REVIEW ARTICLE

Impact of Location and Dwelling Characteristics on Residential Property Prices/Values: A Critical Review of Literature

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Abstract

It is a common knowledge that dwelling characteristics and the influence of locatonal externalities are critical to the formation of residential property prices. The physical and structural attributes of dwellings such as the age of building, quality of design, size of rooms, number of rooms, number of toilets and bathrooms, quality of constructional materials and the layout plan of dwellings impact positively or negatively on house prices. Similarly, the attributes of residential location such as the proximity to place of employment, to shopping centers, markets, accessibility to public transport and sporting facilities are among major factors that determine house prices. The purpose of this paper is to undertake a critically review of empirical literature on the impact of location and dwelling characteristics on residential property values. Documentary data with regards to the study were obtained from various secondary sources and were studied and reviewed accordingly. Findings of this study revealed that various studies on the impact of location and dwelling characteristics on residential property values/prices indicated that both the location and dwelling characteristics are major determinants of residential property value. However, approaches adopted in selecting sampling size in most of the studies were not clearly defined. The suggest that appropriate methods of sample size selection adopted for a given study should be clearly defined

Keywords: *Location, Dwellings, Characteristics, Impact, Residential property value/price*

Introduction

Assessment of the values of residential houses is very complex, dynamic and challenging. It required the analysis of various attributes of housing qualities which are the bedrock of house prices determination. Residential location and dwelling attributes are among the factors that needed to be critically examined and analyzed in order to ascertain the fair market value of a given house.

Housing units are placed on location and therefore differs in terms of their surroundings, structure of the community where they are situated and their nearness to job opportunities and market places, hence, the influence of location on housing market cannot be over emphasized [1].
Uyor & Brown [2] identifies that dwellings in the same neighborhood enjoys similar neighborhood's location, economic and social characteristics. Thus, in determining the impact of housing quality attributes on house values, the attributes of the residential location must be carefully studied and analyzed.

Thorncroft [3], Poudyal et al. [4] and Aluko [1] (2011) have all asserted that residential property value depends majorly on access to those locations which support related uses, such as proximity to work place, shopping centers, distance to schools, nearness to recreational facilities, accessibility to public transport, open space, proximity to place of entertainment, place of worship, distance to CBD and other related community services.

Tom [5] also stated that localized negative externalities such as nuisance could affect house price negatively. He stressed that houses located at close distance to hazardous waste site or close to high voltage power transmission line or flood areas are liable to have a decline in value.

Anthony [6] also stressed that the value of any residential accommodation depends largely upon a great variety of the dwelling characteristics. Numerous characteristics of dwellings that affect house values have being grouped by [6] in to three broad categories. The first category of the dwelling characteristics that influences house values as he highlighted is the accommodation

and size of dwelling. The degree at which the accommodation provided satisfied the customer taste and preference determined the value to be placed on the house. Factors mostly considered in this respect include the number of bedrooms and other rooms, size and number of floors, available space among others.

The second category is the structural improvements and material used. The quality of constructional materials and the level of structural improvement made to a building may also be of great significant in the determination of housing price. Major consideration in this regards are the physical factors such as the type, style and quality of various building components. Structural improvements such as the fence wall, gate, landscape, swimming pool, gardens and other attractive improvements within the confinement of the house falls on this category. The third category is the age and condition of the dwelling. Age and condition of a dwelling are also important factor that could influence house values/prices.

The purpose of this paper is to review empirical literature on location and dwelling characteristics that affect house prices given that residential location and dwelling characteristics have being found by many researchers on housing and value, as major determinants of house prices.

This paper is structured as follows: The introductory part is followed by the methodology section. Section three is a review of empirical literature on the impact of attributes of location and dwelling characteristics on residential property prices/values. Section four discusses the paper and the final section concludes the paper.

Methodology

The research is an archival type where the outline of the study is basically a review of empirical literature on attributes of location and dwelling characteristics that influences residential property prices. Thus the methodology employed in collecting the required data was based on secondary sources of data obtained from academic journals, conference papers, articles, textbooks and the World Wide Web (cyber internet).

Empirical Literature on Location Attributes that Influences House Values

Various researchers on the field of housing quality attributes and house value study examined and analyzed the impact of the attributes of the location on house prices.

For instance, Aluko [1] conducted a study on the effects of location and neighborhood attributes on housing values in Lagos Metropolis. The purpose of the study was to analyze and determine the relative role of house location and neighborhood attributes on the determination of house prices.

The study explored both the primary and secondary sources of data in achieving its ultimate objectives. The study area was delineated in to eight sub-areas from sixteen local government areas of Lagos state domiciled within the Metropolitan city.

One thousand and five hundred questionnaires were distributed in fifty three residential areas delineated for the study targeting at 135,820 residential households. Random and systematic sampling techniques were used in selecting the respondents sampled for the study.

Both the descriptive and inferential statistics were employed in analyzing the data collected for the study. Analysis of Variance (ANOVA) and multiple regression models were all used in testing for the variance in house values at different locations and neighborhoods. Aggregate variables on attributes of location, neighborhood and dwellings were adopted as independent variables with house prices as dependent variable.

The results reported from his findings indicated a significant variation in virtually all the study variables. The results also indicated a spatial variation of location and neighborhood attributes on house rental values which was identified to be particular in within group means than between group means. The results further disclosed that location and neighborhood attributes are more significant on house value formation especially when small geographical housing units are examined.

The study did not however, disclosed the rationale for adopting a sample size of 1500 for a population of 135,820 neither does the study justified the criteria's for sample size selection highlighted by [7] and [8].

Similar study carried out earlier on the effects of attributes of location by Kiel & Zabel [9] adopted the hedonic pricing model and developed the concept of 3L which implies location, location and location to discuss the house prices.

The findings as was reported by the researchers revealed that different geographical locations have significant effects on house values. They have discovered that people pay more emphasis to wider location and neighborhood characteristics in determining house prices. The researchers submitted that location is the most significant factor that influences house prices.

Again on location, Fernandez et al. [10] carried out a study on the impact of location on house prices using the Artificial Neural Network model (ANN). The purpose of the study was to determine the extent to which location attributes and environmental factors influences house prices.

The study adopted a sample size of 1442 residential properties in the city of Valencia, Spain. A total of 43 variables including both the internal and external attributes of the houses were used. The result indicated that location has an influence on the choice of house to live and also significantly affect residential property values.

Still on location, Ivy & Ernest [11] investigated the impact of location and dwelling characteristics on rental values of residential properties in Accra Metropolitan area of Ghana. Data were collected on dwelling characteristics which includes number of bedrooms and availability of facilities and amenities within the dwellings across three locations in Accra. The three residential locations are: East legion, Osu and Chorko.

The areas selected were drawn from the low density medium and high density residential areas respectively as classified by Accra Metropolitan Assembly (AMA).

A sample size of 100 households were selected for the study with East legion having 10 households due to its size and house distribution as reported by the researchers. 59 households and 31 households for Osu and Chorko respectively.

The researchers used both structured and unstructured questionnaires which are randomly administered to only willing households on rental apartments. Direct observation and personal interviews of persons were also used as tools for data collection.

To analyze the relationship and impact that exist between variables, Two-way contingency table was used. Analysis of variance (ANOVA) technique was also employed to determine whether there is a significant mean rental differences across the three locations. Pearson's Chi- square value was computed to test the

significance of the association and Cramer's V was used to verify the strength of the association.

The results of the findings as reported indicated that the impact of the attributes of location on residential property rental values is statistically significant. The result further show a significant effects of dwelling characteristics such as number of bedrooms, availability of facilities (bathroom and toilets) as well as availability of amenities (electricity and water supply) on rental values of residential properties.

The variables used for location attributes in the study were not adequate enough to justify the impact of location on house prices. Furthermore, the approach adopted for selecting sample size for the study was a misguided approach as the approach was not clearly defined.

According to Fowler [8], sample size determination relates to the analysis plan for a study which incorporates three elements such as: the margin of error willing to be tolerated, confidence level of the margin of error and the estimate of the percentage of sample that will respond in a given way.

Some existing literatures on location and land use theory however, advocated that accessibility is an essential factor that determines residential property values. Studies that lent themselves on accessibility as a factor of location that influences house prices analyzed three strategic lines to explore the role of accessibility in the real estate market [12].

According to [10], the first group of study evaluated how the accessibility improvements emanating from investment transport affect residential property values. The researchers such as Ryan [13] and Gibbons & Machin [14] are in this group. The second group of study analyzes the relationship between accessibility improvements and residential property values using the hedonic pricing model. Determining the role of the demand for job accessibility in the real estate market was the focused of this group of study. Researchers such as, [15] and [16] belongs to this group. The third group of study dwells on examining the relative importance of accessibility as a factor that influences residential location decisions.

Housing utility function which encompasses few attributes was defined by this group. They buttress that market players choose between different alternative locations and maximize the utility derived from the multiple attributes which

reflect the available alternative choice. Theriault et al. [17] is in this group of study.

For instance, [17] appraised the significance of accessibility on house prices from the perspective of households in the city of Quebec based on travel time from resident to service areas. The researchers adopted both objective and subjective indices.

The findings of the study revealed that residential property values increases with good accessibility. The results further disclosed the statistical differences in the way accessibility is structured depending on the house profile and the purpose of the trip.

Hwang [12] also conducted a research on accessibility and house prices for Metropolitan areas of Buffalo and Seattle. The study identified accessibility to employment opportunity as major determinant to residential property values. The study revealed that accessibility to good employment opportunity increases residential property values. The study therefore stressed that accessibility is a significant determinant of housing prices.

Still on accessibility and house prices, [13] examines the relationship between values of residential properties and accessibility measured on travel time. The result from his findings suggested that accessibility is negatively associated with the residential property values. However, Franklin & Waddell [18] have argued that several studies that measured accessibility based on travel distance have established a direct relationship between accessibility and residential property values.

The findings of Oxford [19] after combining distance to multiple employment centers with distance to other regional amenities in determining house prices, proves distance to secondary employment centers to be statistically significant.

Des Rosier et al. [20] also used the travel time to shopping centers, schools, Universities, highways and CBD by employing principal components analysis (CPA) and extracted two accessibility factors that are statistically significant.

Furthermore, Day et al. [21] calculated accessibility to shops and primary schools including distance to CBD, parks transport facilities and other amenities using the accessibility measures, the study did not however,

indicate the influences of the individual variables. In a related but separate study, Ottensmann, Payton & Man [22] investigated the effects of urban location and housing prices using the hedonic technique for Indianapolis, India. The purpose of the study was to determine how residence location relative to job location affects house prices.

The study equate measures of location using both travel time and distance to the CBD, and multiple job centers was equally used in measures of accessibility to employment. The study further appraised the significance of changes in accessibility to employment.

The researchers collected data on 8,772 recorded house sales from the database of multiple listing services of the Metropolitan Indianapolis Board of Realtors (MIBOR). Data on housing prices and dwelling characteristics were obtained from MIBOR records of 1999.

The study excluded small proportion of the sales transaction in the database on the ground that they do not represent sales reflecting open market transactions while some were excluded because they could not be coded. Twelve variables from dwelling characteristics and four variables on neighborhood characteristics were adopted for the analysis. The traditional hedonic pricing function was used for the estimation. Location measures related to location of employment were analyzed and tested using two sources of employment data.

The result reported from the findings indicated that location with respect to employment is a significant predator of house prices. It is however noted that all the studies that hinges on accessibility as the main factor of location that influence residential property values used few explanatory variables which could lead to omitted variable bias.

From the foregoing literatures on the effects of the attributes of location on house prices, it is noted that the impact of location in housing market is very crucial to the determination of housing prices.

Houses that were discovered to be situated in prime areas that are accessible to places like CBD, place of employment, public transport and other related amenities, enjoys better offers compared to those houses that are located at disadvantage positions or are close to flood-prone or contaminated areas.

Impact of Dwelling Attributes on Housing Prices

Good number of research on the examination of the relationship between dwelling attributes and housing prices have being undertaken by many scholars on housing and value studies.

For example, the study of Sirmans et al. [23] examines the relationship between dwelling characteristics and house values using the hedonic pricing model and among other things found that garage, age of dwelling, number of bedrooms and other rooms, number of bathrooms, size of the house, type of house and condition of the dwelling to be part of the determinant factors that influences residential house values.

Anthony, [6] analyzed the impact of structural characteristics on residential house values in Kumasi, Ghana over six years period. The researcher adopted the quantitative approach and sources for data through secondary means from estate firms, estate agents and the land sector agencies in Kumasi, Ghana.

The empirical result of the research was based on a total of 18,652 residential property valuation data collected between the periods of 2005 to 2010. The study used dwelling and location attributes as the independent variables and house prices as the dependent variable. The survey data collected were analyzed using both the descriptive and the traditional hedonic housing price model and chow test.

The results of the findings as reported indicated that among other things number of rooms, floor, age of building, swimming pool, car park, wall fence and gate to be determinant factors of residential house prices.

A related study by Egbenta [24] examined the application of regression analysis to property valuation. The study adopted the dwelling characteristics variables such as number of bedrooms, number of floors, bathrooms, toilets, fence and gate, boy's quarters, age of dwellings, room size and neighborhood characteristics to determine the rental values of residential houses in Jos Metropolis, Nigeria.

The result of his findings show physical attributes of housing to be the major determinants of rental values of residential properties in Jos Metropolis. Ukabam [25] made similar conclusion when he analyzed the impact of development control measures on residential house prices in Lagos Mainland local government area, Nigeria.

Ukabam [26] again carried out a study on the relationship between housing quality and residential house prices in Yaba and Ebute-metta in Lagos, Ngeria.

He identified number of bathrooms, kitchen, toilets, standard of room and physical condition of dwellings to have an influence on rental values of residential properties.

The study however falls short in methodological approach. Traditional standard hedonic model which is considered most appropriate in analyzing housing prices should have being employed to statistically measure the relationship between the dwelling attributes and the house rental values.
The variables used for the study were only dwelling characteristics variables without taken in to account the effects of location and neighborhood characteristics which also were found to be major determinants of residential house value.

Earlier studies by Marco [27] and Selim [28] on the determinant of residential property values in New York city and Turkey respectively, also found dwelling characteristics such as the number of bedrooms, number of other rooms, square footage, number of bathrooms and toilets, house type, size of building and other amenities provided within the dwellings like water, pool, electricity and natural gas to have a significant effects on house rental prices.

Most recently, Oluseyi [29] investigated the critical factors that determine rental value of residential properties using three density areas of Ibadan Metropolis in Nigeria. The study explored the random sampling technique to select 624 residential houses from 3120 tenement houses available in records of estate surveying and valuation firms operating within the domains of the study areas.

Physical dwelling characteristics and locational attributes were adopted as the independent variables with house price as the dependent variable. The hedonic price function was used as an analytical tool in estimating the impact of the variables on housing prices.

The results from his findings suggested that various critical factors influence residential property rental values at various density areas. Dwelling attributes such as number of bathrooms and living rooms were found to be most significant to tenement buildings. Burglary alarm including number of bathrooms and living rooms were said to be critical to bungalow houses in the whole city

of Ibadan. For the duplexes, number of toilets was considered to be major determinant of rental values in the city.

The results also indicated that in the low density areas, attributes of location play a very prominent role on the determination of rental values of both the bungalow and the detached houses. However, in the medium density areas, number of rooms and the existence of burglary alarm were found to be key factors that determine house rental values.

Discussion

Most of the studies that dwells on accessibility as the main locational factor that influence residential property values used few explanatory variables which could lead to omitted variable bias. The variables were not adequate enough to justify the impact of location on house prices.

Findings from various researches on location and house value study revealed that houses situated in prime areas that are accessible to places like CBD, place of employment, public transport and other related amenities, enjoys better offers compared to those similar houses that are located at disadvantage positions. This is clear evidence that attributes of location in housing market is very crucial to the determination of housing prices.

Findings from various studies on the impact of dwelling characteristics on residential property value shows greater emphasis on age of dwellings, number of bedrooms, number of other rooms, square footage, number of bathrooms and toilets, house type, size of building and other amenities provided within the dwellings like water, pool,

electricity and natural gas to have a significant effects on house rental prices.

However, the approaches adopted for selecting sample size in most of the studies examined, were misguided approaches as the approaches were not clearly defined. According to Fowler [8], sample size determination relates to the analysis plan for a study which incorporates three elements such as: the margin of error willing to be tolerated, confidence level of the margin of error and the estimate of the percentage of sample that will respond in a given way.

Conclusion

In conclusion, both the location and dwelling characteristics are major factors that need to be carefully examined and analyzed by estate surveyors and valuers before ascribing value whether sales or rental price of a giving unit of a house. From the study, it is obvious that the physical and structural characteristics of a dwelling as well as the location of residential property in terms of accessibility to work place, public transportation, proximity to schools, children play ground, sporting facilities among others contribute immensely in determining residential property value. Appropriate methods of sample size selection adopted for a given study should be clearly defined in order to guide the readers.

Acknowledgement

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