Factors influencing rental variation of residential and commercial properties in Jos, Nigeria

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Abstract
Rent is the immediate return on property investment. Several Ethno-religious conflicts in Jos have caused a shift in population and businesses polarising the city. These dynamics created a loop on the best type and suitable location for property investment without an expert's advice. This study examined the factors influencing rental variation in residential and commercial properties in Jos for the period of six (6) years (2015 to 2021). The population for the study comprised rented residential and commercial property tenants as well as practicing Estate Surveying and Valuation firms in Jos, Nigeria. The purposive sampling technique was adopted in the sampling of four (4) residential neighborhoods representing one low, two medium and one high density neighborhoods with one (1) commercial properties from the two (2) Local Government Areas (LGAs) (Jos North and Jos South) that made up Jos metropolis and the systematic sampling technique was then used in the sampling of respondents for the study. A sample size of 367 tenants of both commercial and residential properties; and a total of 20 real estate firms were sampled. Rental values for the study period were collected from practicing Estate Surveyors & Valuers in Jos while structured questionnaires were administered to tenants. Descriptive and inferential statistical tools such as Mean and Multiple Regression analysis were used in analysing data. The study revealed the rental values of residential properties in Jos South performed better than that of Jos North while on the contrary, the rental values of commercial properties in Jos North performed better than that of Jos South. It also revealed that Number of Bedrooms, Number of Convenience, Electricity, Water Supply, Security, Road Network, Drainage Network, Physical Condition of Building, Sanitary Condition of the Neighbourhood and Location in relation to Recreational Facilities are all influencing factors of residential property values while for commercial properties, the variation can be attributed to Electricity, Parking Space, Security, Drainage Network, Physical Condition of the Building, Numbers of Floor and Floor Area, although, in varying degrees and these factors are useful and imperative for informed property investment decision making

Keywords: Residential Property, Commercial Property, Property investment, rental Values, Rental variation

Introduction

A large number of land developments found in any city of the globe are residential and commercial properties with developments of residential properties foremost in urban

centres (Olayiwola et al, 2006). Since the early 1990s, the demand for commercial properties has been on the increase in most urban centres across Nigeria. This is borne out of the economic recession which compelled the unemployed and public workers to further engage in trading and other economic activities to supplement their normal jobs (Iroham et al, 2014). Iroham et al (2013) view that the reaction of investors to this development has been to augment the rate of commercial property developments more than the residential properties usually in highbrow area of cities as a result of capital intensive investment of landed property, which makes it difficult for non-financially buoyant individuals to purchase or develop their own landed property (Bello et al, 2020). So, rental apartments are provided for the needed population by investors in the property market who have the financial capacity to develop these properties (Olotuah, 2015).

Rent is the immediate return on property investments and therefore used by prospective investors as a basis for property investment decisions (Chaudhari and Haktode, 2021). The rent paid for residential property use is a function of the level of satisfaction derived in the occupation of such property while the rent paid for commercial property use is a function of the profit gained in the use and occupation of such property (Chau et al, 2004). However, residential and commercial properties rents vary accordingly and systematically due to forces either internal or external to the property (Olajide, 2018; Udoekanem et al, 2014). Successive researchers such as Chau et al, (2004), Olayiwola et al, (2006), Dung-Gwon & Rikko (2009), Olujimi (2010), Aluko (2011), Udoekanem et al, (2014), Popoola et al, (2015), Musobozi et al, (2016), Abidoye and Chan (2016), Olajide (2018), Oladapo (2019) and Chaudhari and Haktode (2021) have found that the variation in the rental values commanded by properties can be attributed to exogenous factors such as number of rooms, number of conveniences, size and age of building, quality of finishing amongst others and endogenous factors such as neighbourhood quality, population overspill, nearness to school, nearness to police station amongst others variables. However, Aliyu et al, (2015) in his study found that in Jos, variation in rental values can also be attributed to intangible location attribute such as nearness to people of homogeneous religious background, tribe and values. Also, Iroham et al, (2014) and Ominola et al, (2017) opined that changes in rent habitually influence every type of property in varying degrees and that as a result of fluctuations in economic variables, these changes are more evident in commercial properties as the growth in rent is more than in residential and other types of properties. The authors further buttressed that this changes are because these commercial properties are mostly developed for commerce and as such could easily be prone to varying economic twist. It is against this backdrop that the researchers seek to closely examine the factors influencing the variation in rent commanded by residential and commercial properties in a city like Jos.

The current political, economic and social challenges facing Nigeria has greatly impacted property investment choices (Babatunde, 2021). In Jos, several ethno-religious conflicts that have taken place over the past two decades led to the destruction of properties and

caused a shift in population as well as businesses (Aliyu et al, 2015). The studies further found that these dynamics has created a stagnation or decline in the rental value of properties in some locations while a high level of demand is experienced in another location leading to eventual rapid rental increment. The work of Alityu et al, (2015) revealed that the conversion of residential uses to commercial uses in Jos North has opened up the demand for residential properties in other areas of Jos North and Jos South where perfect ethno-religious interaction could be achieved. However, factors influencing variation in properties in Jos cannot be tied to just these intangible location attributes as other factors that are tied to the property itself and the neighbourhood must be put into consideration (Popoola et al, 2015). Therefore, most of the studies have been limited to how the interplay of these factors drastically affects residential property values, hence, the need for this study to examine the factors influencing variance in the rent passing with a comparison on residential and commercial properties in Jos with a view to providing information that could enhance investment decision making by investors.

Consequently, the research objectives are to;
➢ Assess the rental level of residential and commercial properties in the study area.
➢ Analyse to factors influencing rental variation of residential and commercial properties in the study area.

Rental Variation

Existing studies conducted relating to rental variations has brought about mixed findings both locally and internationally with limited study done on the comparison of residential and commercial property rental values. The factors influencing residential and commercial properties values vary due to the different nature of use (Oyewole, 2013). These factors control the level of rent or increment in rent that a property can command. Chaudhari and Haktode (2021) opined that it is acceptable to implies that the property's rental cost is the exact rent collected on the property since there are several factors influencing rental charges. Moreso, not all properties in a specific neighbourhood command the same rent because the same inherent factors that affect one property do not affect another.

The factors influencing variation in rental values of residential properties can be property specific or market related (Ilesanmi, 2012). Adeniran (2015) assessed the performance of residential real estate properties in Ado-Ekiti, Nigeria and concluded that there is a variation in the rental and capital values of residential property investments in the study area. Also, Popoola, Jinadu, Liman, and Abd'Rasack (2015) examined environmental quality effect on rent of residential properties at the exterior zones of Minna, Nigeria and observed that rents variation in the selected sub-urban areas can be credited to ecological quality factors and other factors connecting to corporeal, lawful and locality traits of distinct edifice. The inference is that, investors invested in locality that guaranteed optimal returns over times without considering the value of the environment. Aliyu, Abdul, Kasim and Martin (2015) assessed the influence of incorporeal location attributes on the

residential properties values in Jos, Nigeria and established that intangible location attributes such as nearness to peoples of same ethno-religious characteristics are the major pointers that impact the residential properties values in the study area.

Furthermore, Abidoye and Chan (2016) in ranking the factors according to their importance deduced the location of property, neighbourhood characteristics, neighbourhood security, state of repairs of property, property age and Also, Olajide (2018) in exploring the vital determinants of residential property value on residential neighbourhood and recommends that accessibility is the most significant determinant of property value which is closely followed by neighbourhood security, building characteristics and neighbourhood features. Furthermore, Oladapo et al. (2019) and Danlami et al (2019) in their study reveals various property attributes such as number of rooms and conveniences as well as accessibility features such as nearness to schools as main features influencing location choice of tenants' residence and the rental value the property can command. of residential property.

However, in the foreign scene, researchers such as McElveen et al. (2020) specified the neighbourhood features such as renters' percentage, household income, economic boundaries, and school districts as the factors that influence the value of residential real estate. This findings is in agreement with Yuan et al (2017) and Cui et al (2018) as they concluded that neighbourhood characteristics such as Rent (Constant), Number of Bedrooms, Number of Conveniences, Electricity Supply, Water Supply, Security, Road Network, Drainage Network, Physical Condition, Sanitary Condition, Location to Market, Location to Police Station, Location to School, Location to Recreational Facility and Location to Healthcare Facility are primarily economic in nature and as such highly-priced rented occupants are more enthusiastic to occupied the property with a larger number of bedrooms, nearness to a major employment hub, garden, or educational area with high education standard. Furthermore, Levkovich et al (2016) in their study opined that changes in accessibility produces a substantial positive effect on the price of housing in neighbouring cities, but that increased noise pollution and traffic concentration levels result in a decrease in prices.

Factors Influencing Rental Variation in Commercial Properties

The commercial properties are also influenced by various factors. Udoekanem, Ighalo and Nuhu (2014) in their study found real gross domestic product (GDP) growth and vacancy rate as key rental growth determinants of office properties as they account for about 83% of the variation in office property rents in the commercial property market of Minna. Similarly, Musobozi and Lucian (2016) in Kampala city established that there is a steady increase in commercial property rents and further explained that the gross domestic product (GDP) and interest rates had a negative effect on the trend while there is a positive effect of inflation rates on the rental trend for the period under review. Also, Iroham, Oluwunmi, Simon, and Akerele (2014) established that purpose built offices have higher trends in rental value than converted offices space, which is not directly linked with residential properties. Mfam and

Kalu (2012) analysed the Return and the Risk in Direct Residential Investments and Commercial Real Estate Investments in Calabar, South Eastern used the ex-post returns from the appraisal and market data to obtain the implied risk over the study period and concluded that in terms of risk and return, the commercial sector is comparatively better than the residential sector, however, this study was limited to a geographical location with different political, culture and social life, which cannot be generalised with the case study. Again, the income growth, capital appreciation, risk adjustment return, and average return of residential and commercial properties were assessed by Oyewole (2013) and revealed that investment in retail commercial property performed better than investment in residential property with a mean annual return of 14.2% as against 11.8% implying that commercial property investment performed better than residential property investment but this study examined general commercial and residential properties.

These literatures are implying comparatively that commercial property commands higher rent than residential property. It was observed that opinions vary on the trends and various determinants of rental values in both commercial and residential properties. Also, from the above review of literatures, location and neighbourhood quality have a high positive impact on the growth of residential property rental values while real GDP growth, vacancy rate and interest rate have been observed to be key factors influencing the growth of commercial rental values. However, while it has been revealed that property related, market related and intangible location factors influence variation in property values, it is imperative to note that changes in political structure and national economic position may negate the findings from these studies at a time like this and in a city like Jos. Aside this, factors influencing variation impacts on various types of properties differently. Therefore, it is based on these facts that this research is considered necessary in order to fill the identified gaps such as study area gap, methodology gap and property types gap in previous studies as it is expected to guide residential and commercial property investments in Jos.

Methodology and Data

A comparative research design was employed for this study. Data utilized for this study are collected via the use of questionnaire. The data includes the average annual rental values of residential and commercial properties for the period 2015 - 2021 which was gotten from the registered estate surveying and valuation firms in Jos and the data on current rent paid, the physical, locational and neighbourhood characteristics of residential and commercial properties which was gotten from the residential and commercial properties tenants. The study also considered data on 2 and 3 bedroom flats for residential properties while shops and offices were selected for commercial properties as they are the most types of residential and commercial properties found in an urban area.

The population considered for the study comprises rented residential and commercial properties as well as registered practicing Estate Surveying and Valuation firms in Jos, Nigeria. The purposive sampling technique was adopted in the sampling of residential and

commercial neighborhoods and the systematic sampling technique was then used in the sampling of respondents for the study while the purposive sampling technique was adopted for the sampling of registered Estate Surveying and Valuation firms. According to Jos Metropolis Development Board (2006), there are forty-five (45) residential neighbourhoods and six (6) commercial hubs in Jos metropolis. Therefore, four (4) residential neighborhoods representing one low, two medium and one high density neighborhoods as well as one (1) commercial hub were each purposively sampled from the two (2) Local Government Areas (LGAs) (Jos North and Jos South) that made up Jos metropolis as a result of concentration of both types of properties under consideration and presented in table 1 below;

Table 1: Selected Residential Neighbourhoods and Commercial Hubs for the Study

Jos North		Jos South	
Residential Neighbourhoods		**Residential Neighbourhoods**	
Angwan Rukuba	(High Density)	Abbatoir	(High Density)
Rikkos	(Medium Density)	Dadin Kowa	(Medium Density)
Rukuba Road	(Medium Density)	Federal Low Cost Area	(Medium Density)
Tudun Wada G.R.A	(Low Density)	Rayfield	(Low Density)
Commercial Hub		**Commercial Hub**	
Terminus Market		Bukuru Market	

Source: Researcher's Random Selection (2022).

The total population of rented residential and commercial properties in the study were obtained from Jos Electricity Distribution Company (JEDC) based on the connected users of electricity as presented in table 2 and 3 below while there are 20 (twenty) registered Estate Surveying and Valuation firms in Jos as retrieved from the Nigerian Institution of Estate Surveyors and Valuers (NIESV) branch secretariat (2022).

Table 2: Total Population of Residential Properties in Selected Neighbourhoods

Neighbourhoods	Number of Residential Properties	*Rented Apartments @ 16.6%
Angwan Rukuba	9,585	1,591
Rikkos	3,350	556
Rukuba Road	7,630	1,267
Tudun Wada G.R.A	1,235	205
Abbatoir	6,980	1,158
Dadin Kowa	3,865	642
Federal Low Cost Area	3,110	516
Rayfield	3,565	592
Total	**39,320**	**6,527**

Source: Jos Electricity Distribution Company (JEDC) 2022

*16.6% of the residential properties in the neighbourhoods are rented apartments (Nigeria Bureau of Statistics

Household Demographic Survey, 2016)

Table 3: Total Population of Commercial Properties in Selected Commercial Hubs

Commercial Hubs	Number of Commercial Properties
Terminus Market	1,220
Bukuru Market	775
Total	**1,975**

Source: Jos Electricity Distribution Company (JEDC) 2022.

The sample considered for the study are residential and commercial properties in Jos and all the practicing registered Estate Surveyors and Valuers active in the Jos property market. As retrieved from the NIESV branch secretariat, there are 20 (twenty) registered Estate Surveying and Valuation firms in Jos. Also, the deduced sample size for residential and commercial properties is 367 for the study. The sample size is arrived at using the formula postulated by Smith and Strattek (2010) as cited by Kotari (2019);

$$n = \frac{Z^2 \times \delta^2 \times \left(\frac{N}{N-1}\right)}{ME^2 + \left(\frac{Z^2 \times \delta^2}{N-1}\right)}$$

Where
n = Sample size
Z = Level of precision
ME = Margin of Error at ± 5%
N = Population Size
δ = Standard Deviation

The selected residential property types comprised of 2 (two) and 3 (three) bedroom flat while the commercial property types comprises of shops and offices. Since 8 (eight) neighbourhoods are to be considered for residential properties and 2 (two) hubs for commercial properties, therefore, the questionnaires were issued to the sampled respondents in ratio 8:2 for residential and commercial properties respectively.
That is;

      Questionnaire administered on the residential tenants   = 294
      Questionnaire administered on the commercial tenants   = 73

      Therefore, 294 and 73 questionnaires were administered to residential and commercial tenants respectively out of which 223 and 73 representing 75.85% and 100% respectively were returned and used for the study as a result persuasive approach and use of indigene research assistance got the respondents confidence. Also, 20 questionnaires were administered to registered Estate Surveying and Valuation firms out of which 16

representing 80.00% were returned and used for the study as shown in table 4 and 5 below;

Table 4: Numbers of Questionnaires Administered and Retrieved

S/N	Neighbourhood	Population	Population Proportion	Questionnaires Administered	Questionnaire Retrieved	% Retrieved
1	Angwan Rukuba	1,591	0.24	71	53	74.65%
2	Rikkos	556	0.09	26	17	65.38%
3	Rukuba Road	1,267	0.19	56	48	85.71%
4	Tudun Wada G.R.A	205	0.03	9	7	77.78%
5	Abbatoir	1,158	0.18	53	46	86.79%
6	Dadin Kowa	642	0.10	29	18	62.07%
7	Federal Low Cost	516	0.08	24	16	66.67%
8	Rayfield	592	0.09	26	18	69.23%
	Total	**6,527**	**1**	**294**	**223**	**75.85%**
	Commercial Hubs					
1	Terminus Complexes	1220	0.62	45	45	100%
2	Bukuru outlets	755	0.38	28	28	100%
	Total	**1,975**	**1**	**73**	**73**	**100%**
	Grand Total	**8,502**		**367**	**296**	**80.65%**

Source: Researcher's Computation (2022).

Table 5: Numbers of Questionnaires Administered to Estate Surveyors & Valuers

Number of Estate Firms	Questionnaires Administered	Questionnaires Retrieved	% Retrieved
20	20	16	80%

Source: Researcher's Field Data (2022).

The data collected were analysed and presented using descriptive statistics such as Simple percentage, mean, standard deviation and coefficient of variation as well as Inferential statistics such as analysis of variance (ANOVA) and multiple regression. Statistical analytical tools such as Microsoft Excel as SPSS softwares were used for the study.

Results and Discussion

Rental Levels of Residential and Commercial Properties in Jos
The rental levels of residential properties comprising of both two-bedrooms and three-bedrooms flat for Jos North and Jos South were summarised by finding the average of the rental values of rents provided by Estate Surveyors and Valuation firms and presented in table 6 below.

Table 6: Rental Values of 2 & 3-Bedroom Flats in Jos North

Year	Neighbourhoods							
	Tudun Wada GRA (₦)		Rikkos (₦)		Rukuba Road (₦)		Angwan Rukuba (₦)	
	2-Bedroom Flat	3-Bedroom Flat	2-Bedroom Flat	3-Bedroom Flat	2-Bedroom Flat	3-Bedroom Flat	2-Bedroom Flat	3-Bedroom Flat
2015	313,400	387,800	122,200	155,300	147,800	195,300	111,600	138,400
2016	337,200	411,600	129,700	174,700	160,900	208,400	119,100	146,600
2017	339,800	418,100	133,200	177,100	164,100	211,700	126,500	151,200
2018	342,300	422,500	135,900	184,900	171,200	219,100	128,200	156,100
2019	380,800	501,400	150,200	220,300	200,500	303,100	130,500	180,100
2020	381,500	513,300	152,100	227,400	204,400	318,600	133,400	184,900
2021	385,200	525,400	155,800	233,100	207,100	323,200	137,800	189,100
Mean	354,314	454,300	139,871	196,114	179,429	254,200	126,729	163,771

Source: Researcher's Field Survey (2022)

Table 6 above shows the average rental values of residential properties in Jos North and found that higher rental values are generated by two and three bedrooms flat with mean score of N354,314 and 454,300 respectively in Tudun Wada GRA indicating that investment in the neighbourhood is more attractive that in Rukuba Road with mean score of N179,426 and 254,200 respectively which also seen as an attractive neighbourhoods for investment.

Table 7: Rental Values of 2 & 3-Bedroom Flats in Jos South

Year	Neighbourhoods							
	Rayfield (₦)		Federal Low Cost (₦)		Dadin Kowa (₦)		Abbatoir (₦)	
	2-Bedroom Flat	3-Bedroom Flat	2-Bedroom Flat	3-Bedroom Flat	2-Bedroom Flat	3-Bedroom Flat	2-Bedroom Flat	3-Bedroom Flat
2015	334,700	424,400	264,100	330,300	230,900	282,800	115,900	172,800
2016	359,400	443,100	279,400	355,900	245,900	293,400	116,200	179,700
2017	371,200	450,600	283,100	363,100	252,300	295,300	118,900	181,300
2018	398,400	515,100	311,800	414,600	275,200	281,600	141,300	192,600
2019	401,600	518,400	315,200	422,500	279,300	282,800	144,100	199,300
2020	405,400	528,800	325,300	431,200	292,100	293,400	153,700	205,700
2021	406,200	531,300	326,900	433,100	295,900	295,300	154,900	210,600
Mean	382,414	487,386	300,829	392,957	267,371	289,229	135,000	191,714

Source: Researcher's Field Survey (2022)

Table 7 above shows the average rental values of residential properties in Jos South and found that higher rental values are generated by two and three bedrooms flat N382,414 and 487,386 respectively in Rayfield indicating that investment in the neighbourhood is more attractive in Jos South with Federal Low Cost with mean score N300,829 and 287,229 respectively also seen as an attractive neighbourhood for investment.

Table 8: Rental Values of Shops and Offices in Terminus and Bukuru commercial properties

Year	Commercial Hub			
	Terminus Complexes (₦/m²)		Bukuru Outlets (₦/m²)	
	Shop	Offices	Shop	Offices
2015	8,900	7,400	5,100	2,800
2016	9,000	7,700	5,300	2,900
2017	9,100	8,100	5,500	3,000
2018	9,900	8,500	8,300	5,200
2019	15,100	13,200	8,800	5,600
2020	17,800	14,900	9,600	6,400
2021	18,100	15,100	10,100	6,500
Mean	**12,557**	**10,700**	**7,529**	**4,629**

Source: Researcher's Field Survey (2022)

Table 8 above shows the average rental values of commercial properties in Jos North (Terminus complexes) and Jos South (Bukuru outlets) and found that higher rental value with mean of N12,557 and N10,700 are generated shops and offices respectively in Terminus complexes of Jos North LGA while it also revealed that shop properties commands higher rental value than office properties. The implication of this is that Terminus complexes in Jos North remains the most attractive hub for commercial property investment in Jos as it has the highest rent/m² for both shops and offices.

Factors Responsible for Rental Variation of Residential and Commercial Properties
The data utilised in analysing the factors responsible for the variation in the rent commanded by residential and commercial properties are collected from the occupiers of residential and commercial properties in the study area.

Table 9: Summary of Regression Model for the Factors Responsible for Rental Variation of Residential Properties in Jos

S/N	Model	R =.966ᵃ R²=0.934 Adjusted R²= 0.930				
		Un-standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Rent (Constant)	-405555.392	19076.487		-21.259	.000
2	Number of Bedrooms	46179.130	4907.442	.213	9.410	.000
3	Number of Conveniences	8504.310	2556.486	.078	3.327	.001
4	Electricity Supply	111884.395	8114.911	.425	14.157	.000
5	Water Supply	11342.638	2922.059	.084	3.882	.000
6	Security	11553.078	3617.878	.094	3.193	.002
7	Road Network	9364.244	3211.943	.086	2.915	.004
8	Drainage Network	15632.367	3694.928	.128	4.231	.000
9	Physical Condition	11160.172	3698.783	.091	3.017	.003
10	Sanitary Condition	12921.434	3615.249	.106	3.574	.000
11	Location to Market	335.791	3054.932	.002	.110	.913
12	Location to Police Station	-44.789	3318.408	.000	-.013	.989
13	Location to School	-200.682	3200.584	-.001	-.063	.950
14	Location to Recreational Facility	12579.725	3330.729	.094	3.777	.000
15	Location to Healthcare Facility	3352.389	3256.176	.022	1.030	.304

Source: Researcher's Analysis of Field Data (2022)

Table 9 above shows the summary of the regression model in residential properties revealed a multiple correlation co-efficient denoted by (R) of 0.966 which implies that a good level of prediction of rent. The coefficient of determinant denoted by (R^2) has a value of 0.934 implying that the identified factors account for 93.4% of the variance in rent in Jos. Un-standardized coefficient B shows how much the rent will vary with change in a factor provided all other factors remain constant. For example, the un-standardized coefficient of Number of Conveniences is ₦8,504.31. This implies that a unit increase in Number of Convenience will increase the rent of such property by ₦8,504.31 provided that all other factors remain constant. The Standard Error however, indicates the variability or level of dispersion of the predicted rent by a factor. Using the previous example, the predicted rent of one unit increase in number of conveniences will be ₦8,504.31 ±₦2,556.49. It revealed that Number of Bedrooms, Number of Convenience, Electricity, Water Supply, Security, Road Network, Drainage Network, Physical Condition of Building, Sanitary Condition of the Neighbourhood and Location in relation to Recreational Facilities are all statistically significant in influencing the rental value of residential properties in Jos with $F_{(14, 208)}$, $P < 0.05$ and $R^2 = 0.934$. This implies that with all these facilities factors residents willing to pay higher rental value due to the benefits in form of convenience, high social

network, connection leverage and standard of living being enjoyed. In addition, investors should look at related locational characteristics factors when considering investment decisions.

Table 10: Summary of Regression Model for the Factors Responsible for Rental Variation of Commercial properties in Jos

		R =0.962[a]	R^2 =0.926	Adjusted R^2= 0.915		
S/N	Model	Un standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-212544.509	36798.628		-5.776	.000
2	Electricity Supply	29117.978	7587.388	.180	3.838	.000
3	Parking Spaces	16285.191	4734.393	.136	3.440	.001
4	Security	19716.787	5354.590	.140	3.682	.000
5	Road Network	2348.286	4949.243	.018	.474	.637
6	Drainage Network	-19104.136	4197.617	-.190	-4.551	.000
7	Physical Condition	21587.886	5372.822	.156	4.018	.000
8	Sanitary Condition	4580.556	4659.797	.045	.983	.329
9	Number of Floor	19265.418	5980.664	.129	3.221	.002
10	Floor Area	4764.409	343.104	.592	13.886	.000

Source: Researcher's Analysis of Field Data (2022)

Table 10 above shows the summary of the regression model in commercial properties revealed a multiple correlation co-efficient denoted by (R) of 0.962 implying a good level of prediction of rent. The coefficient of determinant denoted by (R^2) as shown in the table has a value of 0.926 implying that the variables account for 92.6% of the variation in rent. It was seen that Electricity, Parking Space, Security, Drainage Network, Physical Condition of the Building, Number of Floor and Floor Area are statistically significant in determining rent of commercial properties in Jos with F $(9, 72)$, P <0.05 and $R^2 = 0.926$. This can be deduced from the standard of commercial activities, sophistication of customers' base, complementarity of business and competitive advantage of the residents that influence rent payment in study area.

Conclusion

The study examined the factors influencing rental variation in residential and commercial properties in Jos for the period of six (6) years (2015 to 2021), the findings were as follow; Rental value of residential properties performs better in Jos South while that of commercial properties performs better in Jos North. Also, the factors such as Number of Bedrooms, Number of Convenience, Electricity, Water Supply, Security, Road Network, Drainage Network, Physical Condition of Building, Sanitary Condition of the Neighbourhood and Location in relation to Recreational Facilities are all statistically significant in influencing rental value of residential properties in Jos, F $(14, 208)$, P <0.05 and $R^2 = 0.934$. In addition,

Electricity, Parking Space, Security, Drainage Network, Physical Condition of the Building, Number of Floor and Floor Area as factors are statistically significant in predicting rent of commercial properties in Jos, F (9, 72), P <0.05 and R^2 = 0.926. In conclusion, residential properties in Jos South commanded higher rents than their counterparts in Jos North. On the contrary, commercial properties in Jos North perform better in terms of rental generation than the similar ones in Jos south. The variation in rental value of residential properties has been found to be as a result of Number of Bedrooms, Number of Convenience, Electricity, Water Supply, Security, Road Network, Drainage Network, Physical Condition of Building, Sanitary Condition of the Neighbourhood and Location in relation to Recreational Facilities while for commercial properties, the variation can be attributed to Electricity, Parking Space, Security, Drainage Network, Physical Condition of the Building, Numbers of Floor and Floor Area. This finding creates an understanding that there are various factors influencing rental variation in properties although in varying degrees and these factors are useful and imperative for informed property investment decision making.

The study therefore recommended that potential investors considering investments in commercial and or residential properties in Jos should consider Jos South for residential property investment as it commands more attractive rents and Jos North for commercial property investment as it command a higher rent. Also, diversification of investment portfolio in residential or commercial properties in Jos are advised to consider investing in neighbourhoods or hubs with related locational characteristics in terms of the various factors affecting the rental value of properties. Lastly, the effect of macro-economic factors on the variation of rental values in Jos was not considered for the study. Hence, it is recommended for further researchers to put it into consideration.

References

Adeniran, A. A., (2015). Performance evaluation of residential real estate properties in Ado Ekiti. *International Journal of Management and Commerce Innovations.* 3 (1): 569-578.

Aliyu A. A., Abdul A. A., Kasim R. and Martin D. (2015). Research framework development on the effect of intangible location attributes on the values of residential properties in Jos, Nigeria. *Developing Country Studies* 5 (16): 1-25.

Aluko, O. (2011). The effects of location and neighbourhood attributes on housing values in metropolitan Lagos. *Journal of Geography and Regional Planning.* 4 (16): 767-775.

Anthony, O. (2012). Examination of the determinants of housing values in urban Ghana and implications for policy makers. Paper presented at the *African Real Estate Society Conference in Accra, Ghana From 24-27 October. Foundation for Africa Real Estate Research.*

Babatunde, I. O. (2003). *Modern Techniques of Property Valuation*. Jitoset Publisher Ltd.

Bello, N.A, Adepoju, S.A. and Durosinmi, W.A. (2020). Factors influencing rental and capital values of residential investment property in Abuja, Nigeria. *INTREST – International Journal of Real Estate Studies,*. 4 (1): 102-109

Chau, K. W., Wong, S. K., & Yiu, C.Y. (2004). The value of the provision of a balcony in apartments in Hong Kong, *Property Management*, 22 (3): 250-264.

Chaudhari, H.A. and Haktode, P.I. (2021). A Comparative analysis of rental yields variation in residential and commercial properties in Nasik City. *International Research Journal of Engineering and Technology (IRJET)*. 8 (7): 2543-2549.

Cui, N., Gu, H., Shen, T. and Feng, C. (2018). The impact of micro-level influencing factors on home value: a housing price-rent comparison. *Sustainability*, 10: 4343; 2-23.

Dabara D. I, Omotosho L. K, Anthony A. I. & Akinyemi A. P. (2016). Analysis of the relationship of infrastructural facilities in the determination of rental values of residential properties in Osun, Nigeria. *International Journal of Business and Management Studies*. 05 (1): 87–96.

Danlami, I.M., Ibrahim, W.R., Saidu, U.A. and Babagana, B. (2019). Assessment of the factors affecting rental values of residential property investment in Dutse Kura Area in Minna, Niger State. *International Journal of Environmental Design and Construction Management*, 17 (4): 229-240.

Dung-Gwom, J. Y., and Rikko, L. S. (2009). Urban Violence and emerging land and housing markets in Jos, Nigeria. *ISA Housing Conference*, 1-18. Glasgow.

Ilesami, A. O. (2012). Housing, neighbourhood quality and quality of life in public housing in Lagos, Nigeria. *International Journal for Housing Science*, 36 (4): 231- 240.

Iroham, C. O., Oluwunmi, A. O., Simon, R. F. and Akerele, B. A. (2013). Assessing the trend in rental values of commercial properties in commercial hub of Akure. *International Journal of Sustainable land use and urban planning.* 1(2): 32-45.

Iroham, C. O., Oluwunmi, A. O., Simon, R. F. & Akerele, B. A. (2014). Assessing the trend in rental values of commercial properties along oyemekun road, akure, Nigeria: *Covenant Journal of Research in the Built Environment.* 1(1): 13-37.

Jos Metropolitan Development Board (2006). Development Control Standards and Regulations for Development in the Jos- Bukuru Metropolis Area, Town Planning, Jos, Plateau State, Nigeria.

Kothari, C.R. (2019) Research Methodology: Methods and Techniques. 4th Edition, *New Age International Publishers*, New Delhi.

Levkovich, O., Rouwendal, J and Marwijk, R.V. (2016). The effects of highway development on housing prices. *Transportation*, 43: 379–405.

McElveen, M. A., Brown, B. E. and Gibbons, C. M. (2020). Highway noise and elevation effects on nearby home prices: spatial econometrics using LIDAR-derived data. *Real Estate Finance*, 37 (1): 3-13.

Mfam, C. E and Kalu, I. U. (2012). Analysis of return and risk in direct residential and commercial real estate investments in Calabar, South Eastern Nigeria. *Journal of Science, Engineering and Technology.* 1(1): 128-133.

Musobozi, M.A. & Lucian, C. (2016). Examination of rental trend of commercial properties in kampala city: a case study of Nakasero Area. *Global Journal of Finance and Management. School of Real Estate Studies (SRES).* 8(1), 65-73.

National Bureau of Statistics (NBS). (2016). Nigeria-General Housing Survey-Panel Wave (Post Planting) 2015-2016, Third Round. Nigeria. Retrieved From: http://www.nigerianstat.gov.ng/nada/index.php (Retrieved on 4th July 2022)

Oladapo, R. A., Ojo, B., Ayoola, A. B., and Kemiki, O. A. (2019). Factors influencing tenants' choice of location of residence in Bosso Local Municipality, Minna, Nigeria. *Journal of African Real Estate Research*, 4 (1): 23-41.

Olajide, S. O. (2018). Determinants of residential property values with special reference to residential neighbourhood crime in south-western Nigeria. *Journal of the Nigerian Institution of Estate Surveyors and Valuers*, 41(1): 18-32.

Olayiwola, L. M., Adeleye, O. and Oduwaye, A. O. (2006). Spatial variation in residential land value determinants in Lagos, Nigeria. *Paper presented at the 5th FIG Regional Conference*. Accra, Ghana. March 8-11, 2006.

Olujimi, J. A. B. (2010). Analysis of the relationship of infrastructural facilities in the determination of rental values of residential properties in Akure, Nigeria. *Arts and Social Sciences Journal*, 2010: ASSJ-10.

Omilol, A. O. and Nassarawa, M. A. (2017). Effects of locational infrastructural facilities on commercial property value in Sokoto, Nigeria. *International Journal of Advanced Research and Publications* 1(5): 114-118.

Osaretin, I. S. (2011). Determinants of residential property value in nigeria. a neural network approach. *International Multidisciplinary Journal, Ethiopia* 5 (5): 152-168

Oyebanji, A. O. (2003). *Principles of Land Use Economics*. Centre for Environmental Planning Development and Management. Lagos

Oyewole, M. O. (2013). A Comparative analysis of residential and retail commercial property investments performance in Ilorin, Nigeria. *Journal of Economics and Sustainable Development,* 4 (3): 199-208.

Popoola, N. I., Jinadu, M. A., Liman, H. S., and Abd'Rasack, N. T. A. (2015). Effect of environmental quality on property rental values in peri-urban neighbourhoods of Minna, Nigeria. *ATBU Journal of Environmental Technology,* 8(2): 42-51.

Udoekanem, N. B., Ighalo, J. I, & Nuhu, M. B. (2014). Determinants of commercial property rental growth in Minna, Nigeria. *EUL Journal of Social Sciences,* 1: 60-75.

Udoekanem, N. B., Ighalo, J. I., Sanusi, Y. A., Nuhu, M. B. (2015). Office rental determinants in Wuse commercial District of Abuja, Nigeria. *University of Mauritius Research Journal,* 21: 1-26.

Yuan, J., Zheng, X., You, J. and Skibniewsk, M.J. (2017). Identifying critical factors influencing the rents of public rental housing delivery by PPPs: the case of Nanjing. *Sustainability,* 9(3): 345.