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DETERMINANTS OF DEMAND FOR MORTGAGE FINANCE IN KENYA: A CASE OF NAIROBI COUNTY

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Abstract

Purpose: The purpose of the study was to determine the determinants for the demand of mortgage finance in Kenya.

Methodology: The study adopted a descriptive research design. The target population of this study was applicants for mortgage finance. Random sampling technique was used. The sample size was 384 respondents. Data was collected using structured questionnaires. The collected primary data was analyzed using Statistical Package for Social Science (SPSS) version 20. A binary logistic regression analysis was conducted. The Pearson Product was used to analyze the data. The findings from the analysis were organized and summarized in form of percentages, means ratios and frequencies and presented using tables and pie charts.

Results: The results indicated that the likelihood of cheap mortgage substitutes resulting to low demand for mortgage finance in Kenya was 4.911 times higher than more costly mortgage substitutes. The findings further indicated that the likelihood of high legal cost and high stump duty cost causing low mortgage demand are 2.550 and 2.274 times higher than when the costs are low. The findings also indicate that the likelihood of low income levels causing low demand for mortgage substitutes was 6.369 high than high income levels. Finally the findings indicate that the likelihood of lack of promotion causing low mortgage demand was 5.808 higher than having promotion.

Unique contribution to theory, practice and policy: The study recommended that mortgage financing institutions should consider the cost of mortgage substitutes, cost of mortgage, income level and promotion in order to increase the demand for mortgage finance in Kenya.

Keywords: *Price of mortgage cost of mortgage application, income level, promotion, demand of mortgage finance.*

1.0 INTRODUCTION

1.1 Background of the Study

The aim of a formal housing finance system is to create institutional arrangements which can efficiently mobilize and channel funds from savers to borrowers to finance a housing investment (Chiquier & Lea, 2009). At an individual level, housing finance makes it possible for people to have shelter and a real asset, which in most cases the largest investment for household. Moreover, at a macro level, it generates economic growth via job creation, economic linkages and it spurs entrepreneurial activities **(**IFC, 2010). In addition, housing finance plays an important role in shaping a country's wider housing system, stabilizes effectiveness of the

financial system and promoting economic development (Akinwunmi et al., 2008). Datta and Jones (2000) however argue that for housing finance to be effective; those seeking to be home owners have to be motivated to invest in homeownership. For example, Zandi and Deritis (2011) in a study on future of mortgage finance system in the U.S found that the aggressive pursuit of homeownership since 1930s was largely due to subsidies provided via mortgage interest and gains treatment, and the lower mortgage rates and affordable housing mandates of Fannie Mae and Freddie Mac, among other channels. The Clinton and Bush administrations often pointed to the rising homeownership rate as evidence of their economic policies success. With both parties set on this policy objective, many households that should not have received mortgage loans got them. Millions of bad mortgage loans were made, homeowners would have had difficulty repaying under the best of circumstances and as a result, millions are now losing their homes. The effect of this policy; housing market is said to have gone from boom to bubble to bust over the past decade, with a devastating impact on the global economy and financial system (Zandi Deritis (2011).

According to Center for Affordable Housing in Africa (2011) as quoted by Corvallis, (2012) in Niger, the smallest mortgage is equivalent to Kshs. 1.228 Million (USD 14,444), while 85.6% of the country population earn below Kshs. 5,100 (USD 60). Therefore, to enable majority of Kenyans to afford to buy homes, offering incentives is critical so that the gap between the housed and the homeless is reduced significantly. This study therefore seeks to fill the knowledge gap, caused by the lack of empirical data on factors that determine demand to mortgage finance towards by carrying out the current study. The researcher intended to find out if there exist any underlying factors and their impact on the above and further make recommendations based on the study findings towards improved access to mortgage finance.

1.2 Problem Statement

In line with the government's effort to achieve Vision 2030 and the overall development of the economy, provision of housing is essential. There is an acute shortage of 150,000 units annually and the ever increasing population, a housing problem arises and consequently social and economic problems (Nabutola, 2004). The importance attached to housing problems by the government has resulted in the adoption of the housing policy; its implementation and effectiveness has not been adequate as is depicted by the current state of housing in Kenya. There were various reasons deduced as causes of housing problems. The problem is come up with ways of availing loanable funds to majority of Kenyans. Finding measures to address this problem and subsequent implementation will provide for adequate affordable housing for the majority of Kenya. UN Habitat (2003) puts forward that the informal sector, which provides for the bulk of employment to the low income group, has not been generating regular and enough income to undertake the expensive housing construction and improvement. Too much borrowing and an assumption that the prices of homes would only go up led to the mortgage crisis. According to Baker (2008), before the mortgage crisis, banks offered easy access to money. One could qualify for mortgages with little or no documentation. Critical evaluation of the determinants that influence the demand for mortgage financing in the country could lead to the formulation of models that if well assimilated into the existing financial system could yield effective and efficient results.

Ngugi and Njori (2013) conducted a study on factors affecting access to mortgage finance in Nairobi. The study recommended that institutions that offer mortgage finance should foster the policy of providing incentives to potential home buyers in order to enable them access mortgage finance. Therefore this study acknowledged there was a low demand for mortgage finance in Kenya. The study therefore intended to use empirical data collected from mortgage financing institutions in Nairobi to assess the determinants of demand for mortgage finance in Kenya. The study sought to answer the question what determines the demand for mortgage finance in Kenya?

1.3 Research Objective

The objective of the study was to determine the determinants for the demand of mortgage finance in Kenya.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Innovation Theory of Mortgage Financing

Innovations are often adopted by organizations through two types of innovation-decisions: collective innovation decisions and authority innovation decisions. The collection-innovation decision occurs when the adoption of an innovation has been made by a consensus among the members of an organization. The authority-innovation decision occurs when the adoption of an innovation has been made by very few individuals with high positions of power within an organization (Rogers, *et. al.,* 2005). There are both positive and negative outcomes when an individual or organization chooses to adopt a particular innovation. Rogers states that this is an area that needs further research because of the biased positive attitude that is associated with the adoption of a new innovation (Rogers, et. al., 2005). In the Diffusion of Innovation, Rogers lists three categories for consequences: desirable vs. undesirable, direct vs. indirect, and anticipated vs. unanticipated.

The innovation adoption curve of Rogers is a model that classifies adopters of innovations into various categories, based on the idea that certain individuals are inevitably more open to adaptation than others. The concept of adopter categories is important because it shows that all innovations go through a natural, predictable, and sometimes lengthy process before becoming widely adopted within a population (Rogers, et. al., 2005). The late majority, on the other hand, are creatures of habit and predictability. They want to know the rules, they love systems. The beautiful thing about the late majority is that when they don't find rules or systems, they'll start figuring them out. Laggards are very set in their way, and will only adopt innovation when it has become mainstream i.e. standard practice in an organization (Agao, 2014).

2.2 Empirical Review

Aguko (2012) also conducted a study on analysis of the factors influencing mortgage financing in Kenya. The study established that enhancing secure and transparent titled lands, so as to minimize the risk of mortgage lending can ensure growth in mortgage financing. The study also established that respondents indicated that laws and institutions that are created to stimulate financial development and centralized/powerful governments which are incompatible with financial development affect mortgage financing in Kenya. The study revealed that laws and

institutions that are created to stimulate financial development and centralized/powerful governments which are incompatible with financial development affect mortgage financing in Kenya. The study concluded that interest rate setting on mortgage debt; government instruments and fiscal measures are the major policies that govern mortgage financing. The study concluded that policies in mortgage financing facilitate smooth completion of property transactions and foreclosures. These study provided inspiration for carrying this study.

Ngumo, (2012) conducted a study on the effect of interest rates on the financial performance of firms offering mortgages in Kenya. The study adopted a survey research design on a target population of all organizations registered for mortgage lending as of 31st December 2011 which were 33. The study used secondary data sources to collect data from CMA library and Central Bank of Kenya. The data collected were analyzed using multiple linear regression analysis conducted at 95% confidence level. The study established positive relationships in the five regression analysis between financial performance and the amount of mortgage loans advanced; three positive results were established between interest rates and the former. The study concludes that the amount of mortgage advanced by mortgage firms would lead to a high financial performance (EBIT) as it raises the revenue thereof. On the other hand, interest rate would positively relate with financial performance till it starts discouraging borrowings owing to increase in the cost of mortgage.

Makori & Memba (2012) conducted a study on the factors affecting access to mortgage in Kisii town. Data analysis which includes regression and correlations was done to establish factors influencing mortgage financing by commercial banks in Kenya. The study established that employment status of clients affects mortgage financing among banks, the study recommended that banks are be able to identify various risks they face in lending to the borrower; this would help them to determine their interest rates.

Rust (2008) found that rising cost of capital have had a dramatic impact on housing affordability and, while property prices have been rising, have decreased the amount of loan that a low-income household is able to support. In 2004, a household earning R3500 would have been eligible for a R101 000 loan at 11% interest over 20 years; in June of 2008, a household earning R3500 is only eligible for a loan of about R79 000, now at 16.5% interest. In 2004, a household earning R9000 per month would have been eligible for a R261 000 loan, well within the 'affordable' target market. Now, a household earning R9000 per month cannot find a house to buy at the R205 000 of mortgage finance that they can afford.

A study was carried out by Muguchia (2011) to investigate the effect of market information on the growth of mortgage financing. From the analysis the study found out that the lack of information reduce the demand for mortgage financing. It also revealed that independent variables like liquidity ratio and inflation had a negative impact on mortgage financing. The study concluded that information and advertising has a positive relationship with the demand for mortgage finance in Kenya.

3.0 RESEARCH METHODOLOGY

The study adopted a descriptive research design. The target population of this study was applicants for mortgage finance both successful applicants and those who were not successful.

Random sampling technique was used to obtain a sample size of 384 respondents. Data was collected using structured questionnaires. The collected primary data was analyzed using Statistical Package for Social Science (SPSS) version 20. A binary logistic regression analysis was conducted on the data set to ascertain the effects of independent variables on dependent variable. The Pearson Product was used to analyze the data in which correlation coefficient (R) and the coefficient of determination (R^2) of the variables was established. The findings from the analysis were organized and summarized in form of percentages, means ratios and frequencies and presented using tables and pie charts.

4.0 RESULTS AND DISCUSSIONS

4.1 Response Rate

A total of 385 questionnaires were printed and distributed to the identified respondents. Out of the total number of questionnaires distributed 270 were properly filled and returned. This represented a response rate of 70.1%.

4.2 Socio-Demographics Characteristics of Respondents

4.2.1 Age Group of the Respondents

The study sought to find out the age group of the respondents. The table below illustrates the findings.

Table 1: Illustrating the Age Group of the Respondents

Age Group	Frequency	Percentage (%)
Below 30	25	9.3
31 to 40	98	36.3
41 to 60	117	43.3
Above 60	30	11.1
Total	**270**	**100**

The above table clearly indicates that majority (43.3%) of the respondents were between 41 and 60 years. Those between 31-40 years were the second highest (36.3%) followed by respondents above 60 years (11.1%) and finally below 30 years were the least at 9.3% as shown above

4.2.2 Level of Education of the Respondents

The study conducted an analysis of the level of education of the respondents. Table 2 below shows the findings.

Table 2: Showing Level of Education of the Respondents

Level of Education	Frequency	Percentages (%)
Below secondary	5	1.9
Diploma/certificate	45	16.7
Bachelor's degree	144	53.3
Master's degree	50	18.5
Above master's degree	26	9.6
Total	**270**	**100**

This results indicate that majority (53.3%) of the respondents had Bachelor's degree. Those with Master's Degree were the second highest (18.5%) followed by Diploma/Certificates level at 16.7%. Only 9.6% reported to have above master's degree and below secondary level was the least with only 1.9% of the total respondents.

4.2.3 Occupation/Profession of the Respondents

The study conducted an assessment on respondents about their occupation/profession. The results are shown in the table 3 below.

Table 3: Showing the Occupation of the Respondents

Occupation	Frequency	Percentages (%)
Office Employment	124	45.9
Self Employed	95	35.2
Business	47	17.4
others(specify)	4	1.5
Total	**270**	**100**

The results shows that majority (45.9%) of the respondents were in office employment. Respondents in self employment were (35.2%) as shown above. Business people were 17.4% while 4 of the respondents who indicated others also indicated they were retired.

4.2.4 Size of the Family of the Respondents

The study sought to find out size of family of the respondents. Figure 1 below shows the findings.

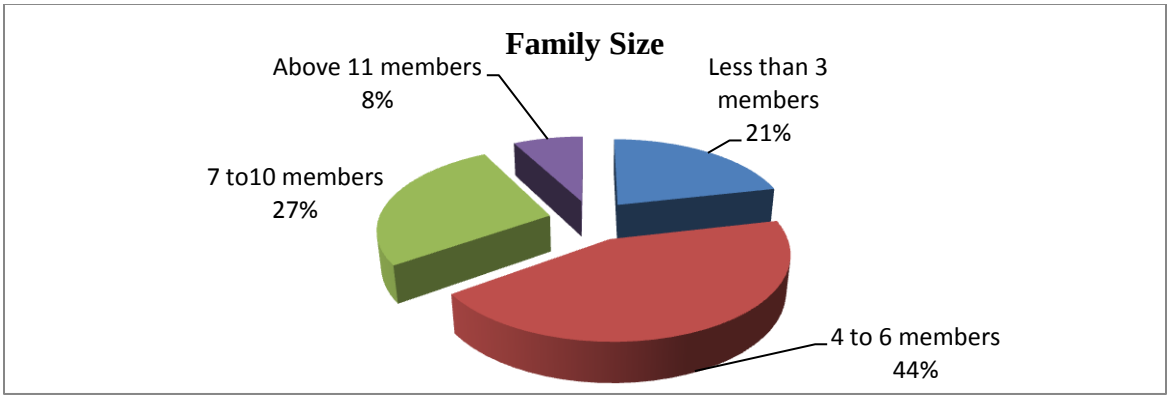

Figure 1: Showing the Size of Family of the Respondents

The results in the figure above indicates that majority (44%) of the respondents had a family size of between 4 and 6 members. The respondents who indicated had a family size of between 7 and 10 members were 27% whereas 21% indicated their family size was less than 3. Respondents with a family size of above 11 members were the least at 8%.

4.3 Cost Mortgage Substitutes Influence on Demand for Mortgage Finance

The study sought to find out if mortgage finance substitutes influence people demand for mortgage finance.

Table 4: Mortgage Substitutes Influence on Mortgage Demand

Response	Frequency	Percentages (%)
No	82	30.4
Yes	188	69.6
Total	**270**	**100**

The results in the table above show that majority (69.6%) were of opinion that the cost of mortgage substitutes influences the demand for mortgage finance in Kenya. The implication of these findings is that mortgage applicants in Kenya compare that cost of mortgage finance against other alternative ways of owning a house before deciding.

4.3.1 Cost of Building/Purchasing a House Using Own Savings and Mortgage Finance

This study also sought the opinions of the respondent on how cheap was own construction using savings compared to going for mortgage finance. The table 5 below shows the findings.

Table 5: Comparing Own Construction and Mortgage Finance

Response	Frequency	Percentages (%)
Non Response	82	30.4
Cheaper by less than 20%	56	20.7
Cheaper by between 21% to 50%	73	27
Cheaper by over 50%	59	21.9
Total	**270**	**100**

The results in the table above shows that majority (27%) were of the opinion that constructing using savings was between 21% and 50% cheaper than mortgage finance. Those who said it was cheaper by over 50% were 21.9% whereas 20.7% indicated it was cheaper by less than 20%. Those in non response category did not respond to question one which was leading to this question. The implication of these findings is that given enough savings majority of the people would not go mortgage finance because it is viewed as expensive compared to using own savings.

4.3.2 Cost of Building/Purchasing a House Using Ordinary Loan and Mortgage Finance

The study also sought the opinions of the respondents regarding the comparison between applying for ordinary loans and mortgage finance. The study asked the respondents to indicate how cheap they thought ordinary loan was compared to mortgage. Table 6 shows the findings.

Table 6: Comparing Ordinary Loans and Mortgage Finance

Response	Frequency	Percentages (%)
No Response	82	30.4
Cheaper by less than 20%	80	29.6
Cheaper by between 21% to 50%	56	20.7
Cheaper by over 50%	52	19.3
Total	**270**	**100**

Majority (29.6%) of the respondents indicated the ordinary loan was cheaper than mortgage finance by less 20%. The respondents who indicated that ordinary loan was cheaper by between 21% and 50% were 20.7% and those who indicated it was cheaper by over 50% were 19.3%. No response category represents those who did give their response. The results show that majority of the respondents opinions indicate than ordinary loans are considered to be cheaper than mortgage finance and hence a major determinants for demand for mortgage finance.

4.3.3 Cost of Renting/Tenancy and Mortgage Finance

Lastly the study analysed the respondents' opinions on the cost of renting/tenancy compared to mortgage finance. Using a similar scale as the other substitutes the respondents were required to indicate their opinion. Table 7 below illustrates the findings.

Table 7: Comparing Cost of Tenancy and Mortgage Finance

Response	Frequency	Percentages (%)
No response	82	30.4
Cheaper by less than 20%	125	46.3
Cheaper by between 21% to 50%	38	14.1
Cheaper by over 50%	25	9.2
Total	**270**	**100**

The results in the table above shows that majority (46.3%) indicated that renting/ tenancy was cheaper than mortgage finance by less than 20%. Those who indicated between 21% to 50% and over 50% were 14.1% and 9.2% respectively.

4.4.4 Correlation Analysis of Mortgage Substitutes and Mortgage Finance Demand

A correlation analysis was conducted to establish the association between items of mortgage substitutes and demand for mortgage finance. Table 4.8 below shows the findings.

Table 8: Correlation Test for Mortgage Substitutes

		Q1	Q2	Q3	Q4
Do mortgage substitutes influence your demand for mortgage finance (Q1)	**r- value**	1			
	Sig.				
	N	270			
Cost of building/purchasing a house using own savings (Q2)	**r-value**	.491*			
	Sig.	0.00			
	N	270			
cost of building/purchasing a house using ordinary loans (Q3)	**r-value**	.550*	0.093		
	Sig.	0.00	0.129		
	N	270	270		
cost of renting/tenancy (Q4)	**r-value**	.670*	.412**	.411**	
	Sig.	0.00	0.00	0.00	
	N	270	270	270	
Mortgage Demand	**r-value**	.244*	0.276	0.035	.121*
	Sig.	0	0.013	0.568	0.047
	N	270	270	270	270

The results in the table above indicate that there is a significant association between items of mortgage substitutes and mortgage demand. These findings indicate there was no multicollinearity between study variables. A correlation of above -0.70 or +0.70 between variables is regarded as multicollinearity. The item that had insignificant association with mortgage demand was the cost of building/purchasing a house using ordinary loans (r=0.035 and p=0.568). The results imply that there is a strong association between demand for mortgage finance and the cost of mortgage substitutes.

4.3.5 Univariate Binary Logistic Regression

The study conducted a univariate binary logistic regression to establish the odds ratio of items under mortgage substitutes to mortgage demand. The analysis gave the probability in terms of odds ratio of an item contribution low mortgage demand. The odds ratio is given in the Exp (B) column.

Table 9: Showing Model Summary

Step	1
-2 Log likelihood	327.665a
Cox & Snell R Square	0.088
Nagelkerke R Square	0.121
Chi-square	24.950 (p=0.000)

The result in the table above indicates that the overall model was significant this is indicated by the p-value of chi-square. Nagelkerke R-square shows that variables in the model explain 12.1% of the variation.

Table 10: Result for Univariate Binary Logistic Regression

	B	S.E.	Wald	df	Sig.	Exp(B)
Cost for mortgage substitutes (1)	2.439	.568	18.422	1	.000	11.457
Cost of own savings	-.169	.138	1.502	1	.220	.845
Cost of ordinary loans	-.328	.146	5.038	1	.025	.720
Cost of renting/tenancy	-.337	.190	3.163	1	.075	.714
Constant	.102	.248	.168	1	.682	1.107

A univariate logistic regression was performed to ascertain the effects of own savings, ordinary loans and renting/tenancy on the likelihood that there is low demand for mortgage in Kenya. The logistic regression model was statistically significant, χ^2= 24.950, p < .0000. The model explained 12.10% (Nagelkerke R^2) of the variance in mortgage demand and correctly classified 69.3% of cases. Having cheap mortgage substitutes is 11.457 times more likely to cause low mortgage demand than when mortgage substitutes are more costly. The result also indicate that reducing the cost of ordinary loans is 0.720 times more likely to cause low demand for mortgage finance than high cost of ordinary loans. The cost of own construction and the cost of renting/tenancy was statistically insignificant. These findings imply that the cost of ordinary loans has a significant relationship to the demand for mortgage finance in Kenya.

4.4 Impact of Cost of Mortgage on Mortgage Finance Demand

The study analysed the influence of the costs associated with application of mortgage finance on the demand for mortgage finance in Kenya. The study analysed the influence of interest rates, legal cost, down payment cost and stump duty cost on mortgage demand in Kenya. The results are shown in the sections below.

4.4.1 Interest Rates and Mortgage Finance Demand

An assessment was done to establish the opinions of respondents on how affordable were the interests rates charged for mortgage financing in Kenya on the common people. The table below shows the findings.

Table 11: Illustrating Affordability of Interest Rates Charged for Mortgages in Kenya

Response	Frequency	Percentages (%)
No Response	23	8.5
Unaffordable	110	40.7
Moderately affordable	80	29.6
Highly affordable	57	21.1
Total	**270**	**100**

The findings indicate that majority (40.7%) indicated that interest rates were unaffordable to majority of the people in Kenya. Approximately 29.6% indicated moderately affordable and 21.1% indicated that interest rates were highly affordable. The average interest rates for mortgage finance in Kenya have been varying from 19.8% p.a in 2011 to 18% p.a in 2012, 16.37% p.a in 2013 and finally 15.3% p.a in 2014 (CBK, 2015). When compared to interests rates in developed countries which goes to as low as 3%-5% p.a. while in Kenya interest rates are high and are major determinant of demand for mortgage finance (Campbell, 2013).

4.4.2 Stump Duty Costs and Mortgage Finance Demand

The study also analysed the respondents' opinions on the impact of stump duty cost on mortgage demand in Kenya. The table below shows the findings.

Table 12: Illustrating Affordability of Stump Duty Cost Charged For Mortgages in Kenya

Response	Frequency	Percentages (%)
No Response	58	21.5
Unaffordable	73	27
Moderately affordable	74	27.4
Highly affordable	65	24.1
Total	**270**	**100**

Majority of the respondents (27.4%) indicated that stump duty cost was moderately affordable. Highly affordable was indicated by 24.1%, unaffordable was indicated by 27% and 21.5% did not response to this question.

4.4.3 Legal Costs and Mortgage Finance Demand

The study sought to find out the views of the respondents on the affordability of legal fees involved in the mortgage application process. Table 13 below shows the finding.

Table 13: Illustrating Affordability of Legal Cost Charged for Mortgages in Kenya

Response	Frequency	Percent
No Response	14	5.2
Unaffordable	94	34.8
Moderately affordable	96	35.6
Highly affordable	66	24.4
Total	**270**	**100**

The findings indicate that majority (35.6%) of the respondents find legal fees to be moderately affordable. Only 24.4% indicated that legal fees were highly affordable.

4.5.4 Down Payment Costs and Mortgage Finance Demand

The study also conducted an analysis on the down payment cost to establish the views of the respondents on the affordability of the down payment cost. The findings are shown in the Table 14 below.

Table 14: Illustrating Affordability of Down Payment Cost Charged for Mortgages in Kenya

Response	Frequency	Percent
No Response	23	8.5
Unaffordable	80	29.6
Moderately affordable	88	32.6
Highly affordable	79	29.3
Total	**270**	**100**

Majority (32.6%) of the respondents indicated that the down payment cost was moderately affordable. Approximately 29.6% indicated that down payment cost was unaffordable while 29.3% indicated that down payment cost was highly affordable.

4.4.5 Correlation Analysis

Correlation analysis was conducted to establish the association between variables. The table below shows the findings.

Table 15: Correlation Analysis

		Overall Cost of mortgage	Interest Rates	Legal Cost	Stump Duty Cost	Down Payment Cost
Interest Rates	r-value	-0.082				
	Sig.	0.179				
	N	270				
Legal Cost	r-value	-.301**	.335**			
	Sig.	0	0			
	N	270	270			
Stump Duty Cost	r-value	.487**	-0.093	-.193**		
	Sig.	0	0.129	0.001		
	N	270	270	270		
Down Payment Cost	r-value	0.009	.193**	.387**	0.041	
	Sig.	0.888	0.001	0	0.498	
	N	270	270	270	270	
Mortgage Demand	r-value	.210**	.174**	.203**	.247**	.213**
	Sig.	0.001	0.004	0.001	0	0
	N	270	270	270	270	270

The results in the table above indicate that there is no multicollinearity between variables. The result also shows that there is a significant association between interest rates (r=0.174, p=0.004), stump duty cost (r=0.247, p=0.000), legal cost(r=0.203, p=0.001), down payment cost(r=0.213, p=0.000) and demand for mortgage finance in Kenya.

4.4.6 Univariate Binary Logistic Regression

Logistic regression was conducted to establish the likelihood of the costs of mortgage causing low demand of mortgage finance in Kenya.

Table 16: Showing Model Summary

Step	1
-2 Log likelihood	305.481a
Cox & Snell R Square	0.16
Nagelkerke R Square	0.22
Chi-square	47.134 (p=0.000)

Table 16 below shows the finding. The result in the table above indicates that the overall model was significant this is indicated by the p-value of chi-square. Nagelkerke R-square shows that variables in the model explain 22% of the variation.

Table 17: Result for Univariate Binary Logistic Regression

	B	S.E.	Wald	df	Sig.	Exp (B)
Overall cost of mortgage(1)	1.104	.592	3.479	1	.062	3.016
Interest Rates	.325	.166	3.821	1	.051	1.384
Legal Cost	.716	.230	9.730	1	.002	2.046
Stump Duty Cost	.428	.198	4.663	1	.031	1.534
Down Payment Cost	.298	.161	3.423	1	.064	1.347
Constant	-3.284	.837	15.411	1	.000	.037

A logistic regression was done to establish the impacts of interest rates, legal cost, stump duty cost and down payment cost on the likelihood of causing low demand for mortgage in Kenya. The logistic regression model was statistically significant, χ^2 (4) = 47.134, $p < .0000$. The model explained 22.0% (Nagelkerke R^2) of the variance in mortgage demand and correctly classified 66.6% of cases. The results indicate that increasing interest rates is 1.384 times more likely to cause low mortgage demand than having reduced interest rates. The results also indicate that increasing legal cost is 2.046 times more likely to cause low demand for mortgage finance than affordable legal cost. Further the results indicate that increasing stump duty cost is 1.534 times more likely to lower the demand for mortgage finance in Kenya than reduced stump duty cost. The cost of down payment and the overall cost of mortgage were statistically insignificant.

4.5 Impact of Income Level on Demand for Mortgage Finance

Effect of income level on demand for mortgage finance was analysed. Respondents were asked to indicate whether levels of income determined the demand for mortgage finance in Kenya.

Table 18: Income Level Influence on Mortgage Demand

Response	Frequency	Percent
No	56	20.7
Yes	214	79.3
Total	270	100

The results indicate that 79% of the respondents agreed that income level was a determinant of mortgage finance in Kenya. Only 20% disagreed that income level has an impact on demand for mortgage finance. The study sought to find out the income level of the respondents and the table below shows the findings.

4.5.1 Income Levels of the Respondents

A survey on the income levels of the respondents was conducted. The Table 19 below shows the findings.

Table 19: Showing Income Levels of the Respondents

Category	Frequency	Percentage (%)
No Response	56	20.7
Below 100,000	50	18.5
Between 101,000 to 150,000	61	22.6
Between 151,000 to 200,000	49	18.1
Over 200,000	54	20
Total	**270**	**100**

The results indicate that majority (22.6%) of the respondents had income level of between Kshs 101,000 and Kshs 150,000. Twenty percent (20%) of the respondents indicated an income level of over Kshs 200,000 while below Kshs 100,000 and between Kshs 151,000 and Kshs 200,000 was indicated by 18.5% and 18.1% respectively. Majority of the respondents indicated that they were office employed. The study noted that majority of mortgage applicant had income level of above Kshs 100,000.

4.5.2 Univariate Binary Logistic Regression

Logistic regression was conducted to ascertain the impacts of level of income on demand for mortgage finance in Kenya. The results are presented in the Table 20 and Table 21 below.

Table 20: Showing Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square
1	331.483[a]	.075	.103	X^2= 21.333 (0.000)

Logistic regression model was statistically significant ($x^2=21.33$ $p=0.000$). The variance explained was 10.3% (Nagelkerke R^2). This implies that income level explains 10.3% of variation in demand for mortgage finance in Kenya. The odds ratio of income levels and mortgage demand are shown in the Table 4.21 below. This implies that income level has a significant relationship with the demand for mortgage finance in Kenya.

Table 21: Showing Result for Univariate Binary Logistic Regression

	B	S.E.	Wald	df	Sig.	Exp(B)
Income_level_1(1)	1.345	.348	14.947	1	.000	3.839
Income_level_2	.046	.103	.199	1	.656	1.047
Income_level_3(1)	-.037	.266	.020	1	.888	.963
Constant	-.534	.311	2.947	1	.086	.586

The results indicated that the likelihood of low income levels causing low mortgage demand is 3.839 times higher than high income level. The results also establish that increasing income increases the demand for mortgage finance in Kenya up to a certain optimal point although the relationship was insignificant. It is assumed that people with very high income opt to use their own savings instead of mortgage.

4.6 Impact of Promotion on Demand for Mortgage Finance

The final objective of the study was to establish the impact of promotion on the demand for mortgage finance in Kenya. Types of promotion analysed included seeking information newspapers and attending expos and conferences on mortgage finance. The study analysed the how often do respondents seek information on mortgage from newspaper and the number of times they have attended expos and conferences on mortgage financing. The results are presented in the sections below.

4.6.1 Does Promotion on Mortgage Finance Affect the Demand for Mortgage Finance

The study sought to find out the opinions of respondents on whether promotions on mortgage finance influenced the demand for mortgage in Kenya. Below are the findings;

Table 22: Whether Promotion Affect Mortgage Demand

Response	Frequency	Percent
No	84	31.1
Yes	186	68.9
Total	270	100

Results indicate that majority (68.9%) of the respondents affirmed that promotion has positive impact on mortgage demand. Availability of information on mortgage finance has an effect on the demand for mortgage. It can be assumed that the higher the information the more the demand increases.

4.6.2 Frequency of Seeking Information on Mortgage in Newspapers

The study sought to find out how often respondents accessed newspaper for the purpose of seeking information of mortgage finance. The frequencies were in categories of "Not at all", "Daily", "Weekly" and finally "Monthly". The findings are shown in Table 23 below.

Table 23: Illustrating Frequencies of Respondents Access to Newspapers for Information

Response	Frequency	Percent
Not at all	59	21.9
Daily	76	28.1
Weekly	67	24.8
monthly	68	25.2
Total	**270**	**100**

Only 28.1% of the respondents indicated that they accessed newspapers daily seeking information on mortgage finance. Twenty one point nine (21.9%) percent indicated they don't seek information on mortgage from newspaper at all while 25.2% indicated only seek information on mortgage finance in newspapers once every month. Those who seek information weekly were 24.8% of the total respondents. The findings imply that a larger percentage of the population are lacking credible information on mortgage finance which may be contributing to low demand for mortgage finance in Kenya.

4.6.3 Frequency of Attending Expos and Conferences on Mortgage Finance

The study was interested in finding out how often respondents attended expos and conferences particularly held to market mortgage finance by institutions offering mortgage. The findings are shown in the Table 24 below.

Table 24: Illustrating Frequencies of Respondents Attending Expos and conferences

Response	Frequency	Percentage (%)
Not at all	83	30.7
less than 2 times	62	23
3 to 5 times	55	20.4
over 5 times	70	25.9
Total	**270**	**100**

Majority (30.7%) of the respondents indicated that they have never attended expos and conferences promoting mortgage finance. Twenty five point nine (25.9%) indicated to have attended over five times while 20.4% attended between 3 and 5 times. These findings imply that either majority of the respondents don't attend expos and exhibitions on mortgage finance or expos are not held regularly for people to attend. Generally, based on the findings of these study

it be concluded that majority of the people lack enough information on mortgage finance this is supported by the finding that over of 50% respondents don't seek information on mortgage finance.

4.6.4 Univariate Binary Logistic Regression

Logistic regression was conducted to establish the effects of promotion on demand for mortgage finance in Kenya. The results are shown in the table below.

Table 25: Showing Model Summary

Step	**1**
-2 Log likelihood	318.023[a]
Cox & Snell R Square	0.12
Nagelkerke R Square	0.165
Chi-square	X^2=34.592 (p=0.000)

Logistic regression model was statistically significant ($x^2=34.592$ $p=0.000$). The variance explained was 16.5% (Nagelkerke R^2). This implies that promotion contributes 16.5% of variation in demand for mortgage finance in Kenya. The odds ratio of promotion and mortgage demand are shown in the Table 26 below.

Table 26: Logistic Regression Results

	B	**S.E.**	**Wald**	**df**	**Sig.**	**Exp(B)**
Promotion_1(1)	1.428	.284	25.240	1	.000	4.170
Accessing Newspapers	.232	.126	3.408	1	.065	1.262
Attending Expos & conferences	.154	.118	1.710	1	.191	1.166
Constant	-1.304	.457	8.130	1	.004	.271

The results indicate that the likelihood of lack of promotion resulting to low demand for mortgage finance is 4.170 times higher than having promotion. The results also indicate that seeking information in newspaper and attending expos and conferences have increasing effect on the demand for mortgage although the relationship was insignificant.

4.7 Multivariate Logistic Regression Model

To establish the joint effects of all the study variables a multivariate logistic regression was done. The variables in this regression consisted of only variables that were significant at univariate stage for all the variables. The results of this regression are shown below.

Table 27: Model Summary

Step	**1**
-2 Log likelihood	243.542[a]
Cox & Snell R Square	0.332
Nagelkerke R Square	0.456
Chi-square	X^2=109.073 (p=0.000)

Multivariate logistic regression model was statistically significant ($x^2=109.073$, $p=0.000$). The variance explained was 45.6% (Nagelkerke R^2). This implies that the variables in the model contribute 45.6% of variation in demand for mortgage finance in Kenya. The odds ratio of promotion and mortgage demand are shown in the table below.

Table 28: Results for Multivariate Regression

	B	**S.E.**	**Wald**	**df**	**Sig.**	**Exp(B)**
Price for mortgage substitutes	1.592	.437	13.269	1	.000	4.911
Price for mortgage substitutes_3	-.294	.171	2.967	1	.085	.745
Legal Cost for mortgage	.936	.199	22.187	1	.000	2.550
Stump duty cost for mortgage	.822	.170	23.340	1	.000	2.274
Income level_1(1)	1.851	.398	21.670	1	.000	6.369
Promotion_1(1)	1.759	.342	26.489	1	.000	5.808
Constant	-5.45	.786	48.222	1	.000	.004

The results in the multivariate logistic regression indicate that the likelihood of cheap mortgage substitutes resulting to low demand for mortgage finance in Kenya is 4.911 times higher than more costly mortgage substitutes. Decreasing the costs of mortgage substitutes has a decreasing effect on mortgage demand. The findings further indicates that the likelihood of high legal cost and high stump duty cost causing low mortgage demand are 2.550 and 2.274 times higher than when the costs are low. The findings also indicate that the likelihood of low income levels causing low demand for mortgage substitutes is 6.369 high than high income levels. Finally the findings indicate that the likelihood of lack of promotion causing low mortgage demand is 5.808 higher than having promotion.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Based on the research findings and literature review, this study therefore concludes that price of mortgage substitutes has a significant relationship with demand for mortgage finance in Kenya. If the cost of purchasing /building a house using own savings or using ordinary loans from loaning facilities is significant low it will lower the demand for mortgage finance in Kenya. The study also concludes that the costs involved in mortgage application such as legal cost, stump duty cost, down payment have a significant relationship with the demand for mortgage finance in Kenya. The higher the costs the lower the demand for mortgage finances. Further, the study concludes that income levels of the people directly affect the demand for mortgage finance. People with very low income and very high income have low likelihood of demanding mortgage finance. Finally this study concludes that promotion/information availability have a significant relationship with the demand for mortgage finance in Kenya. A population that is more informed on mortgage finance will have high demand than the least informed.

5.2 Recommendations

Based on the findings, the study proposes the following recommendations to stakeholders in the mortgage financing sector. Mortgage institutions should evaluate the cost of mortgages substitutes for comparison and ensure advantages of mortgage finance outweighs other alternatives. The study also recommends that mortgage institutions should revise their interest rates to be economically viable. Others costs involved in mortgage application such as stump duty, legal cost should be waived or taken care of by the mortgage institutions. Down payment should be agreed upon by both the mortgagee and the institution. Mortgage institutions should custom made interest rates in relation to ones income. Further, the study recommends banks and mortgage institutions to carry out promotion campaigns to increase awareness on mortgage finance.

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