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Role of Mortgage Financing in the Growth of Real Estate in Nairobi Metropolis, Kenya

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Abstract:

Real estate business is an undertaking that has been perceived by many as a project that needs a lot of capital to initiate. In Kenya, investing in real estate hasn't been such a huge venture until the last 10 years. This research therefore aimed at establishing the perceived role of mortgage financing on the growth of real estate in Kenya with a focus in Nairobi Metropolitan area. It is often difficult to fund big projects in real estate solely from personal savings. There is a need to use other sources of finance such as equity or self-financing, or mortgage from financial institutions like commercial banks, insurance companies and mortgage institutions or venture capital. This research paper was guided by the objective; To assess influence of mortgage financing option on the growth of real estate in Nairobi Metropolis. This study used primary data collected from registered developers in Kenya with an interest in Nairobi Metropolis. The sample size was 81 out of a population of 100 developers registered with Kenya Property Developers Association. The study employed descriptive research design and data was analyzed through multiple regression analysis. This study found out that the variable only explained 7.1% of the growth of Real estate in Kenya. Other factors outside this research explain 92.9% of the growth in real estate. Due to the low explanation the researcher employed confirmatory factor analysis to determine model perfect of fit. The study found mortgage financing as a variable had a good fit. From this study, then there is a need for more research on those other factors that have spurred growth in real estate in Kenya. This study was carried out during the period May to August 2019.

Keywords: Mortgage, Confirmatory Factor Analysis, Multiple Regression, Metropolis, Descriptive Research Design

1. Introduction

1.1. Background of the Study

Real estate can be classified into residential and non-residential properties in specified areas. Residential properties are those that serve as housing. In the current development in Kenya, residential properties also include social amenities such as schools, restaurants, swimming pools, security services, health care facilities among others. These houses may include flats, mansionettes and bungalows. The most important factor in real estate development and investment is funding and what makes it complicated to a large extent is its capital intensive nature that demands proper and adequate funding to make it even more realizable (Brueggeman & Fisher 2005).

Availability and easy accessibility of capital in sufficient quantities definitely accelerates all forms of property development. Real Estate financing is concerned with the production of money for constructing structures such as house and office complexes which are basic necessities in a developing economy like Kenya. It is a fact that without a well operationalized and efficient housing finance system, the 'real' housing market would be sub-optimal. Additionally, a proper housing finance system impacts positively on the entire financial system with far-reaching consequences for enhanced economic growth (Zhu 2012).

Capital is a major factor in the day to day practice of any business. The real estate enterprise requires investing huge amounts of capital in order to allow construction of property. Lack of finance for the business will lower its credibility hence face problems whilst negotiating credit duration of construction materials, or when negotiating bank loans and guarantees are based on the financial base of any business. lack of capital is a problem for small and micro business enterprises therefore most of them have remained operating in small scale (Chua & Kog 2009).

Financing options for real estate development in Kenya is still a great deal and poses a great deal of problem for the developers. This is largely due to slow economic growth and instability and strict measures imposed by most financial institutions. Since the financing of real estate development is always a long term project, it has compelled the high interest rate that is being charged on the funds provided for such development purposes. Whereas the first world countries use stocks and bonds to finance real estate, Kenya predominantly uses mortgage financing. Demand for real estate and

different types of real estates is increasing in Kenya with young and employed population driving this demand (Kohnstamm, 2015).

1.1.1. Real Estate Development in Kenya

Commercial real estate assets are continually bought, sold, developed and redeveloped. This makes real estate investment one of the Kenya's most active and important business activities. (MBAA 2012). Most people living in urban areas are working hard to own homes in these towns, either individually or as a group. However, the challenge of home ownership has been occasioned by shortage of land and financing sources with people being issued with fake title deeds, and government interference that has seen demolition of people's homes to pave way for infrastructural development like roads, railway and public amenities.

A survey of real estate in Uasin Gishu County on factors influencing real estate investment, found that genuine documents of land ownership is a challenge in the county. Most of these documents were fake and one piece of land was likely to be owned by up to five people. High cost of construction was another challenge, thus prices are determined by the market forces of demand and supply, although for some other reasons it could have been determined by other forces. The real estate market is distinguished by more or less predictable cycles of booms and busts. Scholars have divided the real estate sector into formal and informal with its market presenting a peculiar complexity with three autonomous but associated markets connected to the economy (Koech, 2014).

These markets include space, asset and development markets which solely portray market arenas where trading take place and prices are regulated through the interplay of demand and supply. The space market entails the interaction of the demand by residential property users with current stock of space which is made available by landlords. This predicts the patterns of rents and the amount of occupancy with vacancy clearing the market (Ubale, Martin & Wee, 2013). According to Monsod (2016), for the past ten years, Kenya has undergone a significant growth in terms of population and migration from rural to urban settlement. Urbanization has resulted to a modern single family set up which is likely to create huge demand for urban housing leading to further expansion of the urban areas. This state of affairs has created a huge demand- supply gap in all sectors of the housing market whether commercial, residential. Due to this huge gap in provision of housing, developers are doing a great job in providing the much needed deficit.

Demand for real estate is derived from the basic need of human beings. Shelter is required for all human activities. The demand for real estate can respond to changes in price but is rather inelastic compared to other commodities. This is because there are a few participants in real estate market so that it is possible to have periods where only buyers and sellers respectively control the market, while the process is complex and expensive due to property taxes. The government has put in place measures to improve housing in the metropolitan region. In Nairobi, slum upgrading projects have been initiated in Kibera. Other housing projects are already being developed in Mavoko, Kajiado, Ruiru and Thika. By 2015, the Ministry of Nairobi Metropolitan Development aimed at investing about Ksh 3.4 trillion in housing development (Mazzol, 2016).

1.2. Statement of the Problem

A great challenge in choosing financing option in real estate is that real estate investments are relatively risky due to their irreversible nature, intrinsic uncertainties, and the long payback period. Research by Freire, Ferguson, Lima, Cira and Kessides (2007) highlighted that legal land development for low-income households has dried up or is in the process of drying up in many developing economies cities. In Buenos Aires for instance, the formal submarket for sales of individual lots in monthly installments to low-income households was important from 1950 to 2000 but has disappeared since then (World Bank, 2006).

The sourcing of funds for investment in real estate development poses a great deal of problem for the developer. This is largely due to economic instability and stringent measures imposed by most financial institutions. This is compounded by the fact that the interest rate structure has had an unfavorable impact on funding the development of real estate. Since financing of real estate development is a long term project, it has necessitated the high interest rate that is being charged on the funds provided for such development purposes. Hines (2012) revealed that six major real estate financing methods are used across the world namely; Joint Venture, Equity and Debt Financing, Sale -lease Back Financing, Advance Payment of key money and Sale of Securities.

There is a deficiency of long term financing necessary to finance real estate projects due to financial institutions preferring short term financing. The Central Bank of Kenya has a feeling that there is a long term funding disparity which further complicates the funding of long term projects in the real estate sector (CBK, 2017). Funding of the real estate in Kenya is in competition with other sectors in the economy and so threatening the continuous growth in real estate. (Kamau, 2016).

Macharia (2013) in her study on the effects of global financial crunch on the financial performance of commercial banks offering real estate finance in Kenya found out that there is a negative relationship between inflation and global financial crisis and financial performance of commercial banks offering real estate finance in Kenya. Michuki (2010) in his study on Real Estate Investment Trusts needs by institutional investors at the Nairobi Stock Exchange established that investors would put their money in Real Estate Investment Trusts if such trusts were introduced in the market.

Previous and recent studies done on real estate have not focused on the role of mortgage financing on the growth of the sector in Nairobi, Kenya. Based on this well informed research gap, this study, therefore, examines the role of mortgage financing on growth of real estate in Kenya with a focus on developers in Nairobi Metropolitan area.

1.3. Objective of the Study

The objective of the study is to determine the role of mortgage financing on the growth of real estate in Nairobi metropolis, Kenya.

2. Literature Review

2.1. Theoretical Review

The theories review in this section are the real estate simulation theory and the resource dependency theory.

2.1.1. Real Estate Simulation Theory

This theory was developed by Wieand (1996). It observes the degree to which financial markets facilitate the provision of housing finance across a wide range of nations. Housing is a major acquisition requiring long-term financing, and the issues related with well-functioning housing finance schemes are those that support the provision of long-term capital. The theory also indicates that States or Countries with stronger laws for finance providers and investors, deeper credit information systems, and a firmer macroeconomic atmospheres have strong housing finance schemes.

The random nature of real estate market largely obstructs the development of comprehensive analytical models illustrating market functions. Simulation modeling is a tool that enables decision-makers to analyze situations that are burdened with uncertainty. It is an optimal tool for creating market processes in an experimental setting, it accounts for irregularities caused by random factors, and it supports the generation of additional information about the real estate market (Keeney, 2002).

This theory was the financially relevant in ascertaining constraints that affect real estate accomplishment by focusing on mortgage characteristics such as the cost of taking out a mortgage as a financial constraint to both the developer and interested parties. The theory was also used to shed light on the effects of the direct and indirect subsidies, including interest deductibility, factors that have a big impact on the real costs and subsequent housing project success.

2.1.2. Resource Dependency Theory

This theory was developed by Brueckner, (1997). The theory advises top managers to select the least-constraining device to manage relations with their exchange partners that will allow them to minimize uncertainty and dependence and maximize their independence. This theory is relevant in project management as it emphasizes on the significance of having many opportunities in an effort of ensuring project success. It cautions that if dependence comes from relying on a one-source supplier, then an obvious answer is to find and sustain alternatives. This theory is pertinent to tackle financial constraints and encouraging on the marketing approach and avenues to be used in order to guarantee that a housing project is successful (Sirmon, Hitt & Ireland, 2007).

Resource dependency theory emphasizes on the organization's ability to institute methods to access resources (Van Witteloostuijn & Boone, 2006). Resource dependency theory assumes that the firm makes the right choices to achieve objectives. According to this theory, real estate firms are not able to accumulate all financial resources internally and therefore depend on finances from other organizations in their environment to access the limited resources. For the firms to survive or prosper, financial resources must be obtained from external sources (Barringer & Harrison, 2000). This theory was applied in this study due to the financial, market and government policies dependency nature of the housing projects and that developers may not wholly depend on internal funding like savings or revenue reserves but should also seek funding from other organizations in the environment.

2.2. Empirical Review

2.2.1. Mortgage Financing and Growth of Real Estate

The term mortgage refers to a loan secured by actual assets or property through the use of a mortgage note which acts as a proof for the existence of the loan of the real estate through the granting of a mortgage which acts as a security for the loan. Mortgage financing is normally repaid on monthly installment for an agreed period of time. However, it requires one to put forward some equity, while the funding entity finances the rest of the intended project. The developer is required to pay the mortgage loan with an interest in addition to the principal amount. There are two common types of mortgage loans, the fixed rate mortgage loan and adjustable rate mortgage loan (ARM). A flat rate of interest is applied for the fixed rate mortgage loan while for the ARM loan, amendments are made to the interest rate at given intervals (Harris & Friedman, 2006).

There has been a high demand for housing in the urban centers in Kenya over the years due to rural urban migrations. To ensure that this gap is filled, the government of Kenya reduced the mortgage interest rates. From this relieve, people with low income could afford to obtain mortgage to build houses and others could afford to build classy homes since mortgage loans were easily available (Sirota 2003). This continued to 2007 when there was a financial crunch that affected the mortgage industry when they handled nearly half of all loan originations each year. This resulted to the merging of the mortgage financing firms and the increasingly ultimate role of commercial banks as housing mortgage originators. As a result, commercial banks financed 51 percent of mortgage loans by the end of 2009. In addition, mortgage brokers existed in the market acting as agents for the large mortgage lenders (Baker & Wiedemer, 2012).

According to Marcum and Goddard (2012), the real estate sector experienced a great development in the years 2002 to 2007 due to low cost of mortgage finance internationally, which stimulated home ownership. The central bank of Kenya promoted lending through low rates of interest and commercial banks were excited about giving loans.

Unfortunately, this went down during the 2007 and 2008 worldwide financial crisis which affected the global economy. There was a crash in the real estate sector as investors and developers were left holding property with no one to buy as the mortgage interest rates had gone high and people could not afford the loans as before.

2.3. Conceptual Framework

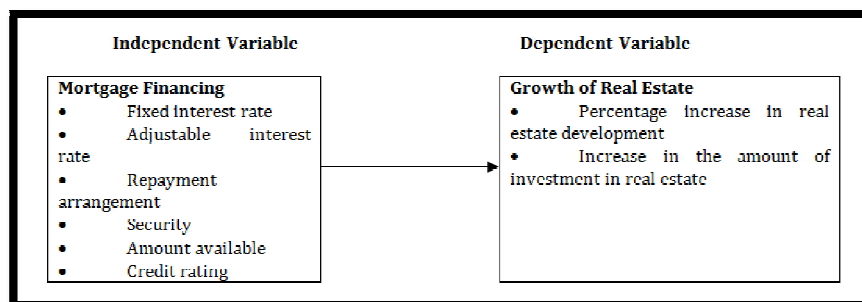


Figure 1: Conceptual Framework
Source: Researcher, 2020

3. Research Methodology

3.1. Research Design

Ogula (2005) describes a research design as a plan, structure and strategy of investigation to obtain answers to research questions and control variance. It is the plan of action the researcher adopts for answering the research questions and acts as a blueprint of the researcher (Kerlinger, 2006). This study adopted descriptive survey design. This design as defined by Orodho (2009) is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. The main feature of descriptive survey design is to describe specific characteristics of a large group of persons, objects or institutions, through questionnaires (Kothari 2012).

3.2. Target Population

Population can be defined as a complete set of individuals, cases/objects with some common observable features of a particular nature distinct from other populations. According to Mugenda and Mugenda (2013), a population is a well-defined as a set of people, services, elements and events, group of things or households that are being explored. The population for this study was all the 100 registered real estate developers in Kenya by April 2019.

Category	Population
Premium Developers	12
Corporate Developers	57
Associate Developers	31
Total	100

Table 1: Target Population
Source: Kenya Property Developers Authority 2019

3.3. Sampling and Sampling Procedure

Sampling is defined by Saunders, Lewis and Thornhill, (2012) as a method used in drawing samples from a population usually in such a way that the sample facilitates determination of some hypothesis concerning the population. This study sampled 81% of the population from all the three clusters. According to Yamane Taro(1967), the sample size is computed as:

$$n = \frac{N}{1+N(e)^2}$$

Where n --is the sample

N --is the population

e --is the desired level of precision

Assumption: All the attributes being measured are normally distributed or nearly so and the confidence level is 95% and the estimated variation of response is 50%.The precision level is taken at 5%. Hence;

$$n = \frac{100}{1+100(0.05)^2} = 80 \text{ units.}$$

This is equal to 80% of the population. This is distributed to the clusters as follows;

Category	Population		Sample	Approx.
Premium	12	12/100*80	9.6	10
Corporate	57	57/100*80	45.6	46
Associate	31	31/100*80	24.8	25
Total	100		80	81

Table 2: Sample Size
Source: Author (2020)

The approximate sample size was 81 and the researcher felt that this was a representative sample of the population.

3.4. Research Instrument

The data was gathered through structured questionnaires. Heize (2009), stated that, a questionnaire is a research instrument consisting of a series of questions and added prompts for the purpose of gathering data from respondents. The questionnaire is semi-structured for qualitative and quantitative data respectively. Structured Questionnaire was preferred as data was gathered in a consistent manner, making them more impartial than interviews; data was collected very fast and from a large proportion of a set (Mugenda & Mugenda, 2012).

3.5. Data Analysis and Presentation

Qualitative techniques were used to undertake data analysis. Qualitative data analysis involves clarification of information obtained from the open ended questions from the questionnaire. Quantitative analysis was used to establish the scores of responses provided. This entailed generation of descriptive statistics after data collection, estimation of population parameters from the statistics, and making of inferences based on the statistical findings. The study used a multiple linear regression model with the aid of SPSS software.

$$Y = \alpha_0 + \alpha_1 x_1 + \varepsilon$$

Y is the growth in real estate and is the dependent variable

α_0 , the intercept or the constant

The error term is represented by ε

α_1 , is the partial regression coefficients to determine changes in the independent variable

X_1 is the independent variable or explanatory variable

X_1 represents mortgage finance

Exploratory factor analysis (EFA) was done using the Principle component analysis in order to reduce the factors used to measure the variables. Bryne (2010) argues that where all the steps are followed, highly correlated variables would be clustered together into a distinctive factor. EFA gives information about a number of factors that best characterizes the data. Confirmatory factor analysis (CFA) as a statistical procedure was used to confirm the factor arrangement of the set of experiential variables. CFA assists the researcher to test the hypothesis that an association between experiential variables and their underlying latent constructs exists.

4. Research Findings and Discussions

4.1. Response Rate

A total of 81 questionnaires were targeted. Those successfully completed were 70 representing a total of 86% as illustrated in Table 3. According to Mugenda and Mugenda (2003), response rate above 80% is acceptable for a descriptive study. This is represented in Table 3 below.

	Frequency	Percentage
Successful	70	86.4
Unsuccessful	11	13.6
Total	81	100%

Table 3: Response Rate
Source: Author (2020)

4.2. Duration of Involvement in the Real Estate Sector

Over 52% of the respondents indicated they had been in the real estate business for between 1 to 5 years. 34% had been in the industry for 5-10 years while those who had been in the real estate industry for more than 10 years are 12%. This is represented in Table 4 below.

	Duration in real estate	Frequency	Percent
	1-5years	37	52.9
	5-10years	24	34.3
	above10 years	9	12.9
	Total	70	100.0

Table 4: Duration
Source: Author (2020)

4.3. Real Estate Sector

81% of the respondents deal in both commercial and residential real estate sectors. Those who are in just residential sector are 10% and commercial space was 8.6%. Most of the developers prefer mixed development which reported 81.4%. This is can be associated with the fact that Nairobi metropolitan area is more of an urban area as the bigger region is Nairobi city and surrounded by satellite towns. This is represented in Table 5 below.

	Sector	Frequency	Percent
	Residential Space	7	10.0
	Commercial Space	6	8.6
	Both	57	81.4
	Total	70	100.0

Table 5: Type of Investment
Source: Author (2020)

4.4. Tailored Loans Specifically for Developers

24% of the respondents cited fixed rate mortgage a tailored loan for developers while 17% cited a building loan. Those who cited investment properties were 13% followed by labor based loans and marketing services loans at 9% and 7% respectfully. This is represented in Table 6 below.

	Tailored Loans	Frequency	Percent
	Fixed Rate Mortgage	24	34.3
	Labor Based loans	9	12.9
	Building Loan	17	24.3
	Investment Properties	13	18.6
	Marketing Services	7	10.0
	Total	70	100.0

Table 6: Tailored Loans for Real Estate Developers
Source: Author (2020)

4.5. Whether the Tailored Loans Aid Growth of Real Estate

Majority of the respondents at 96% respondent in the affirmative as to whether tailored loans and real estate growth with only 3% responded negatively and 1% did not know. This is represented in Table 7below.

	Response	Frequency	Percent
	Yes	67	95.7
	No	2	2.9
	I don't know	1	1.4
	Total	70	100.0

Table 7: Tailored Loans Aiding Growth in Real Estate
Source: Author (2020)

4.6. Diagnostic Tests

These tests show whether the data fulfills the requirement of ordinary least squares (OLS) and thus sufficiency and adequacy of the data for regression analysis.

4.6.1. Test for Normality and Linearity

These tests were used to test whether the variables were symmetrically distributed and without outliers and that there was linear relationship among the variables. Reliability is uniformity of measurement (Bollen, 1989). A normality test is carried out to determine if the data set is well-modeled by a normal distribution (Paul & Zhang, 2010). The data was summarized and tested for normality using skewness and kurtosis and was found without any inconsistencies. Kurtosis is a display of flattening of a distribution and Skewness is as an indication of asymmetry and deviation from a normal distribution. Data is said to satisfy normality parameters if skewness and kurtosis is between +2 and -2. (Kothari, 2004). This data satisfied these parameters as indicated in Table 8below.

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. sktest realgrowth mortgages savings venturecapital equityfinancing

Skewness/Kurtosis tests for Normality

----- joint -----
Variable | Obs Pr(Skewness) Pr(Kurtosis) adj chi2(2) Prob>chi2
-----|-----
realgrowth | 70 0.1873 0.1043 4.45 0.1078
mortgages | 70 0.3684 0.5812 1.15 0.5633
savings | 70 0.8118 0.4037 0.77 0.6795
venturecap-l | 70 0.4281 0.3770 1.46 0.4829
equityfina-g | 70 0.7482 0.6531 0.31 0.8585
    
```

Table 8: Test of Normality
Source: Author (2020)

4.7. Test of Heteroscedasticity

According to Vinod (2008) heteroscedasticity is a condition where the variability of a variable is imbalanced across the array of values of a second variable that predicts it. A state of homoscedasticity is when the value of 'Prob > Chi-squared' is higher than 0.05 (Park,2008). The data set did not show any condition of heteroscedasticity when tested using Breusch-Pagan/Cook-Waisberg test. The results were Chi2 (1)=0.01 and prob>Chi(2) =0.09075 as shown in Table 9 below.

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. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of realgrowth

chi2(1) = 0.01
Prob > chi2 = 0.9075
    
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Table 9: Test for Heteroscedasticity
Source: Author, 2020

4.8. Correlation Analysis

The relationship between the independent variable and the dependent variable was examined using correlation analysis. Correlation is used to find out the relationship between a group of subjects (Pallant,2010) and in turn assists in testing for multi-collinearity. Pearson correlation coefficient (r) and p-value analysis were used. Multi-collinearity exists if the absolute value of Pearson correlation is higher than 0.8. Correlation was perceived to be significant when (p<0.05) two tailed. Correlation values close to zero were taken to mean a weak relationship, while that close to one meant strong relationship.

Table 10 below shows the results of the correlation analysis. The results revealed that equity financing as a financing option is negatively related to real estate performance (r= -0.236, p=0.049) which is significant while mortgages are positively related with real estate growth (r=0.062, p=0.611). These results however show very low correlation as well as significance though there was absence of multi-collinearity.

Variable	Growth of real estate	Mortgage financing
Growth of real Estate	1.000	
Mortgages	0.062	1.000
Sig.(2-tailed)	0.611	

Table 10: Pearson Correlation
Source: Author (2020)

4.9. Descriptive Statistics

4.9.1. Mortgage Financing and Growth of Real Estate

In a five-point scale, this variable was used to measure the extent to which mortgage financing affected real estate growth. The range was strongly agreed as 1 to strongly disagree at 5. The statements on mortgage financing and growth of real estate had responses that were in agreement that the amount available to developers is enough to support growth of real estate in Kenya with a mean score of 2.27 and standard deviation of 1.25 which meant a high variation among respondents. Results further showed that you can qualify for mortgage as long as you have security of the same value with a mean score of 1.77 with a standard deviation of 0.8 indicating high variation among respondents.

The respondents were in agreement that the repayment period offered by financial institutions is favorable to support growth in real estate with mean score of 2.0 and a standard deviation of 1.0 indicating a high variation among respondents. Further, the respondents were in agreement that there is no information asymmetry about mortgage financing, repayment and terms and conditions with mean score of 2.329 and a high standard deviation of 1.28 indicating a high variance among the respondents. According to the respondents, majority agreed that credit rating determines the amount available and the repayment period of mortgages with a mean of 2.0 and a standard deviation of 1.05 showing a high variance among respondents.

Results further indicated that the respondents were neutral as to whether a fixed rate mortgage has a favorable interest rate for financing real estate growth with a mean score of 2.9 and a standard deviation of 1.6 showing that there was high variance among respondents. Concerning adjustable mortgage having a favorable interest rate for financing real estate growth, respondents were in disagreement with a mean of 3.857 and a standard deviation of 1.457 showing high variance among the respondents. Finally, respondents were neutral that financial institutions interest rate for mortgages are affordable with a mean of 2.971 and standard deviation of 1.6059 showing high variation among respondents. This is represented in Table 11 below.

Mortgage Financing	Mean	Std. Deviation
Fixed rate mortgage has a favorable interest rate for financing real estate growth	2.929	1.6447
Adjustable mortgage has a favorable interest rate for financing real estate growth	3.857	1.4575
Financial institutions Interest rate affordability	2.971	1.6059
Amount available to developers enough to support growth in real estate.	2.271	1.2502
You can qualify for mortgage as long as you have security of the same value	1.741	0.716
Repayment period offered is favorable to support growth	1.860	0.767
No Information asymmetry on mortgage financing, repayment, terms and conditions	2.329	1.2822
Credit rating determines amount available and repayment period	1.840	0.7351

Table 11: Mortgage Financing

Source: Author (2020)

4.10. Inferential Statistics

Here, inferential analysis was done and included correlation, model of fitness and analysis of variance and regression analysis. It was on the basis of the regression analysis results that the researcher decided to use confirmatory factor analysis and found out that mortgage financing and equity financing explained growth in real estate at 17.449% and 11.47%.

4.10.1. Regression Analysis

This section presents the fitness of the regression model used to investigate role of financing options on the growth of real estate in Nairobi metropolis. The extent to which changes in the dependent variable real estate growth can be explained by change in the mortgage financing is illustrated by coefficient of determination.

4.10.2. Analysis of Variance

When testing for statistical significance, p-value indicates the level of relation of the independent variable to the dependent variable and if the significant number is less than the critical value (p-value) which is statistically set at 0.05, then the model is deemed significant in explaining the relationship between the dependent variable and independent variable otherwise the model will be deemed as non-significant. Overall, the results indicated the model was statistically non-significant looking at the reported p-value of 0.306 which is more than the conventional 0.05 significance level.

4.10.3. Regression Coefficients

The results indicated and concluded that mortgage financing had a $t = 0.993$ and a p-value of 0.324 showing very low significance level.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.266 ^a	.071	.013	1.16764

Table 12: Model Summary
Predictors: (Constant), Mortgage Financing

ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.724	4	1.681	1.233	.306 ^b
	Residual	88.619	65	1.363		
	Total	95.343	69			

Table 13: Variances
a. Dependent Variable: Growth of Real Estate
b. Predictors: (Constant), Mortgage Financing
Source: Author (2020)

Coefficients ^a						
	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.348	1.053		4.130	.000
	Mortgage Financing	.207	.209	.124	.993	.324

Table 14: Regression Coefficients
Source: Author (2020)

The regression equation is as follows

$$Y = 4.348 + 0.207\alpha_1$$

5. Summary of Findings

The initial results of the study showed that developers preferred mortgage financing which has adjustable interest rates compared to mortgage with fixed rate of interest. It was also observed that one can qualify for mortgage of an amount of value equal to the value of security. Most of the factors considered under mortgage other than security or collateral showed that mortgage supports real estate growth with a mean of 3.857 and 2.271. Mortgage is one of the most important factor that influences growth in real estate in Kenya according to multiple regression analysis. An increase in mortgage finance increases growth in real estate by 20.7% while all other factors left constant.

According to Confirmatory Factor analysis, the developers were of the view that the amount available to them was enough to support growth in real estate and that there is no information asymmetry about mortgage financing repayments. The results further showed that credit rating determines the amount available and the repayment period. The findings are consistent with the real estate simulation theory that there is financially relevant information in ascertaining constraints that affect real estate accomplishment by focusing on mortgage characteristics such as the cost of taking out a mortgage as a financial constraint to both the developer and interested parties.

5.1. Conclusion

The study concluded that mortgage financing had a considerable contribution to real estate growth in Nairobi metropolitan in Kenya.

5.2. Recommendations of the Study

This study recommends that mortgage firms invent new methods and products to attract players in the real estate industry which has recorded a tremendous growth in the last ten years and in which the trend seems to continue to the foreseeable future. The investors should also be encouraged to use equity financing since it is cheap in the long run because there is no interest charge.

Since affordable housing is still a big problem in Kenya, the researcher recommends that the Government of Kenya finds cheap methods to finance development of this sector and formulate more attractive tax incentives than exists today given that this is one of the main contributors of the country's GDP.

The study also recommends a research on those other financing options influencing growth in the real estate sector such as company's performance, the market share, operating efficiency, management and lenders attitudes, risk return trade off, political crisis and global economic instability that were not analyzed in this study.

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