# The Influence of Demographics on Owner-Occupied Housing Decisions: A

# Case of Apartment Households in Nairobi County, Kenya

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## Abstract

The study sought to determine if demographics overall have a statistically significant influence on housing decision choices and to ascertain which particular demographics have a statistically significant influence on housing decision choices amongst apartment households in Nairobi County, Kenya. Using a descriptive cross-sectional design, the study sampled 226 apartment households using two-stage cluster sampling with 196 households responding. Using multiple regression analysis (standard), the study found that demographics overall have a significant influence on choice of neighbourhood (p=0.000) and choice of location of house (p=0.021). Gender, experience and expertise of home owner, composition of household and household expenditure, were statistically significant demographics in explaining choice of neighbourhood decisions; household expenditure levels and expertise of home owner were the only demographics with a statistically significant influence on choice of location of house; the marital status of owner of the house was found to be the only demographic with a statistically significant influence on source of financing decisions; size of family and household expenditure levels were the only demographics with a statistically significant influence on size of house decisions. From the outcome of the empirical investigation, the study makes recommendations to policy and practice; it cites limitations and makes suggestions on areas for further study.

**Keywords:** Demographics, Housing decisions, Housing markets and Apartments.

**JEL classification:** R- Real Estate; R2- Household Demography;

R210-home ownership and residential location choice.

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# 1 Introduction

The study investigates the influence of household demographics on the type of housing decisions that households make in view of apartment residential housing in Nairobi County, Kenya. The unit of analysis was the apartment household and the respondent was the owner of the apartment house since it is the owner who ordinarily makes such key decisions. Nairobi County was the context of the study in view of its cosmopolitan nature and its unique residential housing challenges associated with congestion, pollution, insecurity among others.

## 1.1 Background to the Study

Demographics have been widely cited to be key determinants of a household's relocation decisions in both the rental and owner-occupied residential housing markets (Wheaton, 1990; Cronin, 1982; Koklic & Vida, 2001; Rashidi *et al,* 2012; Hood, 1999). The study focused on the owner-occupied market for apartments in Nairobi County, Kenya. Ordinarily, households consider relocating when they experience significant changes in demographics (Wheaton, 1990). Such mobility would be considered to improve the utility of housing. A household's decision to buy a house is classified under personal finance (Kapoor e*t al.,* 2007).

Changes in household demographics are a key determinant of housing decision choices. The study was informed by 12 demographics which have been cited by literature as key determinants of residential housing decisions. These include: gender, age, marital status, professional affiliation and education level of owner of house, income of household, size of family, household composition, level of household expenditure, experience with housing markets, expertise in real estate matters and region of affiliation of owner of house (Hood, 1999; Wheaton, 1990; Rashidi *et al.,* 2012; Rossi, 1955; Galvez & Kleit, 2011). In particular, the study identified 4 housing decisions made by households aspiring to buy an apartment.

These include: choice of residential neighbourhood, choice of location of house (Galvez & Kleit, 2011; Quigley & Weinberg, 1977; Smith *et al,* 1979; Wong, 2002; Maier & Herath, 2009; Grether & Mieszkowski, 1974), source of financing (Arvanitis, 2013; Mundra & Oyelere; Hood, 1999)  and size of house (Wong, 2002; Koklic & Vida, 2001).

The housing market in Nairobi County, Kenya is unique compared to other Counties in the Country. The County governments came into existence following the promulgation of the Kenya Constitution in year 2010 which created 47 Counties in Kenya (The Constitution of Kenya, 2010). Out of the 47 Counties in Kenya, Nairobi County is unique since the Kenyan Capital City of Nairobi is in the County. Consequently, the residential housing market in the county is highly constrained due to overcrowding, congestion and spatial challenges. Nairobi County has an estimated population of more than 3 million people as per the last census of year 2009 (Kenya National Bureau of Statistics Web).

With the high rate of rural urban migration and the fact that Nairobi is the metropolitan city, Nairobi County faces special problems of residential housing which include: overcrowding, pollution, congestion, poor planning, insecurity and infrastructural challenges among others. Nairobi contributes about 50% of Kenya's GDP with housing being a key factor (Oundo, 2011; Imwati, 2010; Nabutola, 2004; Rockefeller Foundation, 2005). Nairobi has been considered to be largely multi-ethnic and cosmopolitan compared to other counties in Kenya; Nairobi County is a major labour market in Kenya. It is estimated that more than 25% of Kenya's urban population live in Nairobi (Beguy *et al.,* 2010; Rockefeller Foundation, 2005). With these unique factors, the owner-occupied residential housing market in Nairobi County remains a unique housing market to warrant an investigation of this nature.

## 1.2 Research Problem

Residential owner-occupied markets for apartments have gained increased attention over the past few years in both the developed and developing economies. Much of the documented housing market literature has dwelt on testing the efficiency of apartment housing markets (Ito & Hirono, 1993; Wang, 2004; Fu & Ng*, 2001), investigating the determinants of household mobility (Wheaton, 1990; Hood, 1999; Rossi, 1955) and demographics as factors explaining the likelihood of owning a home (Hood, 1999; Rashidi *et al*., 2012; Fisher & Jaffe, 203). There is limited empirical evidence from the Kenyan housing market to explain how demographics influence housing decision choices. Makachia (2010) laments that there are no well-known housing mobility studies in Kenya to corroborate evidence from the West. Much of the available literature conceptualizes demographic characteristics as factors influencing the likelihood of owning a home (Cronin, 1982; Hood, 1999; Case & Shiller, 1989, Rashidi *et al.,* 2012). Hence, it remains an issue for empirical investigation as to whether demographics have a statistically significant influence on apartment housing decisions amongst the owner-occupied households in Nairobi County, Kenya.

There is lack of well-known literature to explain how demographics influence housing decisions in the residential housing market in Nairobi County, Kenya. The available empirical evidence has conceptualized demographics differently. In particular, Imwati (2010) studied peri-urban settlement of Mlolongo Township in Nairobi and conceptualized household demographics as a factor affecting planning and formation of informal community settlements. Makachia (2010) investigated households in Kaloleni and Buruburu Estates in Nairobi and conceptualized demographics as a factor explaining household transformation. Beguy *et al.* (2010) investigated factors influencing household migration rates among Korogocho and Viwandani slums in Nairobi and conceptualized demographics and infrastructure as key determinants of household migration rates. Oundo (2011) conceptualizes demographics as a factor contributing to changes in commercial urban forms of Nairobi besides investigating their influence on location and

neighbourhood decisions. Hence, the cited empirical evidence is deficient to the extent that it does not explain the influence of demographics on key residential housing decision. Consequently, the study seeks to determine the influence of demographics on housing decision choices for owner-occupied apartment households in Nairobi County, Kenya.

## 1.3 Objectives of the Study

The general objective of the study was to determine the influence of demographics on housing decisions amongst apartment households in Nairobi County, Kenya.

The specific objectives of the study were:

i)     To determine if demographic overall have a statistically significant influence on housing decisions amongst apartment households in Nairobi County, Kenya.

ii)    To ascertain the specific demographics with a statistically significant influence on housing decisions amongst apartment households in Nairobi County, Kenya.

## 1.4 Review of Literature

Real estate consists of land and all property that is permanently attached to it including all the immovable such as buildings, houses, homes, fences and trees. Real property is also viewed as any piece of land including the air above it and the ground below it and any other structures on it (Bayer, 2003; Brueggeman & Fischer, 2008). Kenya has an estimated annual housing need of about 206,000 housing units. However, annual supply is about 50,000 housing units. About 40% of Kenya's housing needs are in urban areas (World Bank, 2011). The Kenyan government has adopted initiatives to lower the cost of mortgage financing for home buyers and construction of housing (Kenya Vision 2030, 2007).

The first attempt on a Kenya National Housing Policy was first captured in Sessional paper No. 5 of 1966/1967. After a couple of decades, a new policy was put in place that is the Kenya National Housing Policy of 2004. The policy addresses the deteriorating housing conditions in the country and how to bridge the shortfall in housing especially in urban areas (Nabutola, 2004). Some of the objectives of the housing policy include: to facilitate eventual right to adequate housing for every Kenyan, development and ownership of housing that is environmentally friendly and ideal, identify land and develop public housing in urban areas, increase the proportion of the exchequer allocation for housing, to provide improved infrastructural facilities and living environment, to protect the environment of human settlement among others (National Housing Policy for Kenya, 2004).

The study was anchored on two theories that is Rational Choice Theory (RCT) and Agency Theory. In view of RCT, households evaluate cost associated with housing as well as benefits in order to improve their housing utility. A decision would be considered utility maximizing if the associated benefits are greater than the costs. RCT further holds that households formulate a pecking order of decision choices to make (Heath, 1976; Backer, 1976, Nau, 1999). Agency theory posits that market participants engage agents to improve their market outcome in markets experiencing asymmetric information. In addition, the need for agents becomes important due to the separation gap between the principal and agent (Jensen & Meckling, 1976). Hence, in view of Agency Theory, most home buyers are constrained by limited time and lack of adequate relevant market information. Consequently, they consider engaging services of market intermediaries like housing agents and brokers in order to improve their market outcome.

Real estate market literature has widely documented several demographics as key factors explaining residential housing mobility. These include: gender, marital status, size of household, occupation, level of education, income, lifestyle, wealth,

income, personal characteristics, age and size of family; household mobility is also determined by: community ties, location of one's job, the fact that the house will be shared by other people, presence of children among other factors (Wong, 2002; Smith *et al.*, 1979; Makachia, 2010; Galvez & Kleit, 2011; Rashidi *et al.* (2012); Koklic & Vida, 2001; Hodd, 1999). Beguy *et al.* (2010) indicate that changes in family, changes in socioeconomic status and search for actual employment are some of the key factors that explain household mobility rates especially among low income households like slum dwellers. Imwati (2010) contends that social and ethnic composition and income actually determine a household's residential settlement. Mundra and Oyelere (2013) indicate that securing mortgage financing depends on the borrower's personal characteristics, their wealth and their networks.

Residential housing relocation has been widely associated with demographic characteristics. The classical household mobility study by Rossi (1955) found that families with more persons were often bound to relocate than families with one person. As household size increased, so did mobility while the presence of school going children in a family restricted mobility; the more educated persons were associated with increased mobility while the occupation of the household head was a poor predictor of relocation. The Rossi (1955) study further found that change of employment status seemed to affect mobility and those households who expected to move frequently opted for rental housing as opposed to buying a home. Quigley and Weinberg (1977) found that those households who initiated moves in the US did not settle far away from their previous homes. Wheaton (1990) contends that changes in household demographics are bound to initiate housing moves in order to improve housing utility. The higher the mover's income, the higher the desire for a 'superior' neighbourhood; when singles get married, they may desire bigger houses; when an individual moves to a better job,

their improved income may make them initiate moves to 'superior' neighbourhoods.

Wong (2002) indicates that a household's home buying decisions are associated with choice of location, type of housing, neighbourhood characteristics, location of one's job, community ties and size of house. Maier and Herath (2009) contend that the location of a house is a key decision that households must make. Smith *et al.* (1979) attribute choice of neighbourhood to income and value of the house. Phipps (1988) contends that households move in order to adjust its housing stress; households are indeed faced by a budget constraint that ultimately influences their housing location, source of financing and choice of neighbourhood. Smith *et al.* (1979) attribute housing moves to elements of neighbourhood, changes in household life cycle and economic constraints. Beguy *et al.* (2010) indicate that educational attainment, marital status, characteristics of a house and ethnic groupings are key factors explaining household mobility amongst low income households.

Empirical evidence on demographics and residential housing has been documented in the Kenyan housing market as well as foreign housing markets despite the contextual, methodological and conceptual gaps. Beguy *et al.* (2010) used longitudinal data in measuring household mobility and demographic trends as a key determinant of residential relocation in Korogocho and Viwandani settlements of Nairobi, Kenya between years 2003 to 2007. The study found that gender and age had a strong influence on mobility; mobility/migration was high among early adults especially between ages 20 to 24; gender was a factor explaining mobility since women were more mobile than men. The Beguy *et al.* (2010) study attributed housing formation to ethnic affiliation (tribe) by finding that about 64% of the residents who owned houses in Nairobi were from the Kikuyu community though this could be attributed to the fact that the community occupies Counties surrounding Nairobi. The study further found that those who

were in marital unions were less likely to migrate; mobility within Korogocho and Viwandani settlements was highly attributed to notice of demolition, educational levels, insecurity concerns, differences attributed to ethnicity, access to electricity, lack of stable source of income and changes in marital status (when women got married, they increased their mobility) among others.

Makachia (2010) investigated transformation of informal housing in the rental housing and owner-occupied housing in Kaloleni and Buruburu Estates of Nairobi, Kenya. The study found that economic and social factors explained transformation of residential housing in the two estates. The Makachia (2010) study found that size, type and location of house, economic factors, age of household head, size of a household, income, occupation and tribal affiliation were key social and economic factors affecting housing transformation within the two estates.

The classical Rossi (1955) study found that change of employment status, attainment of higher education and increase in household size all influenced mobility while the presence of school going children (in a family) restricted mobility. In Allegheny County US, Cronin (1982) found that household income, household expenditure levels, size of the household, age, race, and education of household head to be some of the critical demographics influencing the choice of a residential housing unit. Quigley and Weinberg (1977) found that age, income and duration of residence were not directly affecting the decision by a household to move.

Evidence on household demographics and home ownership has been cited in several other housing markets. In Malaysia, Tan *et al.* (2008) found that housing choices were affected by the location of the house, employment and income trends, socio-cultural issues and demographics. In Netherlands and Germany, Mulder (2006) found that couples preferred housing of certain quality before they

started having children; in Germany and Australia, homeowners were less likely to divorce than renters while those in stable marriages were more likely to buy a home. This was also evident in Britain where homeownership was strongly related to first being married. Similarly, Hood (1999) found that marital status had a strong influence on home ownership unlike family size; as the family size exceeded four, fewer families actually owned homes. In the US, Mundra and Oyelere (2013) found that the older the household head, being a female and higher educational attainment increased chances of home ownership. In Spain, Fisher and Jaffe (2003) found that the probability of owning a home increased with age and educational attainment.

Fisher and Jaffe (2003) cite a study conducted in 32 countries by Angel which found that on average, household size explained home ownership rates. Interestingly, the Angel study found that wealth was not correlated to homeownership rates. Doling (2008) found that in Italy, Greece, Portugal and Spain, older people were less likely to move. Quigley and Weinberg (1977) found that mobility rates increased with family size, short-distance moves were associated with females and the never married were less likely to move than the ever married; it also emerged that the older the household head, the lower the mobility rate.

Empirical evidence has systematically reported low mortgage penetration in Kenya and some African Countries. Central Bank of Kenya Survey of year 2010 found that most banks recorded low mortgage supply. Arvanitis (2013) documents a low mortgage uptake in Zambia due to high interest rates. The Finscope Survey of 2009 found that only 1.5% of households acquired their homes through formal credit (World Bank, 2011). However, the Kenya Vision 2030 (2007) has an objective of promoting affordable housing finance to both the home buyers and property developers to address the huge housing deficit in Kenya.

## 1.5 Methodology

The study adopted the positivist philosophy since the study used scientific methods to test relationships through an objective empirical investigation (Saunders *et al.,* 2003). The study investigation was a descriptive cross-sectional research design since data was collected from a large number of respondents with several variables being tested at one point in time; the descriptive design was considered appropriate since the study sought to answer the what and how questions relating to the study (Churchill Jnr. & Iacobucci, 2005; Burns & Bush, 2010). The unit of analysis was the household with the owner of the apartment house being the respondent. Cluster sampling was used (McDaniel Jr. & Gates, 2010) to select 226 households using SMART methodology (2012)-196 households responded. Questionnaires were delivered to the households in different owner-occupied apartments of Nairobi County: the data collection exercise took about three weeks. Renters were purposely excluded from the study in view of the focus of the study.

Primary data was obtained from the 196 households by ascertaining their prevailing demographic characteristics at the time when they bought their apartment houses. In addition, the respondents (apartment home owners) were asked to indicate the extent to which they were keen and particular on the neighbourhood of the apartment as they considered buying their homes; the respondents were also asked whether they chose to buy apartments which were strategically located with adequate supply of public utilities, amenities and a good transport system. Lastly, the study asked the respondents to indicate the source of financing (cash, mortgage or cash and mortgage) to buy the apartment house and the size of their house (2, 3 or 4 bedroomed with each size of house forming a cluster). One and five bedroomed apartment houses were purposely excluded since they are uncommon in Nairobi County, Kenya. Using SPSS version 21, data was analyzed using multiple regression analysis (standard) at a significance level of 0.05.

## 1.6 Preliminary Statistical Tests

Key preliminary statistical tests were carried out as a precursor for multiple regression analysis (the principal data analysis method). The research instrument was pretested amongst 9 households (3 from each of the 3 clusters). Reliability was tested using Cronbach Alpha and the outcome was acceptable (alpha=0.568) based on George and Mellery (2003) who advocate for an alpha greater than 0.50. Normality and linearity were tested using Quantile-Quantile (Q-Q) plots generated from the analysis software and the outcome was in the affirmative. The sample was found to be adequate (based on Kaiser-Myer-Olkin (KMO) test which had a value of 0.535- this was acceptable based on Kaiser (1974) who advocates for KMO values in excess of 0.50 for the sample to be considered adequate.

Multicollinearity was checked using Correlation matrices, Tolerance and Variance Inflation Factors (VIF). The three tests confirmed overall that multicollinearity was not excessive: there were not many correlations in excess of 0.80, Tolerance values were in excess of 0.20 as recommended by O"Brien (2007) (demographics= 0.964; housing decisions= 0.972) while VIFs did not exceed the rule of thumb of 4 proposed by Field (2009): the VIF were 1.037 and 1.028 for demographics and housing decisions respectively. Homogeneity of variance was tested using the Levene test and the same was in the affirmative: the variance ratio was about 2 (1.927) in line with Field (2009) who indicates that the variance ratio of Levene statistic should be about 2 or 3 for large samples of greater than 30.

## 2 Preliminary Notes

**Definition 2.1** Demographics- these are personal characteristics. In the context of this study, demographics are personal characteristics of the home buyer and the

characteristics of the apartment household.

## 3 Main Results

The study sought to determine if household demographics have a statistically significant influence on housing decisions amongst apartment households in Nairobi County, Kenya. Consequently, four *null hypotheses ($H_1$ - $H_4$)* were formulated to test the relationship between demographics and four decisions (choice of residential neighbourhood, choice of location of house, source of financing and size of apartment house respectively). All the hypotheses were tested at a significance level of 0.05. The results/regression analysis output of the study is presented in this section.

Table 1 below presents the output for simple correlation and coefficient of determination on household demographics and choice of neighbourhood decision.

**Table 1: Model summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .415[a] | .173 | .118 | .818 |

**Significance level= 0.05**

a. Predictors: (Constant) and Demographics.

b. Dependent variable: choice of neighbourhood.

Table 2 below presents results on the model overall in terms of significance.

**Table 2: ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 25.399 | 12 | 2.117 | 3.163 | .000[b] |
| | Residual | 121.781 | 182 | .669 | | |

| | Total | 147.179 | 194 | | | |
|---|---|---|---|---|---|---|

**Significance level= 0.05**

a.   Dependent Variable: Choice of Neighbourhood.

b.   b. Predictors: (Constant) and Demographics.

The results of demographics-choice of residential neighbourhood relationship ($H_1$) in Table 1 above indicate a moderate positive relationship (r= 0.415) with demographics explaining 17.3% of choice of residential neighbourhood decisions ($R^2$ =0.173). The *model overall was statistically significant (p= 0.000).* Hence, the *sub-hypothesis* that demographics *do not* have a statistically significant influence on choice of neighbourhood amongst apartment households is hereby *not supported.* Gender of home owner, composition of household, household expenditure, home owner experience with housing markets and expertise in housing matters were the only demographics with a statistically significant influence on choice of residential neighbourhood decisions.

Table 3 below presents the output for simple correlation and coefficient of determination on demographics and choice of location of apartment house.

**Table 3: Model summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .346[a] | .120 | .062 | 1.055 |

**Significance level= 0.05**

a.   Predictors: (Constant) and Demographics.

b.   Dependent variable: Choice of location of house.

Table 4 below presents results on the overall significance of the model.

**Table 4: ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 27.532 | 12 | 2.294 | 2.062 | .021[b] |

| | | | | | |
|---|---|---|---|---|---|
| | Residual | 202.540 | 182 | 1.113 | |
| | Total | 230.072 | 194 | | |

**Significance level= 0.05**

a. Dependent Variable: Choice   of Location of House

b. Predictors: (Constant) and Demographics.


In view of the results of demographics-choice of location relationship ($H_2$), the study found a weak positive relationship (r= 0.346) between household demographics and choice of location of apartment house. Demographics account for 12% of decisions related to choice of location of house ($R^2 = 0.120$). The model overall was statistically significant (p=0.021). Consequently, the *sub-hypothesis* that demographics *do not* have a statistically significant influence on choice of location of apartment house amongst apartment households is hereby *not supported*. Level of household expenditure and expertise of home owner in real estate matters were the only demographics with a statistically significant influence on choice of location of apartment house.

Table 5 below presents the output for simple correlation and coefficient of determination on demographics and source of financing.

**Table 5: Model summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .275[a] | .075 | .014 | .762 |

**Significance level= 0.05**
a.  Predictors: (Constant) and   Demographics

b.  Dependent variable: source of financing


Results in Table 5 above indicate a weak positive correlation between household demographics and decisions on source of financing (r=0.275). The results further indicate that household demographic characteristics account for 7.5% of decisions on source of finance to purchase an apartment ($R^2 = 0.075$).


Table 6 below presents results on the significance of the model overall.

**Table 6: ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 8.621 | 12 | .718 | 1.236 | .261[b] |
| | Residual | 105.758 | 182 | .581 | | |
| | Total | 114.379 | 194 | | | |

**Significance level= 0.05**
a.   Dependent Variable: Source of financing.
b.   Predictors: (Constant) and Demographics.

The results of demographics-source of financing relationship ($H_3$) indicate a weak positive relationship (r= 0.275) with only 7.5% of source of financing decisions being explained by demographics ($R^2$= 0.075). The *model overall* was *not statistically significant (p= 0.261)*. Hence, the *sub-hypothesis* that demographics *do not* have a statistically significant influence on source of financing amongst apartment households is hereby *supported*. In particular, only marital status of owner of the house was the only demographic with a statistically significant influence on source of financing decisions. The study found that 114(58.16%) home owners out of a total 196 were married.

Table 7 below presents the output for simple correlation and coefficient of determination on demographics and size of house.

**Table 7: Model summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .314[a] | .099 | .039 | .729 |

**Significance level= 0.05**

a. Predictors: (Constant) and Demographics.

b. Dependent variable: size of house.

Table 8 below presents results on the significance of the model overall.

**Table 8: ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| | Regression | 10.569 | 12 | .881 | 1.658 | .080[b] |
| 1 | Residual | 96.693 | 182 | .531 | | |
| | Total | 107.262 | 194 | | | |

**Significance level= 0.05**

a. Dependent Variable: Size of the Apartment House.

b. Predictors: (Constant) and Demographics.

The investigation of the demographics- size of house relationship ($H_4$) showed a weak positive relationship of (r=0.314) with demographics explaining 9.9% of decisions related to size of apartment house ($R^2 = 0.099$). The *model overall* was *not statistically significant (p= 0.080).* Hence, the *sub-hypothesis* that demographics *do not* have a statistically significant influence on size of apartment house amongst apartment households is hereby *supported*. In particular, size of family and level of household expenditure were the only demographics with a statistically significant influence on size of house decisions.

## 3.1 Discussion of Results

The investigation of demographics-choice of neighbourhood relationship found that demographic characteristics have a statistically significant influence overall in

explaining choice of neighbourhood decisions. This finding that household demographics determines choice of residential neighbourhood has empirical support from Smith e*t al.* (1979), Imwati (2010), Beguy *et al.* (2010) and Makachia (2010). In particular, the finding that only experience of the home owner with the housing markets and expertise in real estate matters had a statistically significant influence on choice of neighbourhood was empirically supported by Lambson e*t al.* (2004).

However, the study findings on the preceding paragraph contradict some of the empirical investigations. Makachia (2010), Smith *et al.* (1979) and Galvez and Kleit (2011) both found that income of the household was a key determinant of choice of residential neighbourhood unlike for this study. Though the study did not find size of family to be significant in explaining choice of neighbourhood decisions like Hood (1999), the Rossi (1955) study found that the size of family was indeed a key determinant of a household's settlement. According to the Kenya National Land Policy (2009), inadequate environmental management of land and rapid urbanization have been cited as a key challenge of the land equation in Kenya which affects the quality of residential neighbourhood.

The study further found that choice of location was particularly explained by level of household expenditure and expertise in real estate matters; the model overall was significant meaning that demographic characteristics overall do have a statistically significant influence on choice of location of house. This is finding is supported by Wong (2002), Ito and Hirino (1993), Claurietie and Sirmans (2006) and Imwati (2010) who both found that location of a house closer to public utilities and a good road network were key factors in explaining the settlement of a household. The finding that the home owners' expertise on real estate matters was significant in explaining choice of location compares with Northcraft and Neale (1987) but contradicts empirical evidence by Oundo (2011) who found that location of a house was largely influenced by accessibility and adequacy of

infrastructure. In Malaysia, Tan *et al.* (2008) found that choices in housing were largely determined by the type of house, its location among other factors.

Clayton (1998) indicates that buying a house is expensive hence the need for mortgage financing. The investigation of demographics-source of financing relationship showed that only marital status had a statistically significant influence on source of financing. This finding contradicts Galvez and Kleit (2011) and Mundra and Oyelere (2013) who both found that the wealth of a household influenced mortgage financing. The finding that income was not a significant factor in determining source of housing finance differs with empirical evidence from Zambia and Nigeria where most home owners could not access mortgage financing due to their limited financial capacity (Arvanitis, 2013). Similarly, the Bank of Ghana (2007) found that demand for mortgage financing in Ghana was significantly affected by low income levels, a finding which is not supported by this study either. This study did not find age of the home owner to be a determinant of source of financing thought Fortin and Leclerc (2007) found that age was indeed a key factor influencing access to mortgage financing.

Size of residential housing has received increased attention in the recent past due to the high rates of urbanization, overcrowding and poor planning in urban centres (National Housing Policy of Kenya, 2004). Hence, the study sought to test the demographics-size of house relationship and found that size of family and the level of household expenditure were the only demographic characteristics with a statistically significant influence on a household's investment decisions of size of house. The finding that size of family did have a significant influence on the size of house is empirically supported by Quigley and Weinberg (1977), Wheaton (1990) and Rossi (1955). This finding further confirms conventional thinking that the number of family members in a household often determines the size of house that a family desires all else constant.

## 4 Implications of the Study to Policy and Practice

The study outcome presents various implications to housing finance policy and practice. Firstly, demographics were found to be relatively weak predictors of each of the four housing decisions bearing in mind the low coefficient of determination ($R^2$) documented in section VII. Hence, apartment property developers should not overly rely on household demographic profiles in Nairobi County to influence their apartment construction decisions. Secondly, the finding of a weak influence of demographics overall on all the four housing decisions is a contradiction of empirical evidence from housing markets in the West: this is considering that much of the empirical evidence from the US and UK housing markets indicates that demographics are key determinants of housing decision choices. Lastly, the regression model overall was significant in in explaining demographics and choice of neighbourhood and choice of location of apartment house. Hence, demographics have a stronger influence on apartment housing decisions associated with the quality of housing environment as opposed to source of financing and size of apartment house.

## 5 Limitations of the Study

The study faced some limitations which are noteworthy. Firstly, a descriptive cross-sectional design of this nature could not capture the time effect associated with changes in demographics which a household is bound to experience. With the passage of time, household demographics change and such changes would initiate household moves to improve housing utility; changes in demographics will equally make households change their housing choices. Secondly, the study findings are context specific and may not be extended to other counties in Kenya since demographic characteristics of households may differ significantly from one County to another. Lastly, the respondent for the study was the home owner. Hence, in cases of households with many members, the home owner may not be a good representative of the entire household since some of the home owner's

demographics such as income, education and marital status may not be representative of the households' demographics.

# 6 Suggestions for further Study

The study recommends further empirical investigation to be carried out to address the unique findings documented by this study. First, a descriptive longitudinal design should be carried out in Nairobi County on the influence of demographics on housing decision choices in order to capture the time effect on decision choices. Secondly, a study should be carried out to investigate the relationship between marital status of the owner of the apartment house and source of financing since this was the only demographic with a statistically significant influence on source of financing. An exploratory study should also be carried out to document the factors (outside the scope of this study) that have a statistically significant influence on source of financing. Lastly, there is need to investigate why the high mortgage uptake in owner-occupied apartment housing market in Nairobi County, Kenya (80.6% of the 196 households had actually used mortgage financing) despite empirical evidence consistently documenting a low mortgage uptake.

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