

## **Trends in Commercial Property Values in an Emerging Real Estate Market: A Case Study of Uyo, Akwa Ibom State, Nigeria<sup>1</sup>**

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### **ABSTRACT**

The study aimed at examining the trends in commercial property's rental value, capital value and returns from 2011 to 2020 in Uyo metropolis, Nigeria with a view to providing information for investment decision making. Questionnaire survey was conducted to collect data on rental and capital values from investments in commercial properties in Uyo metropolis. The data were collected from Principal Partners/branch managers of Estate Surveying and Valuation Firms in the study area. About 103 Estate Surveying and Valuation firms were sampled in Uyo with an average of 2,163 commercial properties in their management portfolios (average of 21 commercial properties in each management portfolio). A total enumeration of the 103 firms was conducted using structured questionnaire. However, only 74 questionnaires were completed and returned for analysis (representing about 72% response rate). Both descriptive and inferential statistics as well as appraisal techniques were used in analysis of the data obtained, hence the use of frequencies; percentages; income, capital and total returns formulae; weighted mean and polynomial trend analysis. The study found that there was a steady and continuous increase in both the rental and capital values of the selected property types throughout the period of the study. This was depicted by the trendline generated from data obtained from the field for office rental values, shop rental values, office capital values and shop capital values. The study also revealed that investment in shops in Uyo is riskier (with a standard deviation value of 12.18%) than investment in office properties (with a standard deviation value of 2.39%). The income, capital and total returns values

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indicated positive returns values for both office and shop properties throughout the study period. This study was necessary because of the dynamic nature of emerging property markets of developing nations such as Nigeria. Investors may wish to evaluate the trends of returns of commercial real estate investments in order to serve as a guide for investment decision making. This study is unique as it gathered historical data on commercial property investments and made future forecast or predictions of possible investment behaviour of returns values in an emerging property market, such as the case of Uyo, which could serve as a guide to property investors in making investment decisions.

*Keywords:* Emerging real estate market, investment, property values, returns, trends, Uyo.

## **1.0 Introduction**

Every prudent investor would wish to evaluate the trends of returns of commercial real estate investments and its overall performance in order to serve as a guide for informed decision making. Dabara (2015) posited that real estate trend is used to describe any pattern in the general direction of real estate returns. The pattern is said by the author to involve facts and series covering a specified period of time causing a statistically noticeable pattern of change. These changes in real estate returns remain an important factor for intending commercial real estate investors when making investment decisions. Fatoki *et al* (2010) noted that the evaluation of the performance of investment asset classes over a period of time should be the primary thing done before the investment to avoid any loss. Such performance evaluation shows clearly the past performance of such asset and the possible forecast or future performance which will aid in the identification of assets that perform better from various alternatives.

In order to provide vital investment information to enable investors channel their funds to viable and profitable investment in an emerging property market, this study aimed at determining the trends of returns of shops and offices in Uyo metropolis from 2010 to 2020, with a view to developing models for a forecast of possible investment behaviour of capital and rental values in an emerging property market in the study area. To achieve the stated aim, the following objectives were set:

- (i) to ascertain the returns of shops and offices in the study area.
- (ii) to determine the risk of investment in shops and offices in the study area.
- (iii) To examine the trends of investment in shops and offices in the study area.

## 2.0 Literature Review

Woods (2007) worked on the impacts of commercial property market on the stability of the Irish financial system, he observed that over the period of 2003 to 2006, there was a large increase in capital values in the Irish commercial property market without a correspondingly large increase in rents. As a result, the trend in income yields on all types of commercial property reached very low levels in 2006. This revealed that within the period the capital values of the commercial properties increased with time, while the returns decreased with time in Ireland.

Mueller (1999) asserted that real estate trend is a term used to describe any pattern or change in the general direction of real estate returns. The author further posited that this pattern must be based on two factors which are: fact and a series covering a specified period of time causing a statistically noticeable pattern of change. Changes in real estate returns are an important factor for investor when making investment decisions (Ankeli *et al* (2013)). It is apparent that risk-averse investors will only seek to invest on assets with robust chronological positive returns which pose great potentials for positive flow of future stream of returns (Ankeli *et al* 2016; Dabara, 2015). Hence, the examination of the historical trends and predictive trends of such investment assets are imperious before prudent investors proceed to invest in such assets.

Awa *et al* (2020) carried out a research on Real Estate Performance in South-East Nigeria to analyse the trend in residential and commercial real estate investment performances in South-East Nigeria with a view to generating a forecasting model for future rents and capital values of different types of properties in the study area. Survey method was used in carrying out the study. Questionnaires were used to collect the annual rents and capital values data; regression analysis model was used to determine the trend characteristics of the property rents, capital values and returns as well as to generate the forecasting model. The results showed that the rents and the capital values of the properties increased significantly with time having P-values less than 0.05.

Dabara et, al. (2014) carried out a research by comparatively analysing the risk-return characteristics of commercial real estate investments in Osogbo, Nigeria. Data from 2002 to 2014 were gathered and analysed by the authors using trend analysis and holding period formulae. Findings from the study revealed that the rental and capital values as well as the income, capital and holding period returns obtained from investments in shop and office property types in Osogbo metropolis kept increasing over the study period. Dabara (2015) researched on a study which presented the trends in residential properties in Gombe, Nigeria. The author used both trend analysis and a regression model in analysis of data used for the study. The study collected data from Estate Firms in the study area from 2002 to 2014. The study found out that there was a consistent increase in the rental, capital and return values of residential properties in the study area within the study period. From the literature reviewed, the researchers observed that there are

varying patterns in the trend of rental and capital values in different geographical areas. This elicited the interest of the researchers towards this direction.

### **3.0 Study Area**

Uyo Local Government lies between latitude  $7^{\circ} 47'$  and  $8^{\circ} 3'$  North and between longitude  $10^{\circ} 52'$  and  $5^{\circ} 07'$  East veering an area of about 914 square kilometers. The city is bounded in the North by Itu, in the East by Uruan in the west by Abak and in the south by Nsit Ibom, Ibesikpo Asutan and Etinan Local Government Area of Akwa Ibom State. Uyo is a home of more than 429, 900 people (National Population Census, 2017). The sub-equatorial south climatic condition of the area affords it a mean annual rainfall of 2480mm and mean annual temperature of  $27^{\circ}\text{C}$ . The town has two dominant land forms namely; the ravine on the North Eastern part of the town that form a tributary of Ikpa river, and water log depression on the southern part of the town is within the low end of Cross River basin. The local government is endowed with abundant mineral and forest resources among which are gravel, silica, sand, clay and timber. Agricultural produce include cassava, yam, vegetable and plantain.

Higher Educational institutions found in the town are University of Uyo, Uyo City Polytechnic, School of Nursing and Midwifery etc. the health institutions are University of Uyo Teaching Hospital (UUTH), St. Luke Hospital Anua. The city can be accessed by road via the Highway such as the Abak road, Itu road, Aka road etc. Nearby airport is Akwa Ibom International Airport. Uyo has intensive network of divided highways such as Ibrahim Babangida Way, Atiku Abubakar Way, Edet Akpan Avenue and Four-Lane Super Highway which is currently the widest road in Uyo Urban. Flyovers are also constructed to ease traffic.

### **4.0 Methodology**

Primary data required for this study was obtained through Survey method by the use of questionnaire. The questionnaire was designed in such a way as to draw pieces of information on the average capital and rental values of selected office and shop properties (per square meter) along Oron Road, Ikot Ekpene Road, Aka Road, Wellington Basseway and Olusegun Obasanjo Way of Uyo metropolis between 2011 and 2020. The capital and rental values of shop and office properties were collected from partners/branch managers who are registered Estate Surveyors and Valuers, through a total enumeration survey of all the 103 Estate Surveying and Valuation Firms in Uyo metropolis (this is because the Estate Surveyors and Valuers are the only professionals in Nigeria that are empowered by the law i.e Decree No 24 of 1975 to determine the value of properties and their interest). The sample size was considered adequate by the researchers because it's the aggregate averages of all the respondents' responses per square meter that was used for analysis in this study. The 103 Estate Surveying and Valuation Firms in Uyo had an average of

2,163 commercial properties in their portfolios (making it an average of 21 properties in each management portfolio). A total enumeration of the 103 firms was conducted using structured questionnaire; however, only 74 questionnaires were completed and returned for analysis (representing 72% response rate). Descriptive statistics was used in analysis of the data obtained, hence the use of frequencies; percentages; income, capital and total returns formulae; weighted mean; standard deviation and trend analysis.

The total return is expressed as

$$TR = \frac{CV_t - CV_{t-1} + NI_t}{CV_{t-1}} \dots\dots(Eqn 1)$$

Where

**TR** = Total return

**CV<sub>t</sub>** = Capital value of commercial property at the beginning

**CV<sub>t-1</sub>** = Capital value of commercial property at the end

**NI<sub>t</sub>** = Income of commercial property received during the holding period

Furthermore, the researcher analysed the basic characteristics of rental and capital values as well as investment returns from office spaces and shops in the study area. Hence the researcher used the following analytical tools:

Second, the risk characteristics of the selected residential property investments were also calculated. Standard deviation was used as a measure of the volatility (risk). The riskier a property's return is, the greater the standard deviation. The property risk for each of the selected assets was calculated using Eqn 2.

The property risk is expressed as:

$$Risk = \frac{\sum(xi - \bar{\alpha})}{\sqrt{N}} \dots\dots Eqn 2$$

Where:

$x_i$  = the asset periodic returns,

$\bar{\alpha}$  = the mean return and

N = the number of observations

**Arithmetic Mean:** The arithmetic mean of the returns obtained from office spaces and shops in the study area were used to determine the mean return values of the property types in question in order to ascertain their return profiles as well as to compare the returns obtained from the two property types in the study area.

**Trend Analysis:** Trendlines were used to graphically display trends in the data sets (rental, capital and returns) used for this study to help analyze problem of future predictions. Also, the moving average of the trendline was used to smooth out fluctuations in the data and show the pattern or trend more clearly. The R<sup>2</sup> value was used to determine the reliability of the trend and the accuracy of the forecast or predictions made. A trendline is said to be most accurate when its R-Squared value is at or near the value of One (Dabara and Oyewole, 2015). On this note, polynomial regression equations were generated for prediction of future rental, capital and returns values. These are the second degree parabolic equations that best fits the points on the chart.

The equation is in the form:

$$y = a + bx + cx^2 \quad \text{.....(Eqn 3)}$$

where:

y is the dependent variable (rental, capital or returns values as the case may be)

a is y-axis intercept of the curve,

b is the slope of the curve at the origin,

x is the dependent variable (representing year in this case); and

c is the rate of change in the slope, which equals the change in the y value divided by the change in the x value.

## 5.0 Data Analysis and Presentation

Data on the rental and capital values of the office and shop properties in Uyo metropolis for the period between 2011 and 2020 were obtained from the records of the Estate Surveying and Valuation Firms in the study area. The data was collected from the Principal Partners as well as Managers of the Firms with the use of structured questionnaire. The respondents' profile was presented in Table 1 to validate the reliability of the data obtained for the study.

**Table 1: Respondents' profile**

Profile	Item	Frequency	Percentage
Position Held in the Firm	Principal Partner	68	91.89
	Associate Partner	4	5.41
	Branch Manager	2	2.70
	<b>Total</b>	<b>74</b>	<b>100</b>
	Doctor of Philosophy (Ph.D)	4	5.41

Academic Qualification	Masters of Science (M.Sc)	8	10.81
	Bachelor of Science (B. Sc.)	60	81.08
	Higher National Diploma (HND)	2	2.70
	<b>Total</b>	<b>74</b>	<b>100</b>
Professional Qualification	Fellow (FNIVS)	5	6.76
	Associate (ANIVS)	68	91.89
	Probationer	1	1.35
	<b>Total</b>	<b>74</b>	<b>100</b>
Years of professional practice	Above 20 years	10	13.51
	15 – 19 years	12	16.22
	10 – 14 years	37	50.00
	5 – 9 years	11	14.86
	1 – 4 years	4	5.41
	<b>Total</b>	<b>74</b>	<b>100</b>

Table 1 presented the profile of the respondents who responded by supplying the data on capital and rental values in terms of their position in the Estate Firm, professional qualification, educational qualification and years of professional practice as Estate Surveyors and Valuers. This was carried out to examine the reliability and validity of the data gathered for this study. It was found out that 81.08% of the respondents had Bachelor of Science degree, 10.81% had their Masters of Science degree in Estate Management and Valuation, while about 5.41% and 2.70% had their Doctor of Philosophy and Higher National Diploma respectively. Having many Estate Surveyors under the Bachelor of Science category may not be unconnected with the fact that Estate Management and Valuation is a lucrative profession, thus graduates tend to practise after their First degree. With respect to the position of the respondents, the Principal Partners formed the major part of the respondents with 91.89%, while the Associate Partners and Branch Managers formed 5.41% and 2.70% of the respondents. It was observed that all the respondents held high positions in their firms which provide more credibility to the validity and reliability of the data obtained. Moreover, the respondents for this study were in different cadre of professional membership of the Nigerian Institution of Estate Surveyors and Valuers (NIESV). Their distribution showed that Fellows (FNIVS) and Probationers formed only 6.76% and 1.35% of the respondents, while the Associates (ANIVS) formed 91.89% of the respondents. This implies that all the respondents are professionally qualified to respond adequately to the questionnaire. Table 1 also shows that 50% of the respondents have been in practice between 10-14 years, while about 29.73% and 20.27% of the respondents have been in practice above 15 years and below 10 years respectively. Most of the respondents have professional experience for more than 10 years. This suggests that they have enough practical experience and exposure to supply the necessary data needed for the study. On this note, it can be said that respondents were found professionally and academically fit to supply valid, credible and reliable data for this study.

The data gathered was presented and analysed in the subsequent tables. Table 2 presented the average rental and capital values (per 38.88m<sup>2</sup>) of office properties in prime locations in the study area (comprising Ikot Ekpene Road, Aka Road, Olusegun Obasanjo Way, Oron Road and Wellington Bassey Way).

**Table 2: Average Rental Value, Capital Values and returns (per 38.88m<sup>2</sup>) of Office properties in Uyo**

Year	Capital Value	Rental Value	Rate of Return
2010	₦ 8,000,000.00	₦ 400,000	-----
2011	₦ 8,584,000.00	₦ 400,000	12.30
2012	₦ 9,322,840.00	₦ 420,000	13.50
2013	₦ 10,151,168.28	₦ 420,000	13.39
2014	₦ 11,109,135.32	₦ 450,000	13.87
2015	₦ 12,938,729.89	₦ 450,000	20.52
2016	₦ 14,317,433.47	₦ 500,000	14.52
2017	₦ 16,103,927.60	₦ 500,000	15.97
2018	₦ 17,874,503.57	₦ 550,000	14.41
2019	₦ 20,302,395.86	₦ 550,000	16.66
2020	₦ 23,143,651.96	₦ 600,000	16.95

**Source: Researchers' analysis, 2021**

The rental and capital values of office properties in Table 2 were arrived at by calculating for each year respectively, the aggregate total averages of all the responses from the respondents in the study area. Table 2 showed that there is a gradual but consistent increase in the rental and capital values of offices from 2011 to 2020. The rental value and capital value of 2010 were included to enable the researchers derive the 2011 returns with the use of *Eqn 1*. The consistent increase in the rental and capital values may be due to the locational characteristics and the yearly inflation prevalent in the study area. This is congruent with the findings of earlier studies in Nigeria by Odu (2011), Ogunba *et al* (2013), Dabara and Oyewole (2015) and Awa *et al* (2020).

Table 3 below presented the average rental and capital values (per 38.88m<sup>2</sup>) of office properties in prime locations in the study area (comprising Ikot Ekpene Road, Aka Road, Olusegun Obasanjo Way, Oron Road and Wellington Bassey Way).



**Table 3: Average Rental Value, Capital Values and returns (per 38.88m<sup>2</sup>) of Shop properties in Uyo**

Year	Capital Value	Rental Value	Rate of Returns
2010	₦ 6,000,000.00	₦ 150,000	-
2011	₦ 6,387,000.00	₦ 150,000	8.95
2012	₦ 6,704,328.10	₦ 170,000	7.63
2013	₦ 9,016,270.36	₦ 170,000	37.02
2014	₦ 9,648,472.11	₦ 100,000	9.23
2015	₦ 10,132,548.79	₦ 100,000	7.09
2016	₦ 13,298,230.99	₦ 150,000	33.71
2017	₦ 14,026,980.79	₦ 150,000	7.36
2018	₦ 15,121,262.68	₦ 300,000	9.94
2019	₦ 19,150,480.19	₦ 300,000	28.63
2020	₦ 20,340,178.80	₦ 350,000	8.04

Source: Researchers’ analysis, 2021

In the same vein, Table 3 showed that there is also a gradual but consistent increase in the rental and capital values of shops from 2011 to 2020. The rental value and capital value of shop properties in 2010 were also included to enable the researchers derive the 2011 returns with the use of *Eqn 1*. The consistent increase in the rental and capital values may also be due to the locational characteristics and the yearly inflation prevalent in the study area. This is harmonious with the findings of earlier studies in Nigeria by Ogunba *et al* (2013) and Dabara *et al* (2014). The polynomial trend analysis of capital values for shop properties in the study area were presented in Figure 1.

In order to achieve the second objective of the study, the risk of the investment in shop properties were calculated as follows:

**Table 4: Calculation of Risk of Office properties in Uyo**

Year	Rt	Rt - Rt <sub>mean</sub>	(Rt – Rt <sub>mean</sub> ) <sup>2</sup>
2010	-	-	-
2011	0.1230	-0.0291	0.00084681
2012	0.1350	-0.0171	0.00029241
2013	0.1339	-0.0182	0.00033124
2014	0.1387	-0.0134	0.00017956
2015	0.2052	0.0531	0.00281961
2016	0.1452	-0.0069	0.00004761
2017	0.1597	0.0076	0.00005776
2018	0.1441	0.0080	0.00006400
2019	0.1666	0.0145	0.00021025
2020	0.1695	0.0174	0.00030276

Source: Researchers’ analysis, 2021

From Table 4, the risk of the Office properties in the study area can be calculated thus:

$$\Sigma R_t = 1.5209$$

$$N = 10$$

$$\begin{aligned} \text{Therefore, } R_{t_{\text{mean}}} &= \frac{1.5209}{10} \\ &= 0.1521 \end{aligned}$$

$$\Sigma(R_t - R_{t_{\text{mean}}}) = 0.005152$$

$$\begin{aligned} \text{Variance} &= \frac{0.005152}{10} \\ &= 0.0005152 \end{aligned}$$

Therefore, Standard Deviation = 0.0239

Thus, the risk of investment in Offices in the study area is as low as 2%

Similarly, the risk of investment in shop properties is analyzed in Table 5.

**Table 5: Calculation of Risk of Shop properties in Uyo**

Year	Rt	Rt - Rt <sub>mean</sub>	(Rt - Rt <sub>mean</sub> ) <sup>2</sup>
2010	-	-	-
2011	0.0895	-0.0681	0.00463761
2012	0.0763	-0.0813	0.00660969
2013	0.3702	0.2126	0.04519876
2014	0.0923	-0.0653	0.00426409
2015	0.0709	-0.0867	0.00751689
2016	0.3371	0.1795	0.03222025
2017	0.0736	-0.0840	0.00705600
2018	0.0994	-0.0582	0.00338724
2019	0.2863	0.1287	0.01656369
2020	0.0804	-0.0772	0.00595984

**Source: Researchers' analysis, 2021**

From Table 5, the risk of the shop properties in the study area can be calculated thus:

$$\Sigma R_t = 1.5760$$

$$N = 10$$

$$\begin{aligned} \text{Therefore, } R_{t_{\text{mean}}} &= \frac{1.5760}{10} \\ &= 0.1576 \end{aligned}$$

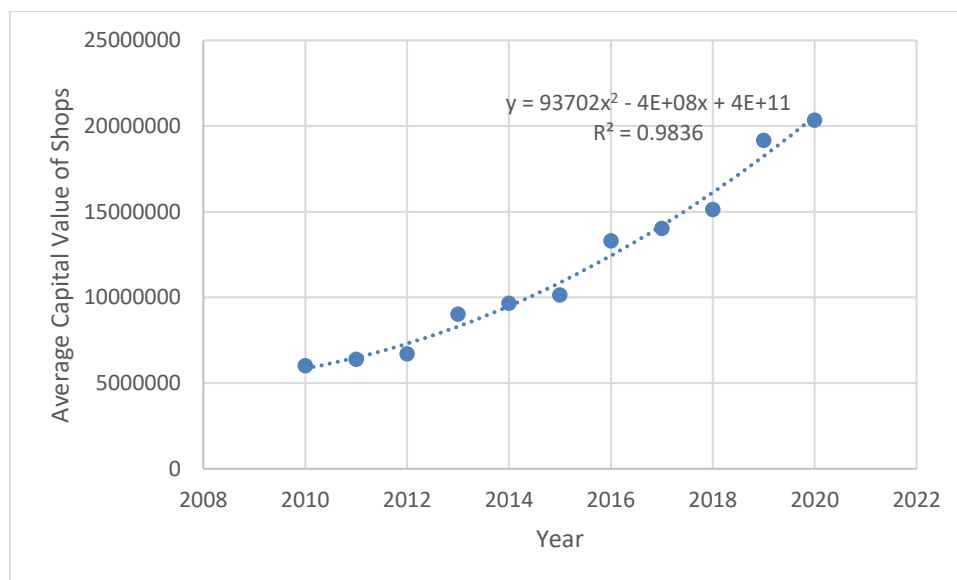
$$\Sigma(R_t - R_{t_{\text{mean}}}) = 0.13341406$$

$$\begin{aligned} \text{Variance} &= \frac{0.13341406}{10} \\ &= 0.013341406 \end{aligned}$$

Therefore, Standard Deviation = 12%

Thus, the risk of investment in Offices in the study area may be said to be higher at 12%

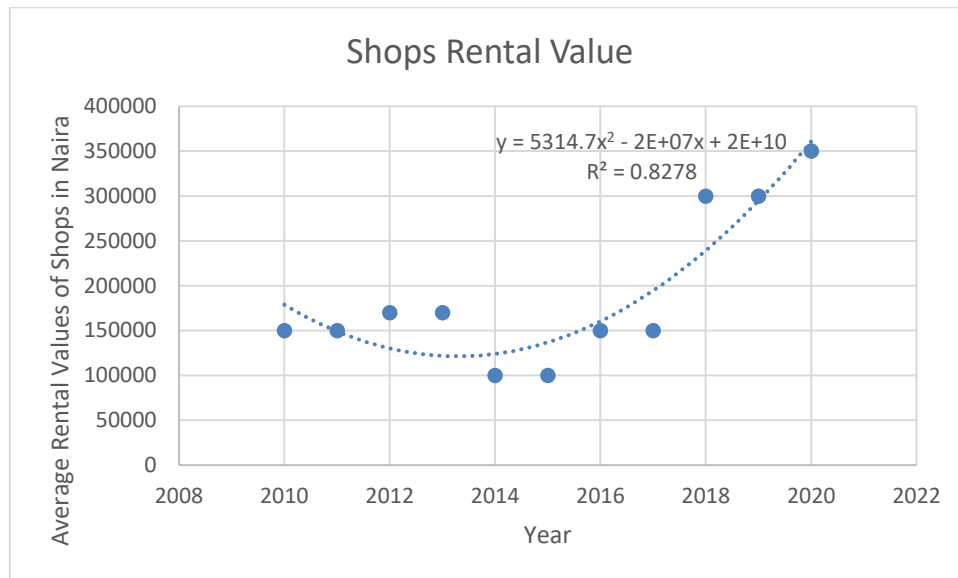
In order to achieve the third objective, by examining the trend of investment in shops and offices in the study area, the trend analysis was carried out and presented graphically in Figures 1 to 4.



**Fig. 1: Graphical Illustration of the Capital Values of Shops in Uyo Metropolis**

In Figure 1, the capital values of shops were observed to be increasing gradually from 2010 to 2020. The R-squared value was found to be 98.36%. This implies that the level of reliability of the trend is very high.

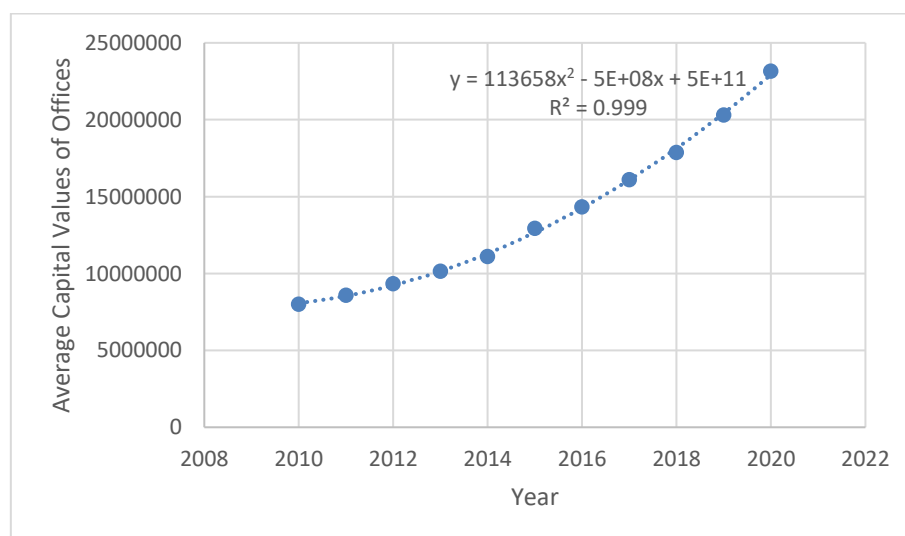
Similarly, the polynomial trend analysis of rental values for shop properties in the study area was presented in Figure 2.



**Fig. 2: Graphical Illustration of the Rental Values of Shops in Uyo Metropolis**

In Figure 2, it was also observed that the rental values of the shop properties kept increasing from 2010 to 2013 after which there was a sharp fall in the rental values of 2014 and 2015. The fall may not be unconnected with the demolition of shops due to the uncommon transformation agenda of the then present government. However, the prediction was made with  $R^2$  value of 82.78%, which may be said to be still reliable.

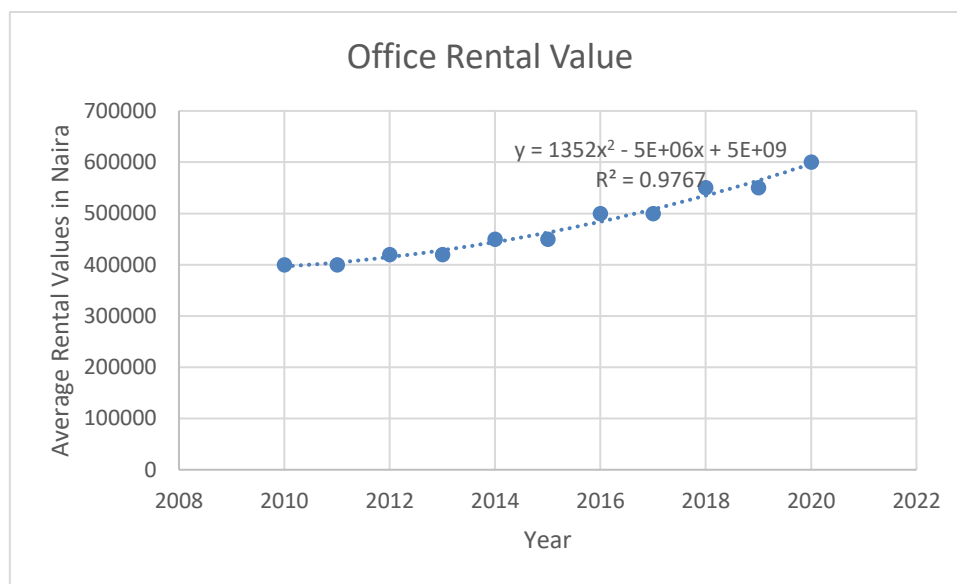
On the other hand, the polynomial trend analysis of the average capital values of offices in the study area was presented in Figure 3.



**Fig. 3: Graphical Illustration of the Average Capital Values of Offices in Uyo metropolis**

Figure 3 presented the average capital values of office properties in Uyo from 2010 to 2020. It was observed that there was a steady increase in the capital values with almost a hundred percent R-squared value.

Finally, the polynomial trend analysis of the average rental values of offices in the study area was presented in Figure 4.



**Fig. 4: Graphical Illustration of the Average Rental Value of Offices in Uyo Metropolis.**

In Figure 4, the rental values of office property type were observed to have kept increasing gradually from 2010 to 2020. The trendlines indicated a consistent and steady increase with R2 value of about 98%.

## 6.0 Discussion of Findings

The study revealed that for both property types, the trendlines indicated a constant and steady increase from 2010 to 2020. Using the forecast equation derived from the polynomial regression analysis, both the rental and capital values for the next few years can be calculated. Trend analysis of the capital and rental values indicated a continuous rise in capital or rental values from year to year. Models for predicting future values of shops were derived, which include  $Y^{cvs} = 93702x^2 - (4E + 08)x + 4E + 11$  representing forecast model for capital values of shops;  $Y^{tvs} = 5314x^2 - (2E + 07)x + 2E + 10$  denoting forecast model for rental values of shops.

Similarly, models for predicting the future values of offices were also derived which include:  $Y^{cvo} = 11368x^2 - (5E + 08)x + 5E + 11$  denoting the forecast model for capital values of offices  $Y^{rvo} = 1352x^2 - (5E + 06)x + 5E + 09$  representing the forecast model of the rental values of offices. Generally, the predictive models are useful to forecast the likely capital and rental values of shop and office properties in the study area. If an intending commercial property investor would desire to know the probable capital and rental values of shops and offices within the study area, say in the next few years, the he/she can simply apply the number of years to replace x in the equation in order for the capital or rental value of that particular year can be derived as the case may be.

## 6.0 Conclusion

The study examined the trends in the rental and capital values of office and shop properties in Uyo metropolis. It also ascertained the returns and risk involved in the investment of shops and offices in Uyo. It employed the Survey method to collect data for analysis. The study generally found out that there was a steady and continuous increase in the rental and capital values of the commercial properties under study. It was also found out that investment in shops is riskier than investment in offices. The information provided in this study can provide a basis for investors to make informed decision with respect to real estate investments in an emerging property markets in general and in Uyo, Nigeria in particular.

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