influence of frame dependence on real estate performance in Kisii town; analyse the influence of herding on real estate performance in Kisii town; and to evaluate the influence of representativeness on real estate performance in Kisii town. Before establishing this, the extent of each of the indicators of behavioural factors was sought and the findings are discussed in the sub-sections below.

## **7. Overconfidence among Real Estate Investors**

In order to establish the extent of overconfidence among the real estate investors, the respondents were asked to indicate on a Likert scale how several factors were responsible for their success in making investments in the real estate using the scale of 1 for To no extent; 2 for To a small extent; 3 for To a moderate extent; 4 for To a large extent; and 5 for To a very large extent. The findings are shown in Table 3.

**Table 3 Overconfidence among Real Estate Investors**

Factor	1	2	3	4	5	Mean	Std. Dev	Std. Error
Your overconfidence in knowledge of the real estate industry	1	4	4	6	25	4.250	0.219	0.230
Your overconfidence in your abilities to predict market rates	3	6	10	11	10	3.475	0.493	0.092
Your overconfidence in experience in the real estate market	7	7	6	10	10	3.225	0.345	0.129
Overconfidence in advice from professionals	9	7	10	3	11	3.000	0.128	0.297
Overconfidence in government support	11	13	9	4	3	2.375	0.989	0.291

The results in Table 3 indicate that the average extent of overconfidence among real estate investors in Kisii town is to a moderate extent as indicated by a weighted average mean of 3.265. Among the indicators of overconfidence, the real estate investors' overconfidence in their knowledge of the real estate industry was ranked as the indicator that was used to the largest extent as shown by the weighted average mean of 4.25. This implies that most operators in the real estate industry in Kisii town rate their overconfidence in the knowledge of the real estate industry highest. This is followed by the overconfidence in the abilities to predict market rate with a weighted mean of 3.475; overconfidence in experience in the real estate market with a weighted mean of 3.225; and overconfidence in advice from professional with a weighted mean of 3.000. Overconfidence in government support was ranked the least. These findings are inconsistent with those of Aduda and Muimi (2011) who found that overconfidence is prevalent among real estate investors of listed companies in Kenya.

### **8. Frame Dependence among Real Estate Investors**

The second objective was to assess the influence of frame dependence on real estate performance in Kisii town. Before assessing this influence, the extent of frame dependence among real estate investors was established on a Likert scale using the scale of 1 for To no extent; 2 for To a small extent; 3 for To a moderate extent; 4 for To a large extent; and 5 for To a very large extent. The findings are shown in Table 4.

**Table 4 Frame Dependence among Real Estate Investors**

Factor	1	2	3	4	5	Mean	Std. Dev.	Std. Error Mean
Acquiring property that has a 20% possibility of making a	14	10	5	5	6	2.475	0.446	0.970
Acquiring property that has a 40% possibility of making a	4	6	9	11	10	3.425	0.336	0.152

The results in Table 4 indicate that frame dependence plays a role in influencing the extent of application of investment knowledge in investment decision among real estate investors. This is indicated by the different weighted means that result from asking a similar question to the investors which was framed differently. Since the two means are different, it implies that frame dependence influences investment decisions to a great extent. These findings are in tandem with those of Odhiambo (2015) who found that frame dependence is prevalent among real estate investors in Kenya.

### 9. Herding among Real Estate Investors

The third objective of the study was to establish the role of herding on real estate performance among real estate investors in Kisii town. It was necessary before this role is established to find out the extent of herding among real estate investors in Kisii town. This was done on a Likert scale using the scale of 1 for To no extent; 2 for To a small extent; 3 for To a moderate extent; 4 for To a large extent; and 5 for To a very large extent. Results are indicated in Table 5.

**Table 5: Herding among Real Estate Investors**

Factor	1	2	3	4	5	Mean	Std. Dev.	Std. Error Mean
Investing due to friend(s) influence	3	1	15	13	8	3.550	0.923	0.930
Investing because everyone in investing	5	12	10	10	3	2.850	0.612	0.122
Investment due to good returns in the recent past	7	6	7	11	9	3.225	0.825	0.879
Investment due to certainty	2	9	11	4	14	3.475	0.398	0.097
Investment due to market trends	4	6	9	8	13	2.500	0.609	0.127

Results from Table 5 above indicate that herding is a common practice among real estate investors in Kisii. This is shown by the weighted average mean of 3.222 which shows that



herding is present in many real estate investment decisions but to a moderate extent. Among the indicators for herding, investing because friends have invested received the largest extent of 3.550 indicating that this practice was prevalent to a large extent. These results indicate that herding is prevalent among real estate investors in Kisii town. Ombai (2010) and Kahuthu (2011) also found that herding was a common practice among real estate investors in Kenya.

### 10. Representativeness among Real Estate Investors

The fourth objective of the study was to establish the role of representativeness on real estate performance. The extent of representativeness was first established among the real estate investors in Kisii town using a Likert scale using the scale of 1 for To no extent; 2 for To a small extent; 3 for To a moderate extent; 4 for To a large extent; and 5 for To a very large extent. Results are shown in Table 6.

**Table 6: Representativeness among Real Estate Investors**

Factor	1	2	3	4	5	Mean	Std. Dev.	Std. Error
Events happening currently	4	2	12	12	10	3.650	0.621	0.631
Events that happened 10 years ago	7	11	13	6	3	2.675	0.772	0.192
Events that happened 20 years ago	12	10	4	10	4	2.600	0.621	0.589
Events that will occur in the future	5	6	19	4	6	3.000	0.428	0.927

Findings in table 6 indicate that representativeness is one of the factors that is applied in investment decision making among real estate investors in Kisii town. This is indicated by the weighted average mean of 2.981 which shows that the practice is applied to a moderate extent. Of the measures of representativeness, events happening currently were ranked highest in terms of influencing investment in the real estate industry with a weighted mean of 3.650. Events that will occur in the future were ranked second in influencing investment decisions with a weighted mean of 3.000. Events that occurred 20 years ago were found to least influence investment decisions in the real estate industry. These results can be interpreted to imply that representativeness is common among the real estate investors in Kisii town. Atati (2014), Onsomu (2014) and Nyamute et al (2015) also found that representativeness is prevalent among real estate investors in Kenya.

## 11. Correlation between Behavioural Factors and Real Estate Performance

To establish whether there was a relationship between the variables, a correlation analysis was conducted. The correlation analysis shows the direction, strength, and significance of the relationships among the variables of the study (Sekaran and Bougie, 2010). A positive correlation indicates that as one variable increases, the other variables will also increase. On the other hand, a negative correlation indicates that as one variable increases the other variable decreases (Sekaran, 2003). The research model that was used in the study was:

$$REIP = \beta_0 + \beta_1 OVCONF + \beta_2 FRD + \beta_3 HERD + \beta_4 REPR + \varepsilon \dots \quad (3.1)$$

Where: *REIP* is real estate investment performance,

*OVCONF* is overconfidence, *FRD* is Frame Dependence, *HERD* is herding and *REPR* is Representativeness;

$\beta_0$  is the constant term  $\beta_1, \beta_2, \beta_3$  and  $\beta_4$  are the coefficient for overconfidence, frame dependence, herding and representativeness respectively.

$\varepsilon$  is the error term which were assumed to be normally distributed.

Results of the correlation are shown in Table 7.

**Table 7: Correlation between Behavioural Factors and Real Estate Performance**

	REIP	OVCONF	FRD	HERD	REPR
REIP	1				
OVCONF	.346***	1			
FRD	.194	.136	1		
HERD	.272***	.124	.056	1	
REPR	.312***	.032	.001	.065	1

Note: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table 8: Regression Coefficients for Behavioral Factors in Real Estate Performance**

	Unstandardized Coefficients		Standardized Coefficients	
	B	Std. Error	Beta	Sig.
<b>(Constant)</b>	.571	.198		.000
<b>OVCONF</b>	.446	.180	.457	.000
<b>FRD</b>	.194	.171	.180	.063
<b>HERD</b>	.372	.162	.369	.000
<b>REPR</b>	.197	.193	.198	.003

From the results in Table 8, several conclusions can be drawn. First, all correlation coefficients are less than 0.80 in general and therefore there is no issue of multicollinearity between the independent variables (Gujarati and Porter, 2009). Second, it has been indicated that overconfidence is significantly and positively correlated with performance of real estate in Kisii town. This is indicated by the correlation coefficient of 0.346 which is significant ( $p < 0.01$ ). The inference here is that as overconfidence increases, there is likely to be an increase in the performance of real estate in the town. This results are in contradiction with those of Ezimuo *et al.* (2014) and Wahome (2010) who found no relationship between overconfidence and real estate performance. Atati (2014) and Kubuta (2014) on the other hand found a small but insignificant relationship between the two variables while Kamau (2011) found a negative relationship between overconfidence and the real estate performance in Kenya. It therefore implies that the present study's findings are not confirming any findings from previous results. Thirdly, the correlation results indicate that frame dependence has no significant relationship with the growth of real estate in Kisii town. This implies that the way information is presented to the investors does not significantly influence the performance of real estate. Atati (2014), Ombai (2010) and Kamau (2012) acknowledged that frame dependence has no significant influence on the performance of real estate investments. Fourthly, the roles of herding and representativeness on the performance of real estate was found to be significant ( $p < 0.01$ ) and positive. This implies that both herding and representativeness increase the performance of the real estate investments. Lastly, the results

indicate that the financing sources are positively correlated to each other but the correlation is insignificant. This implies that the financing sources are independent of each other.

Since the first specific objective was to establish the role of overconfidence on the performance of real estate, the null hypothesis was set that there is no relationship between overconfidence and the performance of real estate. The p-value and the beta coefficient (0.571, p-value = 0.000) leads us to reject the null hypothesis of there being no significant relationship between overconfidence and real estate performance. It therefore implies that there is a significant positive relationship between overconfidence and real estate financing. As noted earlier, these results are in contradiction with those of Chaffai and Medhioub (2014) and Nyamute *et al.* (2015) who found no relationship between overconfidence and real estate performance. Atati (2014) and Kubuta (2014) on the other hand found a small but insignificant relationship between the overconfidence and real estate investment while Kamau (2011) found a negative relationship between overconfidence and the real estate performance in Kenya.

The beta coefficient for frame dependence' influence on the performance of real estate growth is positive and insignificant, (p-value = 0.063). Since the null hypothesis was set at there being no relationship between frame dependence and the performance of real estate, we fail to reject it and conclude that there is no significant relationship between frame dependence and the performance of real estate.

The regression coefficient for herding was also found to be significant with a beta value of 0.372 (p-value = 0.000) which means that we reject the null hypothesis and accept the substantive hypothesis of there being a significant relationship between herding and real estate growth.

Representativeness was found to be significantly related to real estate performance as shown by the p-value of 0.03 with a beta value of 0.197. These results contradict those of Onsomu (2014) who found no significant relationship between representativeness and real estate performance.

**Table 9: Model Suitability**

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<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>	<b>Sig</b>
1	.856 <sup>a</sup>	.732	.728	.403	0.000

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The model summary table above indicates that the general correlation between behavioural factors and performance of the real estate industry in Kisii town is positive and high. This is shown by the model correlation coefficient of 0.856. The suitability of the model in predicting real estate performance was revealed by R square value of 0.728. This implies that the 72.8% of real estate performance can be predicted by using behavioural factors, or that behavioural factors contribute to real estate performance up to 72.8% with other factors not in the model predicting the 27.2%. The model suitability relationship in the Table 9 shows that the general relationship between the variables is strong.

## **12. Summary of Findings**

This study was aimed at finding out the role of financing sources on real estate growth in Homa Bay town. The specific objectives of the study were to: establish the influence of overconfidence on real estate performance in Kisii town; assess the influence of frame dependence on real estate performance in Kisii town; analyse the influence of herding on real estate performance in Kisii town; and to evaluate the influence of representativeness on real estate performance in Kisii town. The following is a summary of findings.

The first objective was to evaluate the relationship between overconfidence and the performance of real estate in Kisii town. Results indicated that overconfidence is significantly and positively correlated with performance of real estate in Kisii town. The inference here is that as loan overconfidence increases, there is likely to be an increase in the performance of real estate in the town. The null hypothesis of there being no significant relationship between overconfidence and real estate growth was rejected. It therefore implies that there is a significant positive relationship between overconfidence and real estate performance. Overconfidence was also found to have the greatest positive and significant influence on the performance of the real estate.

The second objective was to determine the relationship between frame dependence and the performance of real estate in Kisii town. Study findings revealed that there is no significant relationship between frame dependence and the performance of real estate. The study failed to reject the null hypothesis.

The third objective was establish the relationship between herding and the performance of real estate in Kisii town. Herding was found to have a positive significant relationship with real estate performance. The null hypothesis was rejected since a significant influence was found to exist.

The fourth objective was to establish the relationship between representativeness and performance of real estate in Kisii town. Results revealed that representativeness has a positive significant relationship with performance of the real estate investments. The null hypothesis was rejected since a significant influence was found to exist.

### **13. Conclusions**

Based on findings for the first objective that overconfidence is significantly and positively correlated with performance of real estate in Kisii town the study concludes that overconfidence is an important factor in ensuring that the performance in the real estate industry in Kisii town increases. The implication is that if the real estate investors are encouraged to be confident in their decisions and mortgage financing is made accessible to many real estate developers, they will readily take it up and use it to construct more housing units leading to increase in income and revenues.

The study's finding that frame dependence does not significantly affect real estate performance in Kisii implies that investors in real estate in Kisii town do not consider how the investments are packaged to them. This is a likely indication that real estate financiers in Kisii should package the investment financing in the simplest way.

Based on findings of the third objective and fourth which revealed that herding and representativeness significantly and positively influences real estate performance, it can be concluded that herding and frame dependence do influence real estate performance.

### **14. Recommendations**

In line with the conclusions for the first objective, it is recommended that mortgage financing institutions in Kisii town make mortgage financing more accessible to real estate developers. This is because mortgage financing is the source of financing that is can give real estate investors who invest with overconfidence the edge in real estate

It is recommended that financing sources such as Investment Trust financing be simplified so that real estate developers understand it more. This is because previous research has established that the way financing sources and investments are framed is important in performance of real estate.

Based on the conclusion from the finding from the research for objective three and four, is recommended that banks and other financing institutions make accessibility to finance products for real estate development easy. This is because it has been shown that herding and representativeness positively and significantly influences the performance of real estate.

### **15. Suggestions for Further Research**

The research puts forward the following suggestions for further research:

- (i) A study on the influence of behavioural factors on the performance of financing institutions.
- (ii) A study on the role of behavioural factors on the growth of real estate using a bigger sample.
- (iii) A study on the role of the behavioural factors hindering the development of real estate in Kenya.

### **16. REFERENCES**

- Aduda, J. & Muimi, P. (2011). Test for investor rationality for companies listed at the Nairobi Stock Exchange. *Journal of Modern accounting and auditing*, 7(8), 827- 840.
- Barber, B. M., & Odean, T. (1999). The courage of misguided convictions. *Financial Analysts Journal*, 55(6), 41-55.
- Barber, B. M., & Odean, T. (2002). Do the Slow Die First? *The Review of Financial Studies, Special Issue: Conference on Market Frictions and Behavioral Finance*, 15(2), 455-487.
- Bashir, B., Amir, K., and Geri, J., (2013). Empirical Testing of Heuristics Interrupting the Investor's Rational Decision Making. *European Scientific Journal*, 9(28), 432- 444.
- Chaffai, M. and Medhioub, I., (2014). Behavioral Finance: An Empirical Study of the Tunisian Stock Market. *International Journal of Economics and Financial Issues*, 4(3), 527-538.
- Creswell, J.C (2009). *Research Design*. Sage Publishers, London.
- Fisher, S., (2004). *Research Methods in Statistics*. Sage Publishers, London.
- Gay, L. (1992). *Educational Research: Competence for Analysis and Applications*. 4th

Edition – New York: Macmillan Publishers.

Gholizadeh, M. H., Shakerinia, I. and Sabet, S. Z., (2013). The role of behavioral biases on Investment Decisions Case studies: Tehran stock. *International Research Journal of Applied and Basic Sciences*, 4(4), 819-824.

Graham, J. R., & Harvey, C. R. (2009). *Investor competence, trading frequency, and home bias*. *INFORMS*, 55(7), 1094-1106.

Jordan, B. D., & Miller, T. W. Jr. (2008). *Fundamentals of investments valuation and management* (4th ed.). New York: McGraw-Hill/Irwin.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-292.

Kahuthu, D. G. (2011). *Effects of herd behaviour on trading volume and prices of securities at NSE*. Unpublished MBA Research Project. University of Nairobi.

Kisii County. (2014). *Kisii County Annual Report, 2014*.

Ministry of Housing (2014). *Sessional Paper No. 3 of 2004 on National Housing Policy for Kenya*.

Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches*. African Centre for Technology Studies. Nairobi.

Muthama, A. K., (2012). *Effect of Investor psychology on real estate market prices in Nairobi*. An Unpublished MBA report. University of Nairobi.

Nyaribo, R. K. (2010). *A survey of the behavioural factors influencing the choice of financing methods by SMEs: A case study of Ruiru municipality*. Unpublished MBA Research Project. University of Nairobi.

Nyamute, W., Lishenga, J., and Oloko, M., (2015). The relationship between investor behaviour and portfolio performance at the Nairobi Securities Exchange. *International journal of multidisciplinary research and development*, 2(5), 248- 551.

Onsomu, Z.N., (2014). The Impact of Behavioral Biases on Investor Decisions in Kenya: Male vs. Female. *International Journal of Research in Humanities, Arts and Literature*, 2(6), 87-92.

Odean, T. (1999). Do Investors Trade Too Much? *The American Economic Review*, 9(5), 1279-1298.

Ombai, P. O. (2010). *An investigation of the herd effect at the NSE during the global financial crisis*. MBA Research Project. University of Nairobi.



- Parikh, P. (2009). *Value investing and behavioral finance*. New Delhi: Tata McGraw-Hill Education Private Limited.
- Prechter, R. R. Jr. (2001). Unconscious herding behavior as the psychological basis of financial market trends and patterns. *The Journal of Psychology and Financial Markets*, 2(3), 120–125.
- Ritter, J. R. (2003). Behavioral finance. *Pacific-Basin Finance Journal*, 11(4), 429-437.
- Ruitha, J. (2010). *Emerging opportunities in the housing industry in Kenya*. The National Housing Corporation.
- Ricciardi, V., and Simon, H.K., (2000). What is finance behaviour? *Business, Education and Technology Journal*, 2(1), 1-8.
- Sadi, A., Bhateer, S., and Munir, A., (2010). Behavioral Finance: The Explanation of Investors' Personality and Perceptual Biases Effects on Financial Decisions. *International Journal of Economics and Finance*, 3(5), 234-241.
- Sharma, M. and Vasakarla, V., (2013). An Empirical Study of Gender Differences in Risk Aversion and Overconfidence in Investment Decision Making. *International Journal of Application or Innovation in Engineering & Management*, 2(7), 497- 504.
- Shefrin, H., & Statman, M. (1984). The disposition to sell winners too early and ride losers too long: Theory and evidence. *The Journal of Finance*, 40(3), 777-790.
- Statman, M. (1999). Behavioral Finance: Past Battles and Future Engagements. *Financial Analysts Journal*, 55(6), 18-27.
- Statman, M., Fisher, K. L., & Anginer, D. (2008). Affect in a Behavioral Asset-Pricing Model. *Financial Analysts Journal*, 64(2).
- UNDP (2014). *The State of Urban Centres, Kisii*. UNDP.
- Weber, M., & Camerer, C. F. (1998). The disposition effect in securities trading: An experimental analysis. *Journal of Economic Behavior & Organization*, 33, 167- 184.