REAL ESTATE VALUE AS CO-DETERMINANT OF HOUSING CHOICE OPTIMALITY: THE NIGERIAN EXPERIENCE

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Abstract

This paper examined the impact of real estate value as well as the impacts of 4 other pertinent variables (household income, commuting cost, workplace distance and household activity pattern) on housing choice optimality, HcO. Utilizing a sample of 107 purposively selected middle income households in Abuja and Minna, the study employed regression analysis to explore the intuition that real estate value is related to HcO. The results showed that the housing optimality model has a fair predictive explanation of approximately 57% - 77% for the explanatory variables. Findings from the study also revealed that real estate value with the other variables influence housing choice optimality, although the magnitude of such influence varies across the two cities. As such, real estate value represents a burden which households must bear in order to secure the right to an apartment of choice. It is concluded that given the real estate value, the consequential housing choice optimality, could be predicted across different housing markets in Nigeria.

Keywords: Abuja, Housing Choice Optimality, Minna, Nigeria, Real Estate Value, Multiple Linear Regression.

1.0 Introduction

Housing choice and its outcome as important determinants of wellbeing have come under renewed interest in housing economics literature. Partly in response to such interest is the need for urban policy response and evaluation of the drivers of these choices and outcomes (van Duijn and Rouwendal, 2014; Bocarejo *et al.*, 2017). As the most productive and important economic asset of households, the aspirations of households during their lifecycle is to obtain optimal housing and non-housing consumption subject to budget constraint (Littlewood & Munro, 1997; Zabel, 2004; Oktay *et al.,* 2014). However, bounded rationality in terms of the complexity of the housing as a multi-dimensional entity and the households idiosyncratic preferences present a housing optimization problem where most households' current utility functions are partially optimized.

Against this background, a vast majority of international studies has examined the drivers of households' location choice: commuting cost and workplace distance (Zax & Kain, 1996; Stutzer & Frey, 2004b), household demographic factors (Rapoport, 1997; Cinar, 2014), activity patterns (Ben-Akiva *et al.*, 2006; Bocarejo *et al.*, 2017) and property value (Rapoport, 1997; Nechyba and Strauss, 1997; Maclennan & O'Sullivan, 2012). In Nigeria, studies by Olatubara (1994, 1998) and Olatunji (2013, 2017) are the notable representative articles on residential location choice. However, given the central role of real estate value to all real estate decisions, no known study to the best of our knowledge has explored the impact of real estate value on, and its capability to predict housing well being/optimality, by providing evidence from the different housing markets in Nigeria. This is the focal point of this study.

The objective of the current research is therefore to examine the relationship between real estate value, a variable of interest and optimality, as well as the impacts of four other pertinent variables namely, household income, commuting cost, workplace distance and activity pattern in Minna and

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Abuja, with a view to predicting housing choice optimality.

2.0 LITERATURE REVIEW

2.1 Theoretical framework on residential location choice and optimality

The theoretical work on residential location dynamics is deeply rooted in utility maximization. The random utility theory assumed that individuals exhibit self-seeking interest behaviour and tend to maximize their total utility subject to demand, time and budget constraints (Ortuzar & Willumsen, 2001; McFadden, 2002; Handy, 2005). The starting point in residential location outcome is the search process which reveals a range of housing alternatives and its allied services. Households based on their discrimination capability (Ben-Akiva & Lerman, 1985; Ben-Avika & Bowman, 1998) weigh these alternatives together with other numeraire non-housing consumption (socio-demographic factors, commuting cost, living and workplace, activity nodes and cost of housing) and ultimately select the alternatives that best optimize their overall household utility function (McFadden,1978; Littlewood & Munro, 1997; Zabel, 2004; Oktay *et al.*, 2014).

In most cases, the actual households' utilities observed in the housing market are partial optimization due to bounded rationality. For instance, the spatial fixity and heterogeneous nature of housing imply that households suffer from information asymmetry which constrains their house choices to their immediate activity spaces or neighbourhoods (Adams, 1969). Behavioral theories have also drawn our attention to households' limited cognitive ability to simultaneously process large sets of information which imposes hierarchical decision making (Kahn *et al.*, 1987).

2.2 Housing choice outcome, Income, work place, commuting, activity pattern and real estate value.

Several studies have offered empirical investigation into factors influencing household's preference and residential choice optimization (Olatubara, 1994, 1998; van der Straaten & Rouwendal, 2010; Marsh &Gibb, 2011; Dunning & Grayson, 2014; Spickerman *et al.*, 2014; Sinniah *et al.*, 2016).

In terms of the effect of income on residential choice location, Dunning and Grayson (2014) in a current review of literature showed that house owners maximize their lifetime utility subject to wealth and borrowing constraints in order to obtain optimal housing and non-housing consumption. Priemus and Maclennan (2011) highlighted the importance of availability of finance and the associate interest rate as factors impacting on housing decisions. Ball and Harloe (2005) noted that income distribution has become less equal in most countries of the world and impact significantly on individuals' housing standards. The specific study of Srour et *al.* (2002) found that income level is a vital index of the status of a household, and its lifecycle stage. This is against the backdrop that many housing features as varied as neighborhood type, type and quality of house, size of plot, amount of rent affordable, and household's effective purchasing power are indexed to income. A more recent study by Cinar (2014) compared the expectations of low and high income households in terms of housing choice in the Istanbul housing market. The study concluded that that household's income and the housing price make up the preference of housing in most Istanbul cities, though such preference may change over an instant of time with regards to location, and the lifestyle of the household (Kauko, 2006).

A vast body of literature has also focused on analyzing the effect of activity pattern on residential choice. Household's activity pattern is characterized as factors which aid connectivity of people in space and constrain the availability of socio-economic opportunities (Paez *et al.*, 2010; Bocarejo and Oviedo, 2012; Bocarejo *et al.*, 2017). It has been linked to urban form/land pattern, location and the range of travel to access socioeconomic activities and opportunities (Ben-Akiva *et al.*, 2006; van Wee *et al.*, 2001; Wu and Hine, 2008; Bocarejo *et al.*, 2014). Srour et *al.*(2002) argued that workplaces and residences are not always coterminous, and the degree to which both activity nodes are linked is defined by accessibility. The earlier study by Weisbrod *et al.* (1980) hypothesized that households activity in space which are connected by transport system influence residential location choice, with households making significant trade-off between housing costs

and travel time. Such finding is in support of both the micro-economic theory (Alonso 1964; Muth, 1969; Olsen, 1969) and the 'New Urban Economics' (Beckmann, 1973) developed for the analysis of housing market, which are based on the assumption that housing and accessibility were jointly purchased in residential choice location.

The study by Pagourtzi (2003) however found contrary evidence to this theoretical explanation when empirically modelling the determinants of residential location outcome. The author reported that with the exception of house price, income and access were not positive significant predictors of residential location choice. The findings from Kryvobokov and Wilhelssen (2007) also showed that when access to transport is modeled, the distance to bus-stop was found to be the least important factor impacting on location choice and property value. Hunt (2010) examined the trade-off between urban form and transportation access and found that traffic noise and house rent have the greatest impact on residential attractiveness of a typical household. van Duijn and Rouwendal (2013) investigated the importance of cultural heritage for household location choice in Netherlands and found that activities such as restaurant and shops in the Netherlands which are located close to the Amsterdam inner city contributed to the choice and attractiveness of locating in the surrounding municipalities. In addition, the study showed that with the absence of such activities and other cultural heritage in the Netherlands, house price would decline by 17% in Amsterdam and 8% in Utretch.

The specific study by Olatubara (1994) discriminated between two groups of 736 households who were classified as being convenient and inconvenient with their residential location decisions in Ibadan, Nigeria. The findings from the step-wise discriminant analysis showed that households' would optimize their residential locations to ensure convenience to activity areas patronized, and that activity patterns such as the hope to change residence due to commuting longer distance, poor knowledge of urban structure and the need to change workplace were contributory to household's choice of residence which was not convenient. In a follow up study, the article by Olatubara (1998) examined the factors of residential location decision within Ibadan City. While the data employed in the research was similar to the data used in Olatubara's (1994) study, the study differ from a methodology perspective as it utilized an alternative approach known as the household centered nestling approach. Findings from the study revealed that the distribution of households' activity nodes appeared to be a better factor of residential location choice decision.

The determinants of housing choice decision has also been partly explained by a reflection of commuting cost and work place distance across locations in space (Fujita, 1989; Marsh and Gibb, 2011; Aditjandra, 2012). Donacby *et al.* (2005) have examined the household's motive and desire that drive decisions which lead to response behaviour over space and time. Based on the theory of constant time budget, Kung *et al.* (2014) emphasized that a rational household may relocate its workplace and place of living, or alter their commuting behaviour in order to maintain a reasonable commuting time. Literature has focused on the contribution of commuting cost to household's utility function, with different theoretical and empirical basis providing explanations that the net utility of a household decreases with increased commuting costs (van Ommeren *et al.*, 1997; van Ommeren *et al.*, 2000).

Stutzer and Frey (2004a) however noted that there is no systematic relationship between household's utility level and commuting cost. They argued that in the short run some participants in a perfect housing market are not fully compensated for their travelling costs, either by lower rents or higher wages. Zax and Kain (1996) analyzed how the probabilities of workers' residential mobility differ between two groups who had to commute longer and shorter distances due to the relocation of jobs. The study showed that those who travel longer distances were more likely to move than their counterparts, suggesting that an increase in commuting can impact on the optimal choice of residential location. Lim and Kim (2019) nonetheless mentioned that the relationship between commuting and the motive to move away from a sub-optimal housing is not always straightforward, and is hardly determinate. Housing heterogeneity, dispersal of employment opportunities and other contextual factors can reshape the visible pattern of interaction (Kim and Hewings, 2013; Kim, 2014). Stutzer and Frey (2004b) reported that an increase in a German household's commuting time by 19 minutes significantly reduce its subjective wellbeing by

12%. The study by Vanderstraaten and Rouwendal (2010) examined the co-location problem of educated and working households who required a residence within a reasonable commuting distance of the two jobs in Netherlands. The authors found that households who commute only to a single work place are willing to pay 919 euros to live 1 km closer to a large labour market, whereas households who commute between two jobs are willing to pay 6046 euros.

In discussions involving workplace distance, it has been empirically demonstrated that as distance of housing settlements to workplaces and other spaces of services potentially increases, the attractiveness derived by households from such houses starts to decrease (Phe and Wakely, 2000; Kauko, 2006; Guo and Bhat, 2007; Cinar, 2014). Cram (2005) analyzed the link between residential location and work travel, and noted that the growth of long-distance work journeys has partly resulted in household's choice of housing location based on accessibility to a potential work place. Factors such as globalization of services and improvement in telecommunication and transport facilities have led to the dispersal of sub-centre employment, with households exhibiting idiosyncratic preferences for particular residential choice and location (Anas *et al.*, 1998; Clapp *et al.*, 2001; Spickerman *et al.*, 2014). The earlier study by Friedman (1981) analyzed the impact of local public goods and community attributes on residential location choice of 29,000 households in San Francisco bay. Findings from the conditional logistic model showed that the quantity of housing services, longer time and distance to the workplace significantly impact on residential choice decisions of the households. Nechyba and Strauss (1997) examined the effects of local fiscal and other variables such as distance to central area, house price and the pattern of commercial activity on community choice of home owners in six school districts in Camden County of New Jersey. By utilizing a random utility model, the study reported that investment in education, degree of commercial activity and distance to the metropolitan are significant positive predictors of location decision. However, the study concluded that the higher marginal housing prices in the districts decreased the probability of the choice of a specific community among the homeowners. Similarly, the study of Ospina *et al.* (2013) examined community attributes effect on household residential location decisions in Medellin, Colombia. Using conditional logistic estimation, the study found that housing size and value – a proxy for socioeconomic characteristics of the population, has a negative coefficient in their residential choice models. They asserted that such inverse relationship is justified on the fact that households reside in homes located within neighbourhoods with lower house value and size to avoid higher utility taxes, but that have good public services available to them. Case *et al.* (2004) however emphasized that the value of a house has a major impact on household consumption and savings opportunities.

3.0 DATA AND METHODS

3.1 Data collection and measures

The data for this study were drawn from an earlier work by Olatunji (2013) which was based on a household survey conducted in the city of Minna and Abuja. Minna is the capital of Niger state and covers an approximate land area of 148.49 square kilometres. Abuja on the other hand has total land mass of 8000 square kilometers and acts as both the administrative and federal capital city of Nigeria. The two cities located in the North-Central geopolitical zone of Nigeria are assumed to be coterminous with functional housing markets. In terms of regional location and strategic importance, the two cities lie approximately 112 km apart and provide the gateway to the northern and southern part of Nigeria.

A total of 107 middle income households (51 for Minna and 56 for Abuja) selected from a significant representation of their respective housing markets were considered suitable for the present analysis. Utilizing stratified random sampling, these samples were purposively selected from 5 medium density neighbourhoods in Minna (Tunga Low Cost, Tunga Interior, Wushishi, Shiroro Hotel Road I and II) and 4 medium density districts in Abuja (Utako, Durumi, Wuye and Abacha Estate. The choice of middle income households was premised on the fact that Nigeria has been recognised as a lower middle-income level country (World Bank, 2009), and that given the low purchasing power of such significant subgroup in any urban setting, they are likely to be associated with consciousness for optimality in their housing choice decisions.

The survey provide information about each household's income, average commuting cost, tenure status (owner-occupancy and rental holding), plot size, property type, non-work activity patterns and real estate value (actual and imputed rents). The data on real estate value was complemented with information from Estate Surveyors and Valuers (ESVs) who aside beings real estate advisors to both renters and owners, are specialists in the management of rented and owner-occupier residential properties. The sample of ESVs chosen in each study area is taken as 10% of official membership in any State Branch with membership above 10, and 20% for less. In total, 7 firms were chosen from Abuja and 4 for Minna. The need for a reasonable level of accuracy also necessitated the data-set to be augmented by the addition of distances to key points of accessibility and location quality indicators using physical, instrument-backed and geo-referenced distance measurements. A review of the data further revealed that the housing optimality index (dependent variable) was developed from a computer simulation framework, a iterative process for modelling the best choice of house available to a willing and able household from a range of alternatives (the methodology employed in the simulation technique is beyond the scope of this paper). The derived optimality index for a house h at location j to a household i range between < 0≤ 1. Table 1 presents the description of the variables and data sources used in this study.

Table 1: Data description and data sources for the study

Variable	Description	Source
Dependent variable		
Housing_Optimality	Index of the level of household's well-being or fulfillment derived in the choice of a house from a range of alternative (denoted as a per centum)	Household
Independent variable		
Household_Income	Individual household income (in Nigerian Naira)	Household
Commuting_Cost	Commuting Cost (in Nigerian Naira)	Household
Real_Estate _Value	Real estate value (in Nigerian Naira)	Household & ESV Firms
Activity_ Pattern	Household non-work activity pattern (km)	Household
Workplace_ Distance	Home-workplace distance(km)	Household & Googlemap

3.2 Model

The study employed multiple regression model to analyze housing optimality variations due to the influence of real estate value. The formulation of the multiple linear regression analysis underlying the current empirical study takes the following form:

$$\text{Housing\_Optimality} = \alpha + \beta_1\,\text{Household\_Income} + \beta_2\,\text{Commuting\_Cost} + \beta_3\,\text{Real\_Estate\_Value} + \beta_4\,\text{Activity\_Pattern} + \beta_5\,\text{Workplace\_Distance} + \varepsilon \quad \text{(Equation 1)}$$

In equation (1) the household's well-being arising from a revealed or stated residential choice from a range of available options is denoted as Housing_Optimality, α is the constant term, $\beta_1 \ldots \beta_5$ are the estimated regression coefficients and ε is the uncorrelated residual term.

4.0 FINDINGS AND DISCUSSIONS

The findings and discussions of the empirical analysis includes the preliminary check on the

regression-based statistical tests, profile of respondents and, housing optimality outcome.

4.1 Demographic profile of the sampled middle income households

Table 2 provides the summary statistics of the data employed the study. For example, a typical middle income household in Minna city that resides in an apartment house commanding a market value of 21,000 naira and earns an income of about 211,000 naira, but commutes an average distance of 6.6 km to work and 159km to other non-work activity destinations at a cost of 25,207 naira has a housing well-being of 0.51. In Abuja, a middle income household living in a house with a market value of approximately 21,000 naira and earns an average income of about 589,000 naira, but commutes a distance of 6.8 km to work and 200km to other non-work activity destinations at an average cost of 33,500 naira has a housing well-being of 0.57.

Summarily, with the exception of the household income variable, the values of the mean in the two samples exhibit similar patterns. In terms of the variability of the distribution, both samples are not different and by extension any observed differences in our analyses cannot be aligned to any unsystematic oddity in the original data.

Table 2: Summary descriptive statistics for the samples

Variable	Mean	Standard Deviation	Minimum	Maximum
MINNA:				
Dependent variable				
Housing _Optimality	0.51	0.43	-0.81	0.98
Independent variable				
Household_Income	211,279.90	62,140.11	100,000	358,333.30
Commuting_Cost	25,207	9, 9371.93	11,500	45,000
Real_Estate _Value	21,011.55	3,867.15	847.76	26495.87
Activity_ Pattern	159.59	5.62	85	246
Workplace_ Distance	6.64	3.17	0.72	14.60
Number of sample	51			
Variable	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**
ABUJA:				
Dependent variable				
Housing _Optimality	0.57	0.42	-0.96	0.97
Independent variable				
Household_Income	589,211.90	195,811.50	360,000	1,300,000
Commuting_Cost	33,517.86	7.906.25	15,000	46,000
Real_Estate _Value	21,015.12	3,906.32	847.76	26495.87
Activity_ Pattern	200.79	43.99	72	300
Workplace_ Distance	6.79	2.78	0.90	11.55
Number of sample	56			

4.2 Preliminary check on the parsimony of the housing optimality model

In constructing a parsimonious multiple linear regression model, we conducted a preliminary check on whether some of the stringent assumptions underlying regression analysis have not been

violated. A diagnostic check on the parsimony of the multiple regression models showed a high level of predictive explanation for the independent variables (R^2 = 0.773 for the Minna city and R^2 = 0.571 for Abuja city). This range of R^2 values support the contention that multiple regression can also be employed in urban housing market to predict housing choice optimality. The low standard error of the estimates of 0.213 and 0.397 also revealed a high level of statistical precision for both housing optimality models. Furthermore, the computed Durbin-Watson statistics of 1.40 and 2.26 surpassed their lower critical values were rejected at 5% level of significance, suggesting that the error term of the regression are not correlated. Lastly, the F-statistic of 0.74 for the Minna city model and 11.06 for Abuja model implied that the regression coefficients are statistically different. In other words, the null hypothesis of parameters equality is rejected at 5% level of significance.

4.3 Findings from the multiple regression model on factors affecting housing optimality

The results of the multiple regression models for each city are reported in Table 3 and 4. Turning to the interpretation of the results, the constant provides a useful starting point, as it represents the least level of housing well-being (optimality) which can be derived by a household with a relatively limited income, commuting cost, activity pattern, property value and distance to work place. In Minna city, the constant showed that the minimum housing optimality for such typical household was 0.382 in contrast to 0.2057 for Abuja city. As a corollary, the sign and magnitude of the estimated constant coefficients are consistent with our theoretical considerations on household utility function. Based on the results reported for the Minna and Abuja city models (Table 3 and 4), most of the 5 predictors of housing optimality (with the exception of commuting cost for Minna and work place distance for Abuja) are highly significant at 5% level of significance with the sign of the coefficient estimates consistent with theoretical expectations.

Table 4: Minna city multiple regression model for housing optimality

Variable	Coefficients	95% CI		Standard Error	T-Stat	P-val
		Lower Bound	Upper Bound			
(Constant)	0.3842	-0.1091	0.8774	0.2449	1.57	0.1237
Household_Income	0.0422	0.03040	0.0542	0.0059	7.14	0.0010*
Commuting_Cost	-0.0542	-0.2076	0.0992	0.0762	-0.71	0.4802
Real_Estate _Value	-0.0094	-0.1686	0.1497	0.0790	-2.12	0.0454*
Activity_ Pattern	1.6673	-14.5474	17.8821	8.0506	2.07	0.0369*
Workplace_ Distance	-947.1180	-1373.01	-521.225	211.455	-4.48	0.0010*
R^2	0.773					
Adjust R^2	0.748					
Standard Error(SE)	0.213					
Durbin-Watson	1.40					
F-Statistic	30.74					
N	51					

Notes: [a]Dependent variable: Housing Optimality; *P < 0.05

Specifically, aside being positively significant, activity pattern variable has one of the largest coefficient estimates affecting housing optimality. The activity pattern coefficients of 1.6673 for Minna city model and 2.60 for Abuja city imply that an increase in household's activity pattern by 1km significantly increase, on the average, the household housing optimality by 1.6673 in Minna city and 2.60 in Abuja city. This empirical finding on activity pattern reinforced an earlier line of

thought in similar geographical setting by Olatubara (1998) who reported that activity pattern is a better factor of predicting residential location choice decision. One possible explanation for this positive relationship in our study would be that the activity levels of *most* households are geared towards ventures that are economically productive, socially and culturally beneficial to the households. The coefficient of the variable (Household_Income) which is a measure of individual household income is also significantly positive and contributes 0.0422 and 0.0190 to housing optimality level in Minna and Abuja city respectively. This finding indicates that higher wages are associated with higher level of housing optimality.

Table 5: Abuja city multiple regression model for housing optimality

Variable	Coefficients	95% CI		Standard Error	T-Stat	P-val
		Lower Bound	Upper Bound			
(Constant)	0.2057	-1.1391	1.5504	0.6695	0.31	0.7599
Household_Income	0.0190	0.01225	0.0258	0.0336	-1.37	0.0021*
Commuting_Cost	0.8241	-0.7083	2.3565	0.76294	1.08	0.0501*
Real_Estate _Value	-0.0646	0.0895	-0.0396	0.0124	5.65	0.0041*
Activity_ Pattern	2.60	-7.80	13.00	5.10	-5.20	0.0178*
Workplace_ Distance	-402.20	-990.80	186.40	2930.60	2.50	0.0761
R^2	0.571					
Adjust R^2	0.528					
Standard Error(SE)	0.397					
Durbin-Watson	2.26					
F-Statistic	11.60					
N	56					

Notes: [a]Dependent variable: Housing Optimality; *P < 0.05

This result is also reflective of previous research (Ball & Harloe, 2006; Cinar, 2004) that income impact significantly on individual's housing standards and overall expectation in the housing market. Though the commuting cost variable is not statistically significant in the regression model for Minna city, the negative sign of its coefficient is consistent with prior empirical evidence (van Ommeren *et al.*, 1997; van Ommeren *et al.*, 2000; Stutzer & Frey, 2004b) which depict that household utility function decreases with increase in commuting cost. The Abuja model however provides an unusual result. For example, the commuting cost is significant, but with an unexpected positive sign. This result is counter-intuitive, though this can be attributed to the diversified nature and dispersal of employment opportunities in Abuja and its urban form. The coefficient of work place distance for Minna city is significant, but negatively correlate with housing optimality. This signifies that with an increase in workplace distance by 1km housing optimality is expected to drop by approximately 947. Similarly, in Abuja, housing optimality is expected to decline by 402 with a 1km increase in distance to workplace. A tenable explanation for this result is that increase in commuting distance to work implies loss of time spent to households for leisure and other engagements, and reduces work productivity as less time is available to normal work. Our finding is also reflective of the fact that there would likely be a distance beyond which the households would not wish to locate, since optimality would have dropped far low to an unacceptable level. While our findings clearly match those of previous studies (Phe and Wakely, 2000; Guo and Bhat, 2007; Cinar, 2014) it differ considerable from that of Nechyba and Strauss (1997) study who reported a significant positive relationship between work place distance and residential location choice in New Jersey. This difference is findings perhaps might be explained by the choice of the methodology- discrete choice model- employed in the latter study.

The significant coefficient of real estate value is negative for Minna city model, implying that increase in real estate value by 1 naira significantly decrease, on the average, the housing optimality by 0.0094 in Minna city. Similarly, in Abuja city, housing optimality tends to decline by

0.0646 given a 1 naira increase in value. The implication of this finding is the recognition that real estate value represents a burden which the household has to bear in order to secure the right to an apartment of choice. Against the backdrop that most current housing optimization in both cities is a deviation from the optimal; either of two distinct scenarios is likely to play out in order for these households to attain optimal housing during their lifecycle. The first is when a rental or price upswing is accompanied or preceded by renovation, modernization and aesthetical plus functional improvements. In this case, both optimality and rental or market value would gravitate in the same direction, apparently contradicting the regression results, (but confirming parts of the regression results for Abuja). However, this gravitation would not continue *ad infinitum*, but would rather cease at a point where the property value escalation is adjudged to be unsustainable even if affordable, a trend that is observable in Minna city. The second scenario whereby optimality rises with real estate value is also potentially possible as revealed by the positive side of the 95% CI, in the two regression models. The reasons for this positive relationship are very germane to housing choice as rental value a proxy for market value is partly a reflection of neighbourhood and location qualities, and higher rental value reflects better environmental qualities. Households wishing to improve their housing-specific well-being would likely achieve their dreams by the choice and acceptance of higher rental/market values subject to limit set by optimality. When this limit is attained, the household would probably be better advised to seek alternative choice. This explains why some apartments remain vacant and unlet for quite a long time after the last tenant has vacated until a new party emerges on the scene for whom the apartment is optimal. The same apartment may be let only at lower rent, and, even then, some incentives such as renovation and refurbishing may have to be added.

5.0 Conclusions

This paper explored the contributory influence of real estate value and other pertinent variables on housing optimality in two urban cities in Nigeria. From the analyses and discussions in this paper, it is evident that our findings support the contention that multiple regression can also be employed in urban housing market to predict housing choice optimality. Secondly, the outcome of this study has shown that real estate value is a significant negative predictor of household's level of housing optimality/wellbeing in both housing markets. An important implication of this finding is that real estate value represents a burden which the household has to bear in order to secure the right to an apartment of choice. In both housing markets, households can attain an improve housing wellbeing, in the long run by either moving to their alternative house with higher market value subject to the limit set by optimality or when a rental or price upswing is accompanied or preceded by renovation, modernization and aesthetical plus functional improvements. The latter is however bound to cease at a point where the property value escalation is adjudged to be unsustainable, even if such houses are affordable.

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