The Mediating Effect of Housing Search on the relationship between Demographics and Residential Housing Decisions amongst Apartment Households in Nairobi County, Kenya

Job Omagwa, PhD[1] and Josiah Aduda, PhD[2]

Abstract

The study sought to investigate the mediating effect of housing search on the relationship between apartment household demographics and four residential owner-occupied housing decisions. Using two-stage cluster sampling, a sample of 196 respondents (owner-occupied households) was studied in Nairobi County, Kenya. The study found that housing search has a mediating effect on the relationship between household demographics and choice of neighbourhood, choice of location of house, source of financing and size of apartment house though the mediation was found to be not statistically significant in each of the four relationships. Consequently, formal housing search behaviour was found not to be a popular mode of alleviating information challenges in the housing market since the study recorded very low levels of housing search in support and in contradiction of empirical evidence from housing markets in the West. The study cites implications to policy and practice, limitations associated with the study and makes suggestions for further study.

Keywords: Housing Search, Demographics, Housing Decisions, County, Housing Markets, Efficiency of Housing Markets and Apartment Households.

JEL classification: R- Real Estate; R2- Household Demography; R21 & R22- Consumer and Household Behaviour and R210-Home Ownership and Residential Location Choice.

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[1] Affiliation of the first author. e-mail: omagwa.job@ku.ac.ke
[2] Affiliation of the second author. e-mail: jaduda@uonbi.ac.ke

1 Introduction

Search becomes an important aspect of investor decision making in most financial markets due to market inefficiencies and the need to improve investor market outcome. Hence, housing search becomes significant in housing markets due to the unique nature of such markets. Consequently, the study sought to ascertain if housing search behaviour of households had a statistically significant influence on the relationship between their demographic characteristics and housing decision choices. The study reports the results of hierarchical multiple analysis by determining if there is mediation associated with housing search and whether the mediation is statistically significant at a significance level of 0.05.

1.1 Background to the Study

Residential owner-occupied housing has gained popularity in Nairobi Kenya considering the high cost of rental housing; Nairobi is associated with the problem of congestion, rural-urban migration, the fact that Nairobi is Kenya's metropolitan city and the huge influx of people in search for jobs in the City (Rockefeller Foundation, 2005; Beguy e*t al.,* 2010; Oundo, 2010; Imwati, 2010). The decision of owning a residential house is part of personal finance (Kapoor e*t al.,* 2007). However, home ownership is quite expensive (Clayton, 1998) for most households and such decisions should be well thought out since a residential house is often shared by several people besides consuming the bulk of most households' income. Home buyers are often poorly informed about the existing market conditions (Watkins, 1998); those living nearby a property often have some information advantage over those who reside in a distant far (Lofgren e*t al.,* 2002). Different groups of homebuyers ordinarily have varying levels of information (Turnbull & Sirmans, 1993). The housing market differs with other markets since it is subject to many laws and regulations; real estate market intermediaries play a key role in housing markets by influencing much of the market outcome (Mulder, 2006).

Academic literature and empirical evidence has largely attributed demographics to housing decision choices amongst owner-occupied households (Kerin e*t al.,* 2009;

Hood, 1999; Wheaton, 1990; Rashidi *et al.,* 2012). Several demographic characteristics have been extensively cited as key determinants of residential housing decisions. These include: age, income, marital status, gender, profession, tribe, experience and expertise of the home owner in housing markets, education of the home owner as well as the income of household, size of family, composition of household and its level of expenditure (Wheaton, 1990; Hood, 1999; Rashidi *et al.,* 2012).

In the course of buying a residential home, households would ordinarily make key decisions. Key residential housing decisions include: as choice of an ideal neighbourhood (Galvez & Kleit, 2011; Quigley & Weinberg, 1977; Smith *et al,* 1979), choice of location of the house (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). Consequently, the study considered the four key housing decisions as the outcome/dependent variable of the study.

However, considering that the housing market is more complex and unique, the home buyer search effort and cost will inevitably intervene to influence the ultimate housing decision that the household makes. Housing search is the effort the buyers expend in the course of obtaining relevant market information and viewing the real property and the environmental conditions as well as the costs incurred in searching (Cronin, 1982). To improve housing utility, household mobility is characterized by search: residential search influences household location decisions (Quigley & Weinberg, 1977; Rashidi e*t al.* 2012). The significance of the influence of housing search on the relationship between demographics and housing decisions will be dependent on how informationally efficient the housing market is.

The housing market is complex and unique compared to other financial markets. Maier and Herath (2009) indicate that housing markets are heterogeneous, complex and illiquid. Hence, the market is confounded with information problems and inefficiencies. Buyers who reside far away often experience information disadvantage compared to those living in the neighbourhood (Garmaise & Moskowitz, 2004). Similarly, Mulder (2006) contends that international migrants are less likely to have a thorough knowledge of the local housing market: they are often faced with information disadvantage due to their physical separation from the market.

Watkins (1998) indicates that information is crucial in the operation of property markets and households are not well informed about the prevailing conditions in real estate markets. Hence, property sellers often have much more relevant market information compared to buyers. Different groups of home buyers face different types of search costs as they buy a residential home. Turnbull and Sirmans (1993) indicate that different groups of home buyers have different levels of information about housing markets as well as different search costs. Lambson *et al.* (2004) notes that real property sellers have superior knowledge on the state of the housing market and the neighbourhood characteristics compared to buyers who reside in the distant far. Consequently, housing search becomes an important part for home buyers in the course of buying process.

Koklic and Vida (2001) indicate that real property is unique and the home buying process is rather complicated and requires a lot more involvement from the buyers. Consequently, housing search is inevitable amongst real property buyers in order to improve their market outcome. Mulder (2006) contends that housing markets differ from other markets since there are a lot more market regulation and legal requirements governing real estate transactions unlike most markets. In addition, buying a house is much more expensive for most households and market intermediaries like landlords, property developers and financial institutions play a

vital role in housing markets. Housing markets are often undersupplied with certain relevant information such as: zoning laws and regulations, road improvements, available public utilities and surrounding developments (Clauretie & Sirmans, 2006). Information inefficiency in real estate markets could be attributed to the time devoted for search and the cost of matching buyers and sellers (Fu & Ng*, 2001).

According to Watkins (1998), the process of housing search is aided by the presence of market intermediaries like financial institutions, surveyors and property agents. Both property buyers and sellers incur expensive costs during the search process of buying or selling a home and such costs are significantly large (Carillo, 2012). Generally, the cost of searching is related to the source of information used, the mode of transportation used in searching and the time spent in searching (Cronin, 1982). Property buyers may conduct formal search by contacting market intermediaries or by reading newspaper advertisements; they can also use informal sources of search which include asking friends, reading housing vacancy signs and contacting family (Galvez & Kleit, 2011). Prospective home buyers would ordinarily search for information on housing legislation, infrastructure, security of the area, social and public utilities, sewerage system, transport network among others (Makachia, 2010; Oundo, 2011; Imwati, 2010).

Typical housing search process may involve physically visiting property sites, reading property magazines, journals and billboards and calling property agents for more information. Buyer search effort includes the number of neighbourhoods searched, number of dwelling units visited, number of dwelling units enquired about by phone and the average radius of search (Cronin, 1982). Residential search has a strong influence on a households location decisions: households make their housing decisions based on their lifestyles, preferences, utility, ones distance to work and commuting distance (Rashidi *et al.,* 2012).

Nairobi County, Kenya has an estimated population of more than three million with an annual shortfall of about 150,000 residential housing units (www.ministryofhousing.go.ke). The county is the most densely populated County in Kenya considering that it has a total of 17 constituencies. Within Nairobi County is the Kenyan Capital City (Nairobi): the City is a major labour market in the region hence experiencing a huge influx of many people in search for employment (Beguy *et al,* 2010). With the high rate of urbanization in Kenya, about 25% of Kenya's urban population lives in Nairobi (Rockefeller Foundation, 2005). Besides the cosmopolitan nature of the county, the housing market is Nairobi is affected by overcrowding, congestion, poor planning, pollution, infrastructural challenges, spatial constraints among other problems (Oundo, 2011; Rockefeller Foundation, 2005; Beguy e*t al.,* 2010; Imwati, 2010). Consequently, property developers have significantly shifted much of their effort to the construction of apartments to overcome spatial problems, overcrowding and congestion. In particular, Kenya's revised national housing policy of year 2004 has given attention to Nairobi especially on addressing the shortfall in residential housing supply. Kenya has an estimated annual housing deficit of about 156,000 units with about 40% of this deficit being in urban areas (World Bank, 2011) such as Nairobi. In order to enhance housing market information dissemination in the county, there is a bi-annual Nairobi Kenya Homes Expo Exhibition that brings together the real estate market stakeholders in the County. In Nairobi, there is an Architectural Association of Kenya (AAK) which incorporates architects, quantity surveyors, town planners, engineers, landscape architects, construction project managers and environmental design consultants to facilitate provision of decent, convenient and affordable housing to Kenyans (www.aak.or.ke).

1.2 Research Problem

Demographics have been widely documented as key determinants of residential housing decisions (Hood, 1999; Wheaton, 1990; Rashidi e*t al.,* 2012; Koklic &

Vida, 2001). However, the complex and unique nature of housing markets makes it complicated for most home buyers to access adequate relevant housing market information. Consequently, home buyers often expend much time, effort and cost in housing search with an aim of improving their market outcome especially when the housing market has challenges in information disclosure. The unique demographic characteristics of a household will ultimately influence the housing search behavior of a household which by extension affects the kind of housing decisions that the household makes.

There is scanty evidence from foreign real estate markets and the housing market in Nairobi County, Kenya on how housing search mediates the relationship between demographics and housing decisions. Empirical evidence on residential housing search from foreign housing markets dwells more on what kind of information home buyers search for and how buyers conduct housing search (Cronin, 1982; Wheaton, 1990; Fu & Ng*, 2001). The literature does not explain how housing search mediates the relationship between a household's demographics and the housing decision choices made in the course of buying a residential house. In addition, the empirical evidence is entirely from housing markets in the West: contextual differences between such markets and the housing market in Nairobi, Kenyan present a good basis for an empirical investigation of this nature. Makachia (2010) further indicates that there are no well known household mobility studies in the Kenyan housing market. In particular, renowned housing search studies are lacking in the Kenyan housing market.

Nairobi County is quite unique compared to other Counties in Kenya. Nairobi is faced with special problems of size, congestion, overcrowding, poor infrastructure, insecurity, spatial constraints among others; the county is multi-ethnic and cosmopolitan besides hosting about 25% of Kenya's urban population (Nabutola, 2004; Oundo, 2011; Imwati, 2011; Rockefeller Foundation, 2005). Hence, apartments are the most popular form of residential housing in

Nairobi County to address problems associated with congestion and size. Housing studies in Nairobi County have largely dwelt on household mobility and housing market transformation in view of demographic trends (Imwati, 2010; Makachia, 2010; Oundo, 2011; Beguy e*t al.,* 2010).

1.3 Objectives of the Study and Hypotheses

The specific objectives of the study were:

i)   To ascertain the specific demographics and housing search components that have a statistically significant influence on housing decisions amongst apartment owner-occupied households in Nairobi County, Kenya.

ii)   To determine if housing search has a statistically significant mediating effect on the relationship between demographics and housing decisions amongst apartment owner-occupied households in Nairobi County, Kenya.

The study tested the *null hypothesis* that housing search *does not mediate* the relationship between *demographics* and *housing decisions* amongst the owner-occupied apartment households in Nairobi County, Kenya. Hence, *four sub-hypotheses* were tested for each of the four decision types (H_1-H_4) that is choice of neigbourhood, choice of location of apartment house, source of financing and size of apartment house.

2 Preliminary Notes

Definition 2.1 *Demographics- these are personal characteristics. In view of this study, demographics constitute personal characteristics of the respondent (owner of the apartment) and the characteristics of the household.*

Definition 2.2 *Housing Search- this is the effort the home buyer expends in searching for a residential house and the effort expended in searching for the same.*

3 Review of Literature

The study was anchored on three theories: Efficient Markets Hypothesis (EMH), Rational Choice Theory (RCT) and Agency Theory. In view of EMH, markets are considered efficient if prices adequately reflect all known information (Fama, 1969). Information problems in housing markets compel households to expend time and effort in searching in order to improve their market outcome. Housing markets are considered efficient if they are adequately supplied with housing market information (Claureties & Sirmans, 2006). RCT posits that investor choices are founded on a cost-benefit analysis of complex decisions with decision makers considered to be rational and utility maximizers (Nau, 1999; Scott, 2008; Heath, 1976). Hence, home buyer search behavior takes into account costs of searching and the gains associated with efficient search. Agency theory posits that a principal engages agent(s) to improve their market outcome in the presence of asymmetric information in financial markets. However, due to the separation gap between the principal and the agent, agency problems arise due to the divergent interests of the latter (Jensen & Meckling, 1976). Hence, in the context of this study agency relationships are founded on the premise that home buyers often have information disadvantaged compared to sellers and that the former are poorly informed about the prevailing market conditions (Watkins, 1998; Clauretie & Sirmans, 2006). Hence, the principal often engages market intermediaries like property agents/brokers and other market makers in order to improve their market outcome.

Housing market literature documents the efficiency of housing markets from different perspectives. These include: how fast new information is accessed by market participants and whether housing prices adequately capture the neighbourhood and property conditions (Ito & Hirono, 1993); whether households are occupying the right houses that is singles and unmarried occupying small houses while families occupy large houses (Wheaton, 1990); adequacy of supply of relevant market information on zoning laws and regulations, available public

utilities and road improvements (Clauretie & Sirmans, 2006); whether out-of-state/out-of-town buyers pay more to transact in housing markets compared to their in-state/in-town counterparts (Turnbull & Sirmans, 1993; Lambson *et al.*, 2004); whether home buyers have adequate time to search for housing and whether the cost of matching buyers and sellers is fair and reasonable (Fu & Ng*, 2001); fairness and reasonableness of brokerage costs, search costs and transaction costs (Case & Schiller, 1989) and market prices reflecting all available market information, having a sufficient number of buyers and sellers, few barriers to entry, low information and search costs and having no abnormal returns (Gau, 1987).

Home buyers often search for certain key information relating to neighbourhood conditions. In particular, most buyers search for information relating to the rate of crime, weather, the state of pollution in the area, ownership rights, zoning and development control laws, cost of mortgage financing, infrastructure (especially state of road network), public and social utilities, ease of commuting to work, physical space, location of the house, age of building, floor and parking space (Makachia, 2010; Imwati, 2010; Ito & Hirono, 1993; Clauretie & Sirmans, 1996). The floor space, age of the building and parking space are some of the characteristics of housing that inform home buyer choices (Ito & Hirono, 1993). Those households who live near a property will always have an information advantage over those who reside far away. Those residing within the neighbourhood often gain relevant market information in the process of reading the local papers, watching local news, shopping, sending children to school, driving around unlike those living far away who are often limited by time (Lofgren *et al.,* 2002).

Search for housing market information will often include real estate market attributes such as location of house, neighbourhood conditions, available

amenities and ease of access to work (Li & Tu, 2011). Home buyers determined to buy a house in a particular neighbourhood would often contact real estate agents in that particular neighbourhood to acquire relevant market information (Ito & Hirono, 1993). Koklic and Vida (2011) contend that personal attributes of a household influence the choice process when buying a house.

Academic and empirical literature on housing search is limited to the extent that much of it dwells on what home buyers search for in housing markets and how they conduct their housing search (Cronin, 1982; Wheaton, 1990; Galvez & Kleit, 2011; Makachia, 2010; Imwati, 2010; Fu & Ng*, 2001). There are no well-known housing studies on how housing search mediates the relationship between demographics and housing decisions. Makachia (2010) regrets that there are no well-known housing mobility studies in Kenya to corroborate empirical evidence from the West. Hence, the discussions of this study are limited to the extent of the above limitations.

There exists adequate empirical literature on the study variables. Housing search has been documented to be an integral part of the home buying process in several housing markets. Homebuyers in Virginia US spent $506 each time they visited and considered buying a house compared to $1,700 that home buyers spent in Tokyo (Carrillo, 2012). Cronin (1982) empirical investigation in Allegeny County (Pittsburgh) US found that minorities facing discrimination expended much less time and resources on search. The Galvez and Kleit (2011) study in the US found that most households deliberately avoided neighbourhoods that were largely dominated by racial groups other their own. The study found that most of the households displaced by the Holmat Consent Decree in Minneapolis remained in the central city close to their original homes (39% stayed within 2 miles radius and 58% within 3 miles). The Beguy *et al.,* (2010) study found that tribal affiliation

was a key factor in explaining housing formation in Korogocho and Viwandani settlements in Nairobi, Kenya.

The Lambson *et al.* (2004) makes various propositions on information in housing markets. They contend that those who reside within the same region where the real property is located will have access to more relevant information than their out-of-state counterparts since they can easily access such information while going to work, when taking their children to school, proximity of their residential homes to the real property at state, knowledge of market conditions when going shopping or information from the local newspapers. Such information is only accessed by out-of-state buyers by paying for the same or by contracting brokers. However, Cronin (1982) cites several studies that recorded very low levels of housing search: Rossi (1955) found that 48% of renters and 33% of home owners had examined only one housing unit; the Brown and Holmes (1971) study found 44% of home owners had examined only one unit while 88% percent searched four units or less; the Barrett (1973) study found that 42% examined four units or less and still found that 48% of households searched for less than a month.

4 Methodology

The study adopted the descriptive cross-sectional design whereby the study variables were investigated at a single point in time (Churchill Jr. & Iacobucci, 2005). Using two-stage Cluster sampling (as proposed by McDaniel Jr. and Gates (2010) and Cooper and Schindler (2003)), a sample of 226 apartment owner-occupied households in Nairobi County, Kenya was selected for the study though 196 households responded). While studying households in Mulolongo Township in Machakos area, Kenya and households in Kaloleni and Buruburu estates in Nairobi, Kenya, Imwati (2010) and Makachia (2010) both used two-stage cluster sampling respectively. Households in this study were classified into 3 clusters (2, 3 and 4 bedroomed apartments) - 1 and 5 bedroomed apartments were purposely excluded from the study since they were uncommon in the

County. The target population was the apartment home-owners who had bought their apartments within two years preceding the data collection exercise (which took place in August 2014) to limit the influence of changes in household demographics associated with the passage of time as documented by Wheaton (1990).

The study used primary data which was obtained using a questionnaire. In particular, the study sought to enquire about 12 demographic characteristics prevailing at the time when the households bought their apartment houses that is: gender, age, educational level, profession, experience, expertise with real estate markets, region of affiliation and marital status of owner of house; size of household, income of household, composition of household (males, females, school going children etc) and level of household expenditure. The study also determined the type of housing decisions made in terms of choice of neighbourhood, choice of location of house, source of financing and size of apartment house. Housing search behaviour was ascertained by asking the households to indicate the search effort expended and search cost incurred in the course of buying their apartment house. This included: the number of visits made to various property sites, number of apartment locations visited, cost of property inspection & property valuation, search for true value of property, time devoted to search for an apartment to buy, reading real property magazines/journals and billboards, number of neighbourhoods actively searched, average distance covered in searching for house, number of lenders contacted for financing and safety of the apartment and the area. Several statistical tests were carried out on the data before data analysis which was performed using hierarchical multiple regression analysis (at a significance level of 0.05) using SPSS version 21.

Hierarchical multiple regression analysis was used to determine mediation. Fazier *et al.* (2004) advocate the use of regression analysis in testing mediator effects. Citing Baron and Kenny (1986), Frazier *et al.* (2004) define a mediator as a

mechanism through which a predictor influences an outcome variable. In the context of this study, housing search is the mediator by virtue of its intervening effect on the relationship between household demographics and housing decisions choices. According to MacKinnon (2000), regression analysis is the most common method for testing mediation. Consequently, the study used hierarchical multiple regression analysis using the SPSS test for mediation. In model 1, the analysis captures demographics of the households and the outcome (housing decisions); in model 2, household demographics are entered into the model first as the control variable then housing search is entered in model 2 as the mediator. Mediation is found to exist when there is a change in R square (in model 2); the moderation is found to be statistically significant when the change statistic for F (in model 2) is less than the significance level of 0.05.

5 Preliminary Statistical Tests

Several preliminary statistical tests were performed on the data. Instrument validity was conducted by pre-testing the research instrument amongst 12 households (4 households from each of the 3 clusters); reliability was tested using Cronbach Alpha with a score of 0.568 being recorded- this was acceptable in view of George and Mellery (2003) who support Alpha values of greater than 0.50. Normality and Linearity were in the affirmative based on Quantile-Quantile (Q-Q) plots produced by the analysis software (SPSS). Multicollinearity was found not to be excessive based on Correlation matrices, Tolerance (all the values were in excess of the minimum threshold of 0.20 as recommended by O'Brien (2007)); the Variance Inflation Factors (VIF) were all below 4 as recommended by Field (2009). The Levene test was used to test for homoscedasticity (which was found to be in the affirmative since the variance ratio for the Levene statistic was about 2 as proposed by Field (2009)). The Kaiser-Meyer-Olkin (KMO) test found the sample to be adequate (KMO=0.535) since the KMO value was in excess of 0.50 as recommended by Kaiser (1974).

6 Main Results

The output of hierarchical multiple regression analysis is presented by capturing the model summary table. The outcome is presented in terms of the four housing decision types that is choice of neighbourhood, choice of location of house, source of financing and size of house. The study further identifies the specific demographic characteristics and housing search components which have a statistically significant influence on each of the four housing decision types. This is in view of Doane and Seward (2011) who contend that only predictors with a significant influence on the outcome should be given attention in regression analysis.

6.1 Housing Search and Demographics-Choice of Neighbourhood relationship (H_1)

The results on the sub-hypothesis are presented in Table 1 below

Table 1: Model summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.409[a]	.168	.112	.816	.168	3.019	12	180	.001	
2	.475[b]	.226	.131	.807	**.058**	1.432	9	171	**.178**	1.947

Significance level= 0.05

a. Predictors: (Constant) and Demographics.

b. Predictors: (Constant), Demographics and Housing Search.

c. Dependent Variable: Choice of Neighbourhood.

The results in Table 1 above indicate that housing search *mediates* the relationship between demographics and choice of neighbourhood by virtue of the quantum change in R^2 (R^2 change=.058) *but the mediation is not statistically significant* in view of the change statistic for F in model 2 (p=.178). Hence, the *sub-hypothesis*

that housing search *does not* have a statistically significant *mediating effect* on the relationship between demographics and choice of neighbourhood amongst the owner-occupied apartment households *is hereby supported*.

The study found *gender* of home owner, *expertise in real estate matters*, *household expenditure level* and *composition of household* to be the only demographics with a statistically significant influence in explaining choice of neighbourhood decisions when housing search is taken as the mediator variable on demographics-choice of neighbourhood relationship. The *average distance covered in searching* was the only housing search component with a statistically significant influence in mediating demographics-choice of neighbourhood relationship. The regression *model overall was statistically significant (p= .001).*

6.2 Housing Search and Demographics-Choice of location of apartment relationship(H$_2$)

Table 2 below captures the results of the above sub-hypothesis

Table 2: Model summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.342[a]	.117	.058	1.062	.117	1.993	12	180	.027	
2	.408[b]	.166	.064	1.059	**.049**	1.117	9	171	**.353**	1.973

Significance level= 0.05

a. Predictors: (Constant) and Demographics.

b. Predictors: (Constant), Demographics and Housing Search.

c. Dependent Variable: Choice of Location of Apartment House.

The results in Table 2 above indicate that housing search *mediates* the relationship between demographics and choice of location of apartment house (R^2 change =.049) but *the mediation is not statistically significant* considering the change statistic for F in model 2 (p= .353). Consequently, the *sub-hypothesis* that housing search *does not* have a statistically significant *mediating effect* on the relationship between demographics and choice of location of apartment house amongst the owner-occupied apartment households *is hereby supported*. The regression *model overall was found to be statistically significant (p= .049).*

The output in the Coefficients Table showed that only *household expenditure levels* and the *expertise of home owner in real estate matters* were statistically significant factors in explaining the demographics-choice of location of apartment house relationship.

6.3 Housing Search and Demographics-Source of financing relationship (H₃)

Results of the sub-hypothesis test are captured in Table 3 below

Table 3: Model summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.283^a	.080	.018	.760	.080	1.301	12	180	.221	
2	.381^b	.145	.040	.752	**.065**	1.453	9	171	**.169**	2.160

Significance level= 0.05

a. Predictors: (Constant) and Demographics.

a. Predictors: (Constant), Demographics and Housing Search.

b. Dependent Variable: Source of financing.

Results in Table 3 above indicate that housing search *mediates* the relationship between demographics and source of financing by virtue of the quantum change in R square (R^2 = .065); However, the mediation is *not statistically significant* at 0.05 (change statistic for F =.169). Hence, the *sub-hypothesis* that housing search *does not* have a statistically significant *mediating effect* on the relationship between demographics and source of financing amongst the owner-occupied apartment households *is hereby supported*. Results from the ANOVA table indicate the *regression model overall to be not statistically significant (p=.133).*

From the Coefficients table, only marital status of the home owner was statistically significant in explaining source of financing when housing search is taken as the mediator in the demographics-source of financing relationship.

6.4 Housing Search and the Demographics-Size of Apartment House relationship (H_4)

Results of the sub-hypothesis are presented in Table 4 below

Table 4: Model summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.314[a]	.098	.038	.733	.098	1.635	12	180	.085	
2	.400[b]	.160	.057	.726	**.062**	1.395	9	171	**.194**	1.622

Significance level= 0.05

a. Predictors: (Constant) and Demographics.

b. Predictors: (Constant), Demographics and Housing Search.

c. Dependent Variable: Size of Apartment House

The results in Table 4 above indicate that housing search *mediates* the relationship between demographics and size of apartment house (R^2 change $=.062$). However, the *mediation is not statistically significant* in view of the change statistic for F in model 2 (p= .194). Hence, the *sub-hypothesis* that housing search *does not* have a statistically significant *mediating effect* on the relationship between demographics and size of apartment house amongst the owner-occupied apartment households *is hereby supported*. In view of the results in the ANOVA table, the *model overall was not statistically significant (p= .067).*

The output in the Coefficients table showed that only *size of family* and *level of household expenditure* were statistically significant factors in explaining the demographics-size of apartment house relationship.

7 Findings and Discussion

This section reports the findings of the study in view of the specific objectives of the study. It also presents a discussion of the results of the study by doing a comparison and contrast of the same with literature.

7.1 Findings

In view of the results presented in the preceding section, housing search mediates the relationship between demographics and choice of neighbourhood, choice of location of apartment house, source of financing and size of apartment house. However, in all the four sub-hypotheses, the mediation of housing search was not statistically significant: this is an indication of low levels of formal housing search. The study further found that most of the demographics had a statistically significant influence on the four decision types. Age, profession, experience with housing markets, region of affiliation (a proxy for tribe) and education of home owner and income of the household were not statistically significant demographics in explaining the four decision types when housing search was taken as the mediator variable.

The results of the study were suggestive of very low levels of housing search (since the mediation of housing search was not statistically significant) indicating that the apartment owner-occupied housing market in Nairobi County, Kenya is efficient to the extent of the scope of the study. The average distance covered while searching was the only housing search indicator with a statistically significant influence on the relationship between demographics and the four housing decision types.

7.2 Discussion of Findings

This section compares and contrasts the study findings with the prescriptions of academic literature and empirical evidence on the stud variables. The study found that there was indeed a mediation effect associated with housing search though the same was found to be not statistically significant in influencing the relationship between demographics and the four decision types that is choice of neighbourhood, choice of location of apartment house, source of financing and size of house. This finding compares with empirical evidence by Rossi (1955), Cronin (1982) and Carrillo (2012) to the extent that gender of home owner and composition of household influence choice of neighbourhood when housing search is taken as the mediator variable. The average distance covered while searching was found to be the only search indicator with a statistically significant influence on choice of neighbourhood.

The study findings on the home owners' region of affiliation and their gender further contradict Galvez and Kleit (2011) and Quigley and Weinberg (1977) who both found that tribal affiliation and gender of the home owner influenced choice of residential neighbourhood respectively. Preference of particular neighbourhoods has been empirically confirmed by the Galvez and Kleit (2011) study which found that households who were displaced by the Holmat Consent Decree in Mineapolis US ended up residing within the outskirts of the central city closer to their original homes. The Galvez and Kleit (2011) study also found that

all races avoided certain neighbourhoods that were preoccupied by racial groups other than their own.

When testing the mediation of housing search on the demographics-location of house relationship, the study found that expenditure of household and expertise of home owner in real estate matters were the only statistically significant factors in explaining location of apartment house. The study finding on the home owners' expertise in housing market matters are supported by Northcraft and Neale (1987) but contradict the prescriptions of National Housing Policy of Kenya (2004) and Rashidi *et al.* (2012) on the need to expend adequate search effort to improve housing location utility. This is considering that the study results indicate minimal search effort to improve location outcomes. The finding that the home owners' tribal affiliation did not influence choice of location was found to contradict evidence by Wong (2002).

The study tested the mediating effect of housing search on demographics-source of financing relationship. Clayton (1998) indicates that buying a residential house is expensive and that most buyers often opt for mortgage financing since they do not have the requisite financial ability to buy a house. The study found that the number of mortgage financiers contacted for financing was not statistically significant in explaining source of financing. This finding contradicts Mulder (2006) who advocates for extensive searching for housing finance. The study found marital status of owner of the house to be the only demographic significant in accounting for source of finance decisions. The finding that buyer income was not significant in explaining source of financing contradicts evidence by Gau (1987) and Mundra and Oyelere (2013) who both found that securing mortgage financing was dependent on one's income and some personal attributes.

The study investigated the mediating influence of housing search on the demographics-size of house relationship and found that size of family and its level

of expenditure had a significant influence on size of house. These findings are supported by Hood (1999) and Wheaton (1990) who indicates that size of a family determines the size of house. The finding that the composition of a household did not significantly influence the size of house contradicts evidence documented by Koklic and Vida (2001) and Hodd (1999).

The findings of this study of the mediating effect of housing search being not statistically significant in all the 4 sub-hypothesis for H_4 is an indication of low levels of housing search in the owner-occupied apartment housing market in Nairobi County, Kenya. This outcome corroborates the findings of Rossi (1955), Cronin (1982), Barrett (1973) and Brown and Holmes (1971) who similarly found very low levels of housing search. Rossi (1955) found that 48% of those who rented houses and 33% of home owners had examined only one housing unit; Brown and Holmes (1971) found out that 44% of home owners had examined only one unit while 88% had searched four units or less; Barrett (1973) found that about 42% of the households had examined four units or less while 48% had searched for less than a month.

8 Implication of the Study to Policy and Practice

The outcome of the study has several implications to policy and finance practice. Firstly, mortgage financiers will focus their mortgage products on the married prospective home buyers since marital status was found to be the only demographic with a statistically significant influence on source of financing amongst the apartment owner-occupied households (114/58.16% of the respondents were married while 80.6% of the 196 respondents had actually used mortgage financing to buy their apartment homes). Secondly, physical search continues being a popular mode of searching amongst prospective apartment home buyers since the average distance covered while searching was the only housing search component which was found to be statistically significant in mediating the

relationship between demographics and choice of neighbourhood. Thirdly, prospective home buyers will avoid costly housing search since the market appears to be efficient (in terms of housing market information) to the extent of the scope of this study since housing search did not have a statistically significant effect on the relationship between demographics and all the four decision types. Finally, demographics and housing search have a higher influence in explaining choice of neighbourhood and apartment location decisions (since the model overall was significant for the two decisions) compared to source of financing and size of apartment house decisions.

9 Limitations of the Study

There were several limitations associated with this empirical investigation. Firstly, conceptual limitations are conspicuous that is much of the available literature on demographics dwells on how demographics influence the likelihood of owning a home; the bulk of literature on housing search dwells on housing search behaviour and what information prospective home buyers search for in housing markets. Hence, such conceptual differences limited the discussions of the study to that extent. Secondly, housing search behaviour was restricted to formal search; informal search behaviour was not considered due to lack of its popularity in housing market studies. However, the findings of the study suggest that informal search could be popular since the former was not significant in explaining the mediation effect of housing search on the relationship between demographics and housing decisions among the respondents. Thirdly, the discussion of the study were limited to the extent that there is lack of empirical evidence on the mediating effect of housing search on the relationship between demographics and housing decisions both in the Kenyan housing market and in foreign housing markets. Fourthly, the study was a descriptive cross-sectional design: this design does not capture the time effect in the study since most of the household demographics are bound to change with time and this could affect their housing decisions. Finally, the outcome of the study was context specific. Hence, the findings of this study

may not be entirely extended to all the other 46 Counties in Kenya considering that demographic differentials vary significantly across different counties in Kenya.

10 Suggestions for further Study

The study dwelt on formal search behaviour due to its empirical support. Hence, further study should investigate the influence of informal search behaviour among the households in Nairobi County, Kenya on the relationship between demographics and housing decisions. Further study should be carried out to investigate the efficiency of residential housing to the extent of the scope of this study since low levels of housing search were documented by the study. A similar study should be carried out in the future to investigate all households in Nairobi County, Kenya including those owning bungalows and Maisonnettes since such residential houses are popular in high class estates in Nairobi County. There is need for a descriptive longitudinal design to capture the effect of changes in demographics which could ultimately affect household decision choices.

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