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Determination of Residential Property Value of Adamu Aleiru Housing Estate, Birnin Kebbi, Kebbi State, Nigeria, Using Multiple Regression Analysis

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***Abstract*—** *For many families, owner-occupied homes are not just a place to live; they are also a source of income. They make up the majority of the assets in these families' portfolios. The study seeks to use Multiple Regression Analysis to determine the residential property value in Birnin Kebbi with emphasis on Adamu Aleiru Housing Estate. The study was adopted both the primary and secondary sources of data collection. Using the sample of 96 transactions data, when the property was made as owner occupiers in the year 2005 and 2011, MRA was used to determine the micro (structural) variables that significantly influence on residential property value. The R^2 had shown 0.936 with 343924.070 error of estimation. It means that 93.6% of the residential value could be predicted from number of rooms, fence, additional kitchen, water source, boys' quarters, security post, condition, position, and house type. It was found that among the variables include in MRA; number of rooms, fence, security post, condition, position, house type, are all significant variable in determining the residential property value in Birnin Kebbi. While Additional kitchen, water source, and boy's quarters found to be not significant in determining the residential value in Birnin Kebbi. A model was developed in the study area using the variables. Using a statistical test, the accuracy of the model was evaluated. The study was recommended that the model was accuracy to be use in the study area to improve the accuracy, objectivity and fairness of residential property in Birnin Kebbi.*

***Keywords*—** *Property, Residential Value, Mass Appraisal, Multiple Regression Analysis (MRA), Valuation.*

I. INTRODUCTION

For many families, owner-occupied homes aren't just a place to live; they're also a source of income. They make up the majority of the assets in these families' portfolios. Indeed, in most developed countries, real estate makes up the majority of private household income. As a result, the valuation of their home has a major effect on their spending and savings options. (Case et al., 2004; Selim, 2008). Since housing is one of humanity's most important needs, tangible Property has always been in high demand in developing cities. Property prices have been a big buyer consideration when making acquisition (Jim and Chen, 2006). Several studies have found that property prices are typically comprises physical and economic characteristics, location, environment, and branding, among other things (Rinchumphu, et al., 2012). These and other variables render determining the exact value using traditional methods difficult.

A valuation is a professional opinion on value based on the assumptions used to formulate it. The degree of certainty that a given valuation represents market realities as well as the property's features and potential, or that it corresponds to the price that would be achieved in an arm's length transaction on the day of valuation is a significant consideration (Kucharska-Stasiak, 2013). Uncertainty of valuation can be defined as the difference between multiple valuations of the same property conducted at the same time and for the same purpose, as well as the difference between multiple valuations of the same property conducted at different times and for different purposes.

To predict the property value, methods such as the comparison sales method, the rental method, the land and building method, and the profit method have been used traditionally. Price evidence from real estate transactions demonstrates that analyzing property data has always been difficult (Kershaw and Rossini, 1999). Potential owners, developers, investors, appraisers, tax assessors, and other real estate market stakeholders all value an accurate prediction of real property price. As a result, a prediction model must be developed that takes into account the impact of various changing factors on property value. Soft computing techniques with greater data handling capabilities could be the best option to meet this need. These methods have made it easier to investigate the complex relationship between property price and the factors that influence it (Chaphalkar and Sayali, 2013).

For Mass appraisal Valuation, MRA is the most common technique. Its primary functions include estimating, explaining, and forecasting real estate values (Chin, 2006). MRA has been used in the United States (USA) since the 1920s, and in the United Kingdom (UK) since the 1980s (Peddy, 2011; Dzurllkanian, 2008; Adair and McGreal, 1988; Greaves, 1984 and Pendleton, 1965). Other countries that have used MRA include Australia, New Zealand, Singapore, and Malaysia. Hamid and Ghazali (1991); Dzurllkanian and Rosdi (1997); Oliver (2001); and Dzurllkanian (2008) conducted research in Malaysia on MRA techniques in mass assessment.

The comparative method of valuation and the contractor's cost method of valuation are currently the most popular methods of valuation used in the study area for rating purposes. The similarity and dissimilarities between the

subject property and other similar properties in the same neighbourhood are compared using the comparison method of valuation (Kamarudin et al., 2014). The key drawbacks of this approach are a lack of comparable sales data, and if the subject properties are large, it will be difficult for valuers to deal with the analysis of all attributes while keeping in mind the heterogeneous existence of properties (Auwal et al., 2018). Despite its shortcomings, this method is still the most widely used in estimating the market value of properties (Scarrett, 2008).

The cost approach is another traditional method commonly used by valuers in Nigeria. This is known as the contractor's method or depreciated replacement cost. The method is preferred because valuers believe its estimates are more accurate than market prices (Auwal et al., 2018). The cost approach to valuation is a method based on premises that support special properties that rarely change hands in the property market. This method does not support the use of income-producing properties; however, valuers in Nigeria use it for property valuation (Amidu et al., 2008; Auwal Et al., 2018)

Due to the above, the study seeks to use Multiple Regression Analysis to determine the residential property value in Birnin Kebbi with emphasis on Adamu Aleiru Housing Estate. To achieve this aim, the below objectives was drawn;

- To identify the significant factors to be consider which influence residential property value in Birnin Kebbi.
- To develop MRA model to be used in the study area for the residential property value.

II. Literature Review

Concept of Value

The ward "Value" attempts to explain the assumptions used in determining the exchange price of a property if it were sold on the open market. The essence of the legal interest, the physical condition of the building, the nature and timing of the market, and assumptions regarding potential purchasers in that market are all examples of these assumptions (Pagourtzi et al., 2003). Market value is the cash price that willing buyers and willing sellers would agree on certain reasonable exposure of the property to the market, full information on the property's possible use, and no undue compulsion to act (Jacobus, 2006). To determine market value, some kind of comparison must be made that represents the present market and describes a subject property (Jacobus, 2006; Chin, 2006).

Concept of Real Property

Real Property can be seen as many of the interests, advantages, rights, and encumbrances that come with owning physical real estate. Real estate valuation must provide a quantitative measure of the benefits and liabilities that accrue from it (Pagourtzi et al., 2003). Property valuation, also known as real estate assessment or land valuation, is the process of determining the worth of a single or several properties using a specific method and procedure. In order to estimate the value of a subject property, valuers need comparable properties, and comparable properties are priced in the market through transactions. Property valuation necessitates assessing assets at their current market value. Property valuation is used to aid decision-making in areas such as acquisition, buying and selling, and obtaining a loan. A formal property valuation, in practice, necessitates the preparation of a written report for the subject property by valuers (Junainah, 2012).

Concept of Multiple Regression Analysis (MRA)

MRA is a statistical technique for interpreting unknown data based on existing data (Eckert, 1990). The known data (existing data) in property valuation are property characteristics and market prices, while the unknown data are property values. MRA is a method for estimating the effects of one or more independent variables on the dependent variable (Gustafson, 1985). In other words, it assesses the influence of various characteristics or the impact of independent variables (Dalgiesh and Buchart, 1998). In the case of property valuation, the MRA model's function is to quantify the contribution or impact of factors such as the main area, lot area, number of rooms, and other cholesterics of property. If data on transaction prices and characteristics are available, the model can be developed. The model can be generalized to the entire area once it has been validated and proved to be accurate.

MRA is a valuation approach that builds on the comparison method. In the United States, MRA was first used in the valuation of farm property in the 1920s (Junainah, 2012; Haas, 1992; Ezekiel, 1926). MRA, on the other hand, was first used in the United States in the 1950s and the United Kingdom in the 1980s to estimate the worth of residential properties (Junainah, 2012; Pendleton, 1965; Greaves, 1984; Adair and McGreal, 1988;). Multiple regression analysis (MRA) is a powerful tool for modelling, forecasting, and property valuation (Brooks and Tsolacos, 2010; Mustafa, 2004; Isakson, 1998; McCluskey et al., 1997; Azhari; 1987). MRA describes and evaluates the relationship between variables and other variables in general. In MRA, the variables can be categorized into dependent variables Y (Price of property) and independent variables X (characteristics of property).

In property valuation, there are several steps involved in developing a multiple regression model. The steps are as follows: I) define the sales sample; II) choose the appropriate property characteristics; III) choose the appropriate property characteristics; IV) code the property; V) create the model; VI) analyze and calibrate the regression model; and VIII) verify characteristics the regression model. The following is the general expression for an MRA equation:

$Y = b_0 + b_1X_1 + b_2X_2 + \ldots\ldots\ldots + b_nX_n$

Y = property price/market value (dependent variable), X_1, X_2, $X_3\ldots\ldots\ldots$ X_n = Independent variables; b_1, $b_2\ldots\ldots\ldots$, b_n = regression coefficients; b_0 = Constant; and n = total number of variables specified in the model.

The MRA is not without flaws. When nonlinear relationships occur between variables, one of these issues may lead to prediction errors (Yacim & Bashoff, 2015). Another problem is predictor collinearity, which can lead to errors and violates one of MRA's fundamental requirements (Manganelli, Pontrandolfi, Azzato, & Murgante, 2014).

Factors Influencing Property Values

According to McCluskey et al., (2000), Physical, locational, and market factors or structural, locational, and market factors (Lim, 2009) are the three major groups of factors that influence residential property values. These factors can essentially be macro, micro, quantitative, or qualitative in nature. Macro factors are more closely related close market factors, whereas micro factors are more closely associated to house-specific factors (Aminah, 2008).

Macro factors that influence the property values can also be on the neighborhood level, and the encompass to city, regional, national and international levels. The macro factors include; (a) Demand of the property, where the demand of the property in a certain area will affect the value of the property, population increasing or decreasing will affect the demand for housing units and obviously affect the property value. (b) Purchasing power also can increase or decrease the demand for housing units of the area, because the demand of the housing is supported by the purchasing power. (c) housing units supply either by new construction or other uses conservation in the market can also affect a property value. For example; demolition, abandonment, or conversion to other uses may decrease the supply of housing which will obviously affect the property value. (d) Inflation Rates which usually refers to rising general amounts of goods and services, when inflation get toward the point where overall public can no longer afford what they will purchase a house or anything else they need to survive it can affect a property value, because the property value will start decreasing. It can be determined by annual percentage rate that will illustrate more or less amount to be spend by taxpayers for a given basket of goods this year as compared to previous years. Inflation will be appeared in several form that include among others; consumer price index (CPI), building price index (BPI), and land price index (LPI). (e) Government policy that include used of land restrictions purposes such as scenic preservation/coastal will limit the housing supply and increase the salable land cost. (f) Production cost that include land, labor, building materials, and coordination expenditure can also affect the property value.

Micro factors that affect the property values are physical factors and location. (a) Main floor area, land area, ancillary floor area, and other housing characteristics are among the Physical factors influencing the property value. Property price is always related to its physical attributes (Chau and Chin, 2002). Physical factors characteristics is divided into three main groups; structural improvement and material used, size and accommodation, and age and repair condition. (b) Accessibility to work, amenities, transportation, neighborhood, physical attributes, environmental qualities among others are the location factors affecting property values (Hamid & Chin, 2005; Hamid, 2008).

Previous Research on MRA in Nigeria

There is only a smattering of evidence in favour of using a multiple regression analysis model to estimate house prices, especially in the context of mass appraisal in the Nigerian real estate market. Hedonic price modelling was used in previous research in Nigeria using MRA in house prices (Abidoye & Chan, 2017). Megbolugbe's research was the first (1986). Following that, studies by Arimah (1997), Babawale and Adewunmi (2011), Iroham, Oloyede, and Oluwunmi (2011), Gambo (2012), Babawale and Johnson (2012), Babawale (2013), Famuyiwa and Babawale (2014), Bello and Yacim (2014), (Liman, Sipan, Olatunji, & Afrane, 2015) and Auwal, Hamza, and Ilyasu (2018). Despite the fact that these studies used MRA in the context of hedonic price modelling, were mainly concerned with assessing the particular effect of property attributes on price rather than developing a model that could be used for mass property appraisal. Similarly, the studies were not evenly spread around Nigeria's divides, with the majority of them being performed in Lagos, Nigeria's property market (Abidoye & Chan, 2017), where only one study was done and with Kaduna North which was done by Auwal Et al., (2018) was developed a model. Since estimated coefficients vary significantly by geographical location (Sirmans et al., 2006) due to different socio-economic settings and levels of property market development, it would be incorrect to generalize the findings to other property markets (Abdulai & OwusuAnsah, 2011).

III. Methodology

For the purpose of this work, quantitative research approach was adopted, using both the primary and secondary methods of data collection. Where site inspection was used as primary source of data collection. Site inspection was conducted to know the actual changes occurs on the residential property after transaction to identifies those factors affecting residential property values. Secondary data also adopted using a transaction data of 2005 and 2011 from the Kebbi State Housing Corporation under Ministry of land and housing, especially sales price and the corresponding physical attributes of the residential properties of Adamu Aleiru Housing Estate, Birnin Kebbi of Kebbi state. The properties were built by the Kebbi State Government of Nigeria in 2005 and 2011 respectively and made the residential properties to be owner's occupiers. The properties known as Aleiru housing and Larix. The properties involved are detached and terraced houses, where most of them are low and medium density areas. Micro factors that involved houses structural attributes were considered, because Mass appraisal was localized in nature. The houses physical attributes were used in the research for housing price estimation, adopted from various researches include; transaction date, availability of security post and boy's quarters, number of rooms, fence, position, source of water supply, housing condition, and house type. Ninety-eight (98) valid residential houses used as sample size of the study. Ninety-eight residential transactions were considered enough to run for the MRA.

The residential properties data gathered was analyzed using multiple regression analysis (MRA). Where price was used as dependent variable and the residential physical attributes as independent variables. The analytical procedure to be used include; correlation analysis to find out a significant variable to be use in MRA. Correlation analysis will be done to find out the level of relationship between the variables, the variables with high correlation with the value greater than ±0.8 will be excluded from the variables (as contained in the

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general rule) so as to make the variables free from multicollinearity. Having successfully found the significant variables to be used, then the multiple regression analysis will be followed where all the variables will be entered into linear regression using "Enter" method, then followed by model develop. Then the statistical test will be carrying out to find out the accuracy of the model developed, and also multicollinearity test will be conducted through variance influence factors (VIF) to ascertain that all the variables are free from multicollinearity.

IV. RESULTS

Enter method was used in data analysis, where all the variables were included in the SPSS at once. All the MRA results was represented in table. And the value is in Naira # (Nigeria money).

V. CORRELATION ANALYSIS

Jackson (2012) explained that the correlation was used to look at the importance, strength, and direction of the inter-relationships between the independent variables, as well as to indicate the correlation between them. Correlation analysis is a preliminary step that justifies the need for more advanced analysis, such as the regression approach, to determine the variables' statistical significance. The degree of association between two sets of scores is measured by the correlation coefficient, which can range from 1.00 to +1.00.

TABLE I: Correlation Analysis

	PRICE	NOOFROOMS	FENCE	ADDITIONALKITCHEN	WATERSOURCE	BOYSQUERTERS	SECURITYPOST	CONDITION	POSITION	HOUSETYPE
PRICE	1									
NOOFROOMS	.688**	1								
FENCE	0.143	.273**	1							
ADDITIONALKITCHEN	0.044	0.098	.288**	1						
WATERSOURCE	.301**	.422**	.242*	.292**	1					
BOYSQUERTERS	0.166	.259*	.391**	.345**	.443**	1				
SECURITYPOST	0.125	.311**	.270*	.323**	.514**	.257*	1			
CONDITION	0.152	.322**	.431**	.269*	.329**	.338**	.408**	1		
POSITION	0.026	0.105	0.066	0.015	0.09	0.007	0.063	0.19	1	
HOUSETYPE	-0.686	-.381**	-0.102	-0.01	-.233*	-0.149	-0.035	-0.036	0.033	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The relationship between the correlation coefficient and the correlation coefficient can be positive or negative, as well as weak, moderate, or strong. As a rule of thumb, if the correlation coefficient is larger than ±0.8, there is a higher correlation between the variables and a multicollinearity risk occur. As a result, excluding one of the highly related variables is one technique to solve this problem.

Nine (9) variables that include; transaction date, availability of security post and boy's quarters, number of rooms, fence, location, source of water supply, housing condition, and house type were used to find the level of correlation, where one variable (transaction date) found to be highly correlated with correlation coefficient higher than 0.8, the variable was excluded and re-run again in SPSS, where the remaining 8 variables found free from multicollinearity and significant to be used. The result was presented in the above table.

VI. REGRESSION ANALYSIS

TABLE II: Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	HOUSETYPE, ADDITIONALKITCHEN, POSITION, FENCE, SECURITYPOST, BOYSQUERTERS, NOOFROOMS, CONDITION, WATERSOURCE[b]	.	Enter

a. Dependent Variable: PRICE
b. All requested Variables entered

The above table one shows the number of variables entered in the model. A total number of 9 variables are entered as independent variables, where price used as dependent variables. The variables were found significant and free from multicollinearity after the correlation analysis done for the first stage.

TABLE III: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.967[a]	0.9	0.9	343924.06960	0.9

a. Predictors: (Constant), HOUSETYPE, ADDITIONALKITCHEN, POSITION, FENCE, SECURITYPOST, BOYSQUERTERS, NOOFROOMS, CONDITION, WATERSOURCE
b. Dependent Variable: PRICE

The above table 3 shows the valuation model summary, which consisted R, $R^{2,}$ adjusted R^2 and estimation standard error. The R^2 had shown 0.936 with 343924.070 error of estimation. It means that 93.6% of the residential value could be predicted from number of rooms, fence, additional kitchen, water source, boys' quarters, security post, condition, position, and house type. It could be noted that using these independent variables only 6.4% cannot be explained. It shows that the model is strong enough (Auwal et al., 2018).

Table 4 shows the ANOVA result which produced 127.705 F- statistics value with 0.00 significant level. It indicated that the model is perfect to apply in the study area, and its statistically significant to explain the variation of dependent variables. The individual contribution of the house characteristics in the house price prediction in Aleiru Quarters was determined using regression coefficients as presented in table 5.

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TABLE IV: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	135948471328189.700	9	1510538570 3132.190	128	.000[b]
	Residual	9344417486 474.674	79	118283765 651.578		
	Total	14529288881 4664.380	88			

a. Dependent Variable: PRICE
b. Predictors: (Constant), HOUSETYPE, ADDITIONALKITCHEN, POSITION, FENCE, SECURITYPOST, BOYSQUERTERS, NOOFROOMS, CONDITION, WATERSOURCE

TABLE V: Coefficient[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3310707.212	262501.938		12.612	0
	No of rooms	822218.735	65530.52	0.437	12.547	0
	Fence	141045.297	109351.132	0.043	1.91	0.001
	Additional kitchen	70459.797	82046.42	0.028	2.437	0.001
	Water source	-50082.747	50130.935	-0.038	-0.999	0.321
	Boys querters	-99105.867	90805.932	-0.038	-2.391	0.278
	Security post	-47115.096	107756.147	-0.016	-0.859	0.663
	Condition	80300.119	105821.378	0.027	2.759	0
	Position	10625.581	51356.397	0.006	4.207	0
	House type	2033318.52	86899.442	0.739	3.399	0

a. Dependent Variable: PRICE

Above table 5 shows the B- coefficient, variables are significant if the value is below 0.05. Variables with values greater than 0.05 are considered insignificant. The B-coefficient expresses how much a dependent variable (property value) changes when each of the independent variables is changed by one unit (Pallant, 2011. Auwal et al., 2018). From the above table it can be seen that each variable has its own coefficient, example, the coefficient of the number of rooms is #822,218.735, which mean that a total number of rooms in a house can increased its value with #822,218.735. for a better house type, it increases with #2,033,318.520, while for a house with good condition it also increase the value with #80,300.119, and for the boys' quarters, security post and water source having found with the negative sign, the model shows that they have no any effect on residential property value in Birnin.

In predicting the value of residential property in Birnin Kebbi, house type significantly plays a vital role. People used to consider the type of resident. Buyers are willing to pay higher amount for a property that are in duplex than those in terraced. The coefficient found in this study are lesser than those found by Auwal et al., (2018) in Kaduna, and Liman et al., (2015) in Minna. This is because the property market in Kaduna and Minna is more matured than in Kebbi State. House type having the coefficient of 0.739 from the Better coefficient, has the greatest influence on residential value, then followed by number of rooms with 0.437. Result also show that the position of the residential property has the least influence with 0.006 beta coefficient. From the above, a model for estimating the residential property value was developed and stated below;

PRICE=*3310707.212+822218.735*NOOFROOMS+14104 5.297*FENCE+70459.797*ADDITIONALKITCHEN+50082. 747*WATERSOURCE+99105.867*BOYSQUERTERS+47115 .096*SECURITYPOST+80300.119*CONDITION+10625.581 *POSITION+2 033318.520*HOUSETYPE*

VII. Statistical Test

In order to evaluate the significant level of independent variables with the dependent variables, statistical test that include Adjusted R^2, F-test, T-Test and multicollinearity test was used. These tests were done to identify the accuracy and reliability of the application for the valuation in Kebbi.

ADJUSTED R^2

According to Brooks and Tsolacos (2010), Adjusted R^2 is an R^2 variant that accounts for the number of explanatory terms in a model. Unlike R^2, adjusted R^2 only increases if the new term improves the model more than is expected by chance. It's possible that the adjusted R^2 will be negative, but it'll always be less than or equal to R^2.

From the model summary in table 3, Adjusted R^2 achieved 0.928, indicating that the independent variable was able to achieved 92.8%. it considered a good value due to the dependent variable variation that is unable to explain was only 7.2% and the result indicates that the model is significant and accurate.

F-TEST

The F-test is used to measure the goodness of fit of a model or the overall model's accuracy. The model is not significant to explain the variation in the dependent variable if the F-value is less than the value of F in the F Table. The model is deemed to be suitable if the result of the F-value is greater than the value of F in the F Table (Brooks and Tsolacos, 2010).

From table 4 (ANOVA), the F- statistics value was achieved 127.705 with 0.00 significant level. It indicated that the model is perfect to apply in the study area, and its statistically significant to explain the variation of dependent variables.

T- TEST

The main goal of this test is to figure out how important each independent variable is in terms of contributing to the variation in the dependent variable. Independent variables with t-values larger than 2 are generally regarded significant and good (Brooks and Tsolacos, 2010; Wang, 1996). In short, T- Statistic and P–value shows the degree of significant of each independent variable in determining the dependent variables.

TABLE VI: T-Test

Variables	T-value	Value of "Sig"	Contribution
NOOFROOMS	12.55	0	Significant
FENCE	1.91	0	Significant
ADDITIONALKITCHEN	2.437	0	Significant
WATERSOURCE	-1	0.32	Not Significant
BOYSQUERTERS	-2.39	0.28	Not Significant
SECURITYPOST	-0.86	0.66	Not Significant
CONDITION	2.759	0	Significant
POSITION	4.207	0	Significant
HOUSETYPE	3.399	0	Significant

a. Dependent Variable: PRICE

From the above table, number of rooms, fence, security post, condition, position, house type, are all significant variable in determining the residential value in Birnin Kebbi. This is because all the P-value is less than 0.05, and T-statistic is above 1.76 (df1= N-1). While Security Post, water source, and boy's quarters found t not significance in determining the residential value in Birnin Kebbi.

Multicollinearity Test

Multicollinearity affects the multiple regression method. It indicates that the predictors are highly correlated, and that small changes in the data values can result in large changes in the coefficient estimates.

Low levels of collinearity indicate a low threat to model estimates, but as collinearity increases, three problems emerge: (a) weak predictor equations indicated by high standard errors of the b coefficients; (b) limits to the size of R; and (c) difficulty determining the individual importance of a predictor (Field, 2013). Below is the summary of multicollinearity of each variable.

TABLE VII: Multicollinearity Test

	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
No of rooms	0.67	1.49
Fence	0.72	1.39
Additional kitchen	0.79	1.26
Water source	0.57	1.76
Boys querters	0.68	1.48
Security post	0.64	1.58
Condition	0.66	1.51
Position	0.95	1.05
House type	0.62	1.23

The VIF (Variance Information Factors) was used to test the level of multicollinearity among the variables, from the result it shows that the model is free from multicollinearity.

CONCLUSION

This paper was based on the application of multiple regression analysis in determining the residential property value in Birnin Kebbi, Kebbi State, Nigeria. The study identified the significant factors to be consider which influence property value were identified. It also developed a model using MRA technique for residential property value in Birnin Kebbi. The model was evaluated using statistical test and was found significant and adequate in determining property value. The R^2 had shown 0.936 with 343924.070 error of estimation. It means that 93.6% of the residential value could be predicted from number of rooms, fence, additional kitchen, water source, boys' quarters, security post, condition, position, and house type. All the variables used are found significant in determining residential property value in the study area except the additional kitchen that found nonsignificant. The finding will assist the Kebbi State government in knowing the micro factors considered by the property occupiers when next they will build a property for owner's occupiers in the state. It also helps the estate surveyors and valuers in the state to find it easier to value residential properties using MRA model in order to improve the objectivity, accuracy, and efficiency of the valuation process. It will also serve as guardians to the real estate developers and marketers that are willing to develop properties to the target customers in developing a better plan by knowing the attributes considered by their target customers, in order to give them idea on the buyer's desire and their willingness to pay for residential properties. The study was limited to medium density property using MRA to determine residential property value, using the transaction sales by the state government when developed the properties as a method of owner's occupier. It is therefore recommended that the similar studies should be carry out using large data sample and covers all the urban areas in the state and using different density. Finally, to improve accuracy, objectivity, and reliability in determination of residential property in Birnin Kebbi, the model was recommended to be use.

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