Trends in the Rental Values of Residential Properties Proximate to Tertiary Institutions: The Case of Federal Polytechnic Ede, Nigeria

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Abstract
The aim of this study is to assess the trend of residential properties proximate to Federal Polytechnic Ede, Nigeria with a view to providing information for real estate investment decisions. The study was carried out by means of questionnaire survey. The population for the study consisted of Estate Surveyors and Valuers, Landlords, and the staff of the Management Information System (MIS) Unit of the Federal Polytechnic Ede. The areas covered for this study includes Agbale, Rombay, Ogberin and main gate areas which are neighborhoods proximate to the institution. Both descriptive statistical tools such as percentages, weighted mean scores and averages as well as inferential statistical tools such as correlation and regressions models were used in analysis of the data obtained. The study found that there was a steady and consistent increase in students' enrolment from 2007 to 2016. Similarly there was a significant increase in the rental values of residential properties in the neighborhoods around the institution. Both the correlation and regression analysis showed a significant positive relationship between students' enrolment and the rental values of residential properties in the study area. The implication of this is that investors in the real estate sector could consider investing in properties proximate to such institutions so as to address the mismatch between supply and demand for students' accommodation and enjoy high returns on investments.
Keywords: Investment, property, proximate, rent, residential, students.

1. Introduction

Globally, it has been observed that the enrolment of students' into tertiary institutions is on the increase. Sharma (2012) asserted that such increase had witnessed a growth of up to 160% in enrolment of students into tertiary institutions in both developed and developing economies. Despite this consistent increase in students' enrolment globally, the Centre for Global Education (2003) noted that in many countries of the world, most especially in developing economies; the provision of adequate residential accommodation facilities for students in tertiary institutions has continued to remain a challenge. In many developing countries, despite the efforts of the government to provide decent accommodation for its students, a wide gap between demand and supply of such students housing is observed (Adebowale, Asa, Omotehinse, Ankeli & Dabara, 2017). This observable mismatch between demand and supply of students' accommodation which needs to be addressed has necessitated the entrance of other educational stakeholders (in the private sector) into the students' accommodation rental market to support government efforts in bridging the gap and mismatch between students housing demand and supply on or off campus (Center for Global Education 2002; Dabara, Omotehinshe, Okunola, Ankeli & Adaranijo, 2016). The private sectors' participation in the provision of affordable student accommodation proximate to tertiary institutions has witness changes in rent payable for usage of such facilities (Dabara, 2014; Adebisi ,Ezeokobi ,Olutabo and Alade, 2015; Dabara, 2015). This study aims at determining the trends of rental values of students accommodation proximate to tertiary institutions as well as examining the relationship between students' enrolment and rental value of residential properties proximate to the institutions using Federal Polytechnic, Ede, Nigeria as a case study of an emerging property market with a view to providing information for real estate investment decisions.

In African countries in the past, students housing was mostly found within the institutions' campus exclusively. This was the picture of the Nigerian tertiary institutions from inception to the late 70's; however, as observed by Akingbohungbe and Akinluyi (2012), students' population explosion by virtue of increase in enrolment gave rise to the development of private off campus students' hostels. The Federal Polytechnic Ede Nigeria was established in 1992 and over the years witnessed tremendous increase in its student's enrolment without a corresponding increase in the number of the on campus students' hostel accommodation. This has resulted to majority of students of the institution (estimated to be about 75% of the students) settling for alternative accommodation in the property rental market proximate to the institution, this has led to the paradigm shift to off campus hostel accommodation which has resulted in increase in the rental values of properties within

the neighborhoods of the institution (Ankeli, 2007). In the light of the foregoing, the study seeks to answer the following questions: What was the student population trend of the Federal Polytechnic Ede from 2007 to 2016? What was the rental value trend of residential properties proximate to the study area within the study period? And is there any relationship between Federal Polytechnic Ede students' enrolment and the rental values of residential properties proximate to the institution? The remaining part of the paper is structured as follows: the next section presents review of related literature, section three presents the methodological approach adopted for the study, section four discussed results obtained from the study while section five concludes the study.

2. Literature Review

Several authors have examined the relationship between student's population and rental value of residential properties in both developed and developing nations around the world. Some of these studies include the following:

Nurul et al. (2011), conducted a study in Asia which examined students' satisfaction with campus Student Housing Facilities (SHF) in selected Asian Universities. Questionnaire survey was used in obtaining data from the respondents in the study area. The data were analyzed using descriptive statistical tools. Results from the study showed that students were satisfied with the provided SHF showing a 74% satisfaction level. These findings cannot be generalized, most especially when compared to SHF obtainable in developing nations like Nigeria.

Najihah (2013) carried out a study in Malaysia which investigated the impact of neighborhood facilities on the values of residential properties in Bamdar Baru Bangi, Malaysia. Mixed method approach was adopted for the study. Data for the study were obtained through relevant documents, interviews and observation of the author in the case study. The methodology adopted for the study included the use of Thematic Analysis, Mann Whitney U test analysis and trend analysis. Findings from the study indicated that there were positive significant relationship between neighborhood facilities (such as shopping complexes, schools, sport accommodation, highways accessibility and worship centers) and the values of residential properties in Bandar Baru Bangi, Malaysia.

Ankeli et al. (2016) examined the impact of housing infrastructure on the rental values of residential properties in Oshogbo metropolis. Questionnaire survey was used to obtain data from the study area. Oshogbo metropolis which is the study area was divided into four residential zones. A total of 450 questionnaires were administered on the respondents using systematic random sampling techniques, the data obtained were further analyzed with the aid of both descriptive and inferential analytical techniques. The study revealed that properties with better conditions in terms of infrastructures and physical soundness command higher rental values in the study area.

Adebisi et al. (2017) conducted a study which examined factors influencing students' choice of private hostels over on campus hostels in proximity to the Federal University of Technology, Akure Nigeria. The study also considered the availability and functionality of private hostel facilities in the study area and its impact on students' choice of housing accommodation. Data for the study was obtained through administration of structured questionnaire to the selected respondents. The data obtained was analyzed using the Relative Importance Index (RII) and Waited Mean Scores. The results revealed that availability of functional basic housing facilities and length of lease were the major factors that influence students' decisions to reside in private hostels proximate to the Federal University of Technology Akure, Nigeria as against on campus hostels.

Adeola & Olutope (2017) conducted a study in Nigeria which examined the relationship between public infrastructures and residential property rental values in Lagos. Questionnaire survey was used in collecting data for the study. The study population comprised of residential tenants across the low, medium and high residential neighborhoods in the study area, as well as registered estate surveyors and valuers in Lagos state. Data obtained for the study were analyzed by means of both descriptive and inferential statistical tools such as frequencies, percentages, mean scores, correlations and regression analysis. The study revealed that infrastructure provision in the study areas attracted tenants in their numbers which invariably increases demand consequently increasing the rental values of properties in the study areas.

3. Research Methodology

The Federal Polytechnic Ede which is the case study for this research work was founded in February 1992. The polytechnic started with three (3) schools (faculties) namely: School of Applied Science (SAS), School of Business Studies (SBS) and School of Engineering Technology (SET) and later on the school of Environmental Studies (SES) was introduced. Also, the institution has two functional hostels one for female and the other one for male students. However, from students' enrolment data, it was observed that the two hostels cannot accommodate all the students admitted, this gave rise to off campus hostels proximate to the institution which are largely managed by private investors. These hostels are found in neighborhoods around the campus where data for the study were drawn including: Agbale area, Ogberin area, Rombay area and 'Main campus gate' area.

The study population for this research work includes all the landlords and student tenants living around the polytechnic neighborhood as well as staff of the polytechnic MIS unit. The Data for the study are primary data which were sought through the use of questionnaire and personal interviews. The questionnaire was structured to capture data on students' enrolment in Federal Polytechnic Ede between 2006/2007 and 2015/2016 academic sessions; the passing rent on major residential property types (tenement buildings, self-contained and flats) proximate to Federal Polytechnic Ede between 2006/2007 and 2015/2016, and the correlations between students' population (enrolment) and rental values of the selected residential property types in the study area and within the study period. Data on the population/enrolment of students of Federal Polytechnic Ede between 2006/2007 and 2015/2016 was obtained from the Department of Management Information System (MIS) Unit of the institution so as to determine the number of students of Federal Polytechnic Ede from 2006/2007 and 2015/2016. While the passing rent within the study period was obtained from landlords and Estate Surveyors in the study area.

The sample frame for the study is: Agbale Area – One thousand and Twenty (1020); Ogberin Area – One thousand and Thirty- Five (1035); Rombay Area – Eight hundred and Fifty (850) and Main gate area – Six hundred and Fifteen (615). 15% of the sample frame was used as sample size for the study. Owning to the relatively large numbers of population of landlord and tenants, the random sampling technique was used to select respondents from the targeted population. Descriptive statistical tools such as weighted mean scores and frequency tables as well as inferential statistical tools such as correlation and regression analysis were adopted in analyzing the data obtained for the study.

The regression equation adopted is as follows:

$$.RV = a + b_1TENM + b_2SCON + b_3FLT \qquad\qquad 1$$

Where:

Y = Rental Value of residential properties (RV)

TENM = Tenement (X_1)

SCON = Self-Contained (X_2)

FLT= Flat (X_3)

b_1, b_2 ……..bn are multiple regression coefficients for the independent variables

"a" is an error term which points to the fact that a proportion of the variance in the dependent variable Y is unexplained by the regression equation.

4. Results and Discussions

This section of the study presents analysis of data obtained from the study area and discussion of results. The analysis was structured to; determine the trend of students' enrolment in Federal Polytechnic Ede between 2006/2007 and 2015/2016 academic sessions; assess rental value trend of residential properties around Federal Polytechnic Ede between 2006/2007 and 2015/2016, and analyze the relationship between students' population/enrolment and rental values of residential properties in the study area and within the study period.

Table 1: Population/enrolment of students in Federal Polytechnic Ede, between 2006/2007 and 2015/2016 Academic Sessions

Academic Session	Male	Female	Population of Students
2006/2007	4411	1612	6023
2007/2008	2941	1673	4614
2008/2009	2515	1883	4398
2009/2010	2915	2251	5166
2010/2011	2944	2209	5153
2011/2012	3177	2562	5739
2012/2013	3591	3003	6594
2013/2014	0	0	0
2014/2015	5363	4154	9517
2015/2016	6222	4758	10980

Source: Management Information System unit (FPE), 2017

From Table 1 it is evident that students' enrolment from 2006/2007 to 2008/2009 academic session kept decreasing. For instance, it was observed that 6023 students were enrolled in 2007/2007 academic session, 4614 were in 2007/2008 session and 4398 were enrolled in 2008/2009 academic session. There was a slight increase in students' enrolment in subsequent academic sessions that is from 2009/2010 to 2012/2013 academic sessions. It was observed that there were no students admitted in 2013/2014, this was due to the national indefinite strikes embarked upon by the Academic Staff Union of Polytechnic (ASUP). As a result, the students on the admission list for that year were added to that of 2014/2015 academic session. This led to a relatively high jump in number of students enrolled to 9517. Similarly, the 2015/2016 academic session also witnessed a high enrolment of

students. The implication of this is that the hostels accommodation which were not increased to match the number of students enrolled became grossly inadequate to accommodate all the students in the school. Figure 1 shows the graphical representation of the students' enrolment in Federal Polytechnic Ede, within the study period.
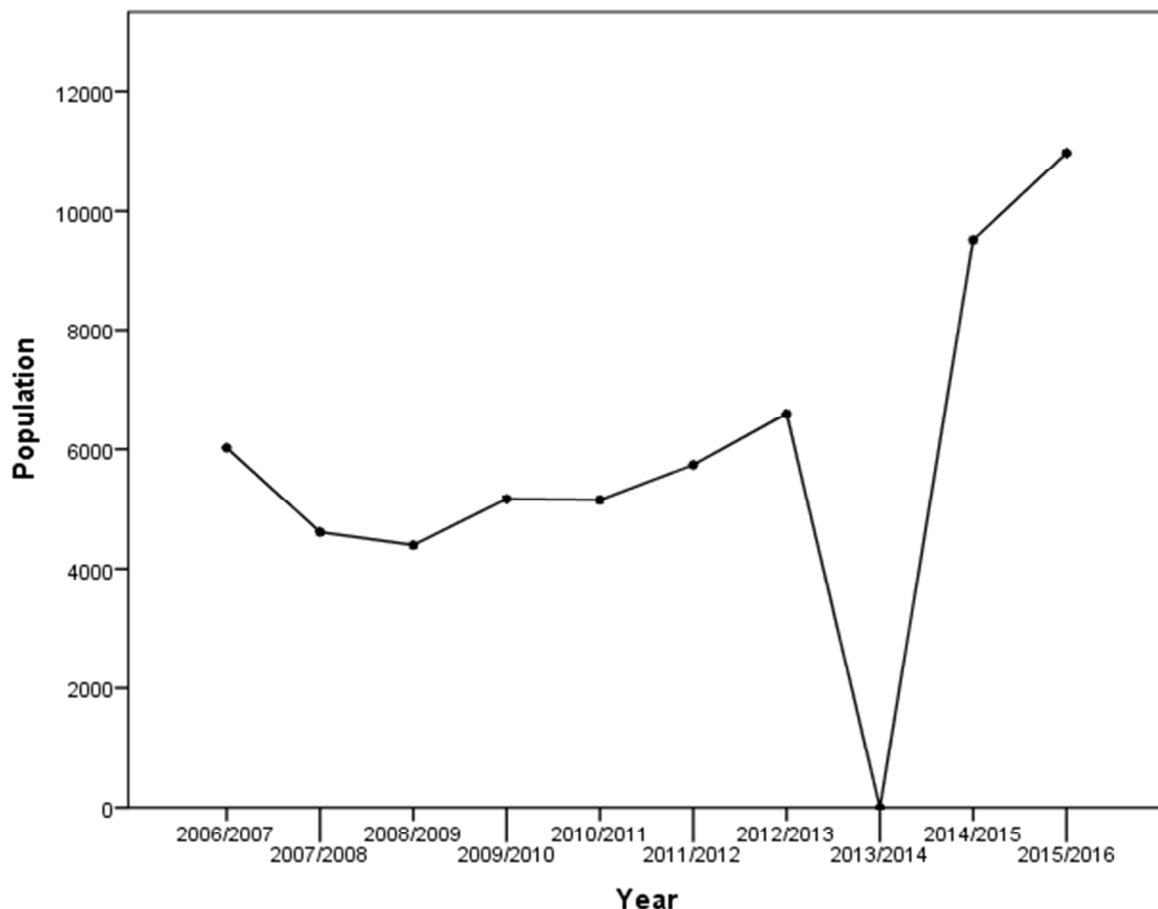

Figure 1: Trend of students' enrolment in Federal Polytechnic Ede

Figure 1 showed that there was a consistent fluctuation and certain degree of volatility in respect of the students' enrolment in the institution within the study period. Table 2 presents the average rental values of selected accommodation types proximate to the institution.

Table 2: Rental values of residential properties proximate to Federal Polytechnic Ede

Year	Tenement (₦)	Self-Contained (₦)	Flat (₦)	mean
2007	10516	21111	31429	21,019
2008	10853	22111	34714	22,559
2009	11768	25000	41857	26,209
2010	12737	28444	47429	29,537
2011	14047	30000	55714	33,254
2012	14963	32367	61714	36,348
2013	16221	35556	71143	40,973
2014	17610	37000	81000	45,203
2015	19368	41000	96429	52,266
2016	20284	46111	118000	61,465

Source: Field Survey, 2017

Table 2 shows the average rental values of residential properties (tenement, a room self-contained and flat) in Federal Polytechnic Ede's neighborhood between 2007 and 2016. Data for the rental values covered the major property types in the study area. The data was collected from Estate Surveyors and Valuers as well as landlords who have properties in the study area. From Table 2, it was observed that the rental values in these study area were quite unstable. Figure 2 below shows the trend of rental values in the study area.
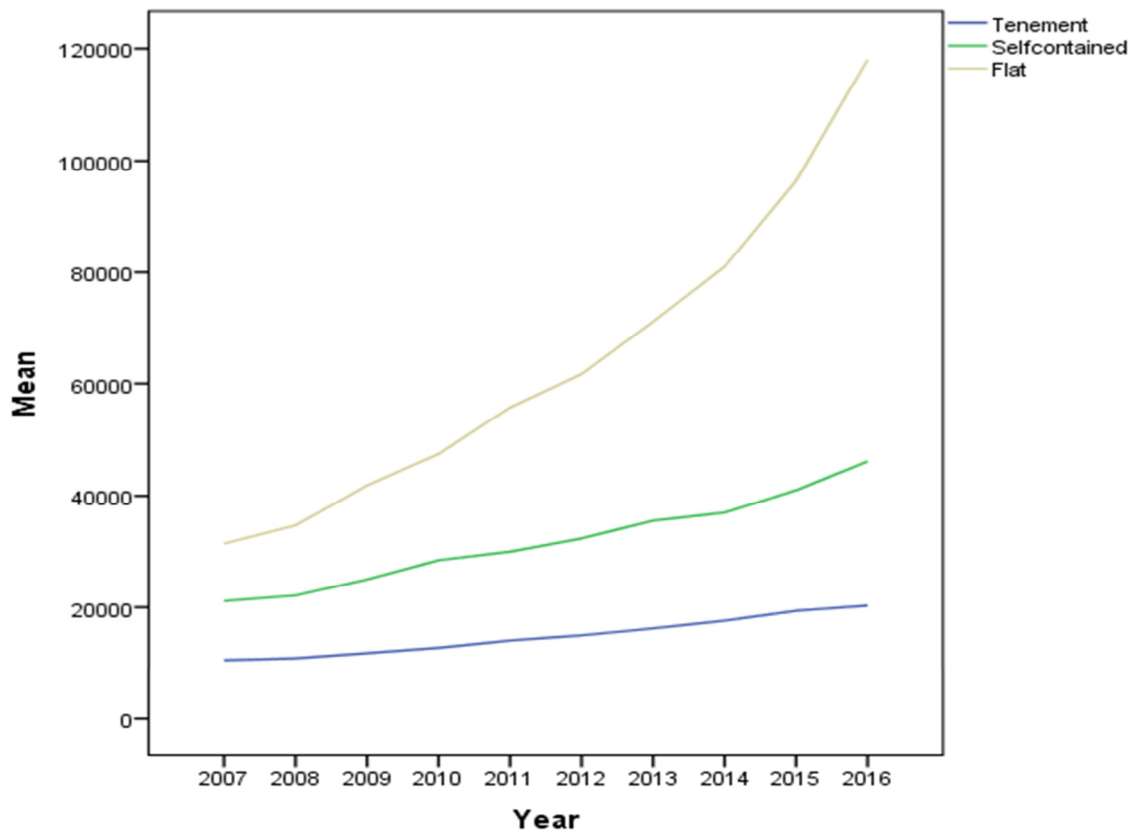
Figure 2: Trend of rental values of residential properties around Federal Polytechnic Ede.

Figure 2 shows the annual rental value trend of residential properties (tenement, room self-contained and flat) proximate to the Federal Polytechnic Ede. All the property types showed a consistent but gradual increase in terms of rental values from 2007 to 2016. The observable margin in the rental growth rate of tenement and a room self-contained is wider when compared to that of flats. This results are in agreement with similar studies conducted by Ankeli, Dabara, Gombo, Lawal & Agidi (2016); Ankeli, Dabara, Oyediran, Guyimu & Oladimeji (2015) and Dabara, Ankeli, Omotehinshe, Aiyepada & Agidi (2017).

Table 3: Descriptive statistics

	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Students Population	0	10980	5818.40	2965.763	-.072	.687	1.444	1.334
Tenement	10516	20284	14836.70	3477.176	.318	.687	-1.243	1.334
Self contained	21111	46111	31870.00	8163.189	.329	.687	-.712	1.334
Flat	31429	118000	63942.90	28017.780	.773	.687	-.123	1.334

Source: Analysis of Survey Data, 2017

Table 4: Correlation Analysis

	Population	Tenement	Self-contained	Flat
Population	1			
Tenement	0.920673	1		
Self-contained	0.952877	0.992132	1	
Flat	0.960615	0.986000	0.990132	1

Source: Analysis of Survey Data, 2017

Table 3 presents the minimum, maximum, mean and standard deviation values of the data set used for the study. Similarly, it presented the Skweness and Kurtosis values which indicates the validity of the data set used. Table 4 presents the correlations between the rental values of tenement, self-contained and flat with the students' population. Table 4 revealed that there is a strong positive relationship between the variables. This implies that a

change in students' population of the institution impacts on the rental values of the properties proximate to the institution. Tables 5 to 7 present the regression analysis of the variables to show the predictors that impact on the rental values of properties proximate to the institution.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.677	.459	.188	2672.494

a. Predictors: (Constant), Flat, Tenement, Self contained

Table 6: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	36308401.818	3	12102800.606	1.695	.000
Residual	42853352.582	6	7142225.430		
Total	79161754.400	9			

a. Dependent Variable: Population
b. Predictors: (Constant), Flat, Tenement, Self contained

Table 7: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	16798.312	11798.207		1.424	.004
Tenement	-2.639	2.092	-3.094	-1.261	.025
Self contained	.303	1.060	.834	.286	.050
Flat	.290	.232	2.735	1.248	.028

a. Dependent Variable: Population

Table 5 presents regression model summary result indicating a significant positive correlation of 0.677 between all the variables. Table 6 tests the overall significance of the coefficients (β's). The results indicated that the overall model is statistically significant, $[F (3, 9) = 1.695, P = 0.000]$. Table 7 presents the coefficients, the significance values of the individual β's, revealed that students population in the institution significantly predicts the rental values of tenement, self-contained and flat accommodation types in the study area with $t = -1.261$, $p = 0.025 < 0.05$; $t = 0.286$, $p = 0.050 < 0.05$; $t = 1.248$, and $p = 0.028$ respectively, hence they are statistically significant.

The regression equation adopted therefore is
$$Y = 16798.312 - 2.639X_1 + 0.303X_2 + 0.290X_3$$

The above analysis could be interpreted to mean that there is a strong positive significant relationship between students' population and the rental values of residential properties proximate to the Federal Polytechnic Ede. Simply put, a change in students' population leads to changes in the rental values of residential properties proximate to the institution.

5. Conclusion

This study examined the relationship between students' population and the rental values of selected residential properties proximate to Federal Polytechnic in Ede, covering the period from 2007 to 2016. The study found that there was a steady and consistent increase in the number of students enrolled in the institution from 2007 (when 6023 students were enrolled) to 2016 (when 10980 students were enrolled). The study also revealed that there was a consistent gradual increase in the rental values of residential properties proximate to the institution within the study period. The study further showed that there was a strong significant relationship of 0.677 between student population and the rental values of residential properties proximate to the Federal Polytechnic Ede within the study period. From the analysis of data obtained for this study, it was revealed that as the number of students' enrolled increases, the rental values of tenements, self-contained and flats proximate to the institutions also increases. The implication of this is that investors in the real estate sector could consider investing in properties proximate to such institutions for high returns on investments. Furthermore it is recommended that the school management should also consider improving on the number of hostel accommodation provided on campus vis-à-vis the number of students enrolled. The mismatch between the number of hostel accommodation and the number of students enrolled should be addressed through construction of more hostels on the campus.

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