Comparative Analysis of the Performance of Commercial and Residential Real Property Investments in Enugu Urban From 2010-2017

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Abstract: *This study examined real estate investments in Enugu urban by conducting a comparative analysis of the investment performance of commercial (shops and offices) and residential properties in New Haven and Ogui Road from 2010-2017 focusing on yearly returns and risk. 40 units of commercial and residential properties in New Haven and Ogui Road were selected for the study. Purposive sampling was used to select 10 units each of commercial and residential properties from the 2 locations. Data on rental and capital returns on these properties for the 8-year period were obtained from 2 Estate Surveying & Valuation firms in the study area. Data collected were analyzed using Arithmetic Mean Return (AMR), Standard Deviation (SD), and Coefficient of Variation (COV) to obtain average returns and risks over the period. Findings revealed that residential property investment is less secure in Ogui Road with a return of 7.8%, risk of 3.46% and COV of 44.36%, while commercial property investment (offices) is more secure in New Haven with a return of and 10.6%, risk of 4.36%; and COV and 41.13%. However, investment with lower percentage of COV is more secure than that which has higher COV. The performance measurements showed that commercial property investment performs better in terms of returns. The study concluded that before embarking on real estate investment, an investor should assess past performance of similar investments because past performance is an indication of future performance. It recommends that prospective investors should seek guidance of Estate Surveyors & Valuers to discern the type of property to invest in and when.*

Keywords: *comparative analysis, performance measurement, commercial property investment, residential property investment, return, risk*

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I.   Introduction

One of the main objectives of real estate investment is returns. This is measured in terms of holding period (time) returns and should be periodically assessed to gauge the necessity for retention or disposal of the asset. The study of real estate investment performance is very crucial especially in the current economic climate where there is huge emphasis on the income creating potential of real property. Originally, property owners considered real estate as a dwelling place, work place, playground or farmland. It was not until in the 1980s that they started considering real estate as an investment. According to Igbinosa (2011), real estate was originally seen as a legacy which parents bequeath to their descendants but with the realization that real estate is a major source of capital appreciation and a good hedge against inflation, the real estate market is coming close in popularity and importance to the money and capital markets.

Investment in real estate is regarded as a specialized form of investment which involves the highest risks, and so requires the highest skills to provide the highest returns (Nwankwo, Kalu, & Igwe-Kalu,2018). Therefore, before investing in real estate, it is essential to consider the characteristics of the proposed real estate investment because the performance of those characteristics will impact the performance of the investment. For instance, when considering a real estate investment, one of the most important criteria apart from location is the type of property. An investor needs to ask himself whether the underlying properties are, for example, residential, shopping malls, warehouses, office towers or a combination of any of these (Ryder, 2012). Each type of real estate has a different set of drivers influencing its performance therefore; an investor cannot simply assume that one type of property will perform well in a market where a different type is performing well. The measurement of risks and returns are the variables for determining the performance of real estate investments. Risk is the probability of

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variation between actual and expected outcomes. While return is the profit realized from real estate investment. Risk is a common feature of all forms of investment and is fundamental to investment choice. According to Udoudoh (2016), risk is a common characteristic of all types of investment including real estate investment which involves the creation of new income yielding assets from land and its resources based on capital analysis of expected costs and benefits within a given period. There appears to be greater focus on returns in Nigeria (Kalu, 2005), however, Bello (2003) emphasized that risk is a factor which investors need to know about when investing in real property at any location. Therefore, the study of real estate investment performance, whether residential or commercial, is very important, especially at this time when emphasis is on investment performance analysis in many parts of the world. The aim of this study is to examine the risks and returns in commercial and residential real estate investments in Enugu urban from 2010-2017.

II. Literature Review

Commercial and residential properties are considered investments in Nigeria, unlike in the United Kingdom where residential property is rarely regarded as an investment (Mfam & Kalu, 2012). Majority of residential accommodation in Nigeria are developed for investment purposes and as the demand for residential accommodation outweighs the supply it becomes more attractive as an investment. Returns on residential properties usually differ depending on the nature and location of such properties. The return on properties in an area such as government reserved area (GRA) is usually lower than in areas with higher densities due to longer leases, higher rents, and lower occupancy rate associated with GRAs. Returns on commercial properties are more secured than residential properties because the occupier who might have built goodwill around the place would not want to go elsewhere and lose such goodwill; this will make him pay his rent regularly to avoid being evicted from the premises (Udobi, Onyejiaka, & Nwozuzu, 2018).

By measuring real estate investment performance, the degree of achievement against set objectives and targets can be expressed in quantitative terms. The shortfall or excess, relative to targets can then be analyzed and useful conclusions and explanations drawn for decision- making. Performance analysis is a very vital component of the decision-making process. It would be virtually impossible to make rational decision at any level without quantified evidence of past performance and a reasoned assessment of likely future performance of an investment. Every acquisition of real estate is an investment in the real estate market because the real estate purchaser gives up a capital sum in expectation of a flow of financial and non-financial benefits over time. According to Baum, Mackmin and Nunning (2011), a property investment is an exchange of capital outlay for future benefits. In view of the nature of benefits, investors or developers of real estate are divided into those who purchase or develop strictly as pure investment and others who purchase or develop for occupation and use. Pure investment in real property is a financial investment in the acquisition of income producing property to earn returns in the form of both income and capital appreciation/periodic returns. The phases of real estate investment include acquisition, management, and disposal. Being physically immobile, interest in real estate can only be transferred as bundle of rights. Basically, a real estate investment market is an arrangement by which buyers and sellers of real property interact and determine a price for the transfer (sale or leasing) of property rights subsisting in the assets. Hence, Ring and Dasso (1981) states that real estate market activity involves many types of properties, many buyers and sellers, and many specialists who interact under appropriate influence to fix prices for the market transactions. Thus, market participants who buy and sell real property rights are consumers and/or occupiers and investors and/or producers. Consequently, occupiers demand real estate products either as consumer goods (e.g. housing) or as producer goods (e.g. shop, office, factory, and farm) and sometimes as both. As a consumer good, real estate is required for the satisfaction its occupiers enjoy and as a producer good, it is required for the contribution a particular real estate product makes to the production of other goods and services. Kalu (2001) enumerated the objectives of performance measurement to include: the measurement of the rate of return, the assessment of how these rates compare with other assets in the portfolio, examination of the timing of asset acquisition, good asset and portfolio selection, consistency in achieving good performance, assessment of the risk profile, examination of the portfolio diversification and sources of the portfolio returns. According to Hargitay and Yu (1993), the results and conclusions of performance measurement are summarized in a performance report and are expected to: quantify historic performance and measure it against some chosen standard, provide explanations for good or bad performance, assess in quantitative terms the expected future performance to see if the prospective performance is likely to meet the target set, and assist in the re-assessment of investment strategies and to point to possible adjustments. The risk of an investment cannot be measured without reference to the returns and according to Hoesli and MacGregor (2000), the expected risk for investment decisions is important but is often a proxy of historical values on the assumption that the spread of historical returns is a good indication of the spread of future returns. It is difficult ordinarily to determine with accuracy what the future holds for returns and the

associated risk because a decision to invest is beclouded by uncertainty even when historical data are available. Real estate return is measured in terms of total return (TRt) which comprises income return (IRt) and capital return (CRt) (Hoesli & MacGregor, 2000; Baum, Mackmin, & Nunning, 2011). Mathematically, total return is expressed as:

$$TRt = \frac{(CVt - CVt - 1) + NIt}{CVt - 1}$$

Where:
TRt = Total return for the period t
NIt = Net income received during the period t
CVt-1 = Capital value (price) at the start of period t
CVt = Capital value (price) at the end of period t

Risk is the probability of variation between actual and expected returns. The measurement of risk is by way of statistical standard deviation. Hence, Baum and Crosby (2007), Mehdi (1987), Kalu (2001), Pandey (1999), Hoesli and MacGregor (2000) all agree that the traditional approach is to calculate the standard deviation of the historical variability as a measure of risk, and that variance and standard deviation are the most frequently used measure of dispersion and interpreted as risk. Standard deviation is the square root of variance. Therefore, to evaluate risk, standard deviation and coefficient of variation are used.

$$SD = \frac{(TRt - AMR)^2}{n}$$

Where:
SD   =   Standard Deviation
TRt   =   Total return for the period t
AMR   =   Arithmetic Mean Return
n   =   Total number of periods

$$COV = \frac{Standard\ Deviation\ (SD)}{Arithematic\ Mean\ Return\ (AMR)}$$

Where:
COV = Coefficient of Variation

III. Methodology

This study is an empirical research which adopts a survey research design approach. The study population comprised commercial and residential properties in Enugu urban. Commercial properties of 3 B/R office block on 3 floors while residential properties include 3-bedroom flats on 3 floors. Data on these properties were obtained from registered Estate Surveying and Valuation firms in Enugu urban. These firms supplied data on forty (40) units of commercial and residential properties in two (2) locations in Enugu urban: New Haven and Ogui Road. Only New Haven and Ogui Road was chosen because comparable commercial and residential properties exist there. Both locations have commercial properties (offices) and residential properties (3-bedroom flats) on 3 floors. Purposive sampling approach was used to select ten (10) units of commercial properties (3 B/R office block on 3 floors and ten (10) units of 3 B/R block of flat on 3 floors (residential properties) from each location. The considerations for purposive sampling include similarities in the physical features such as offices in the commercial properties on 3 floors 3 B/R office block and 3 B/R block of flat number of flats (residential) on 3 floors. Similarities in the rent passing and capital values of commercial properties and residential properties were also considered. Data collection involved questionnaires drawn up to solicit information on commercial and residential property investment from two (2) registered Estate Surveying and Valuation firms in Enugu urban: one (1) in New Haven and one (1) in Ogui Road. The questionnaires administered to these firms were structured to gather information on the annual rental values and capital values of the properties under their management between 2010 and 2017. Annual returns on the investment were determined by calculating the total returns for each period (TRt), while risk was measured by calculating the standard deviation of the annual returns from the mean. Data collected were analysed using Arithmetic Mean Return (AMR), tandard Deviation (SD), and Coefficient of Variation (COV).

IV. Data Presentation And Analysis

Table 1: Returns on 3-bedroom block of flats on 3 floors from 2010-2017

YEAR	TOTAL RETURNS			
	New Haven	**Ogui Road**	**Ogui New Layout**	**Ogui Road**
2010	0.053	0.132	0.131	0.131
2011	0.028	0.117	0.050	0.112
2012	0.116	0.206	0.069	0.106
2013	0.105	0.088	0.045	0.083
2014	0.050	0.082	0.063	0.080
2015	0.083	0.049	0.096	0.040
2016	0.053	0.033	0.038	0.031
2017	0.082	0.046	0.135	0.039
AMR	0.071	0.094	0.078	0.078

Source: Authors' Filed Survey, 2018.

Table 2: Risk on 3-bedroom block of flats on 3 floors in Achara Layout from 2010-2017

YEAR	TRt	TRt – AMR	(TRt - AMR)^2
2010	0.053	0.018	0.000324
2011	0.028	0.043	0.001849
2012	0.116	0.045	0.002025
2013	0.105	0.034	0.001156
2014	0.050	0.021	0.000441
2015	0.083	0.012	0.000144
2016	0.053	0.018	0.000324
2017	0.082	0.011	0.000121
TOTAL	0.570		0.0064
	$AMR = \dfrac{0.0152}{8}$ $= 0.106$		$Variance = \dfrac{0.0064}{8}$ $= 0.008$

Source: Authors' Filed Survey, 2018.

Standard Deviation = 0.0008
= 0.0283
Coefficient of Variation = $\dfrac{0.0283}{0.071} = 0.3986$

Table 3: Risks on 3 bedroom Flat (Residential) on 3 Floors in New Haven from 2010 – 2017

YEAR	TRt	TRt – AMR	(TRt - AMR)^2
2010	0.132	0.038	0.001444
2011	0.117	0.023	0.000529
2012	0.206	0.112	0.0125
2013	0.088	0.006	0.000036
2014	0.082	0.012	0.000144
2015	0.049	0.045	0.0020
2016	0.033	0.061	0.0037
2017	0.046	0.048	0.0023
TOTAL	0.753		0.0227
	$Variance = \dfrac{0.753}{8}$ $= 0.094$		$Variance = \dfrac{0.0227}{8}$ $= 0.0028$

Source: Authors' Filed Survey, 2018.

Table 4: Risks on 3 bedroom Flat (Residential) on 3 Floors in Ogui Road from 2010 – 2017

YEAR	TRt	TRt - AMR	(TRt - AMR)^2
2010	0.131	0.053	0.002809
2011	0.050	0.028	0.000784
2012	0.069	0.009	0.000081
2013	0.045	0.033	0.001089
2014	0.063	0.015	0.000225
2015	0.096	0.018	0.000324
2016	0.038	0.04	0.0016
2017	0.135	0.057	0.003249
TOTAL	0.627		0.0102
	$AMR = \dfrac{0.627}{8}$ $= 0.078$		$Variance = \dfrac{0.0102}{8}$ $= 0.0013$

Source: Authors' Filed Survey, 2018.

Standard Deviation	=	0.013^2
	=	0.0361
Coefficient of Variation	=	$\frac{0.0361}{0.078} = 0.4628$

Table 5: Risks on 3 bedroom Flat (Residential) on 3 Floors in Ogui Road from 2010 – 2017

YEAR	TRt	TRt – AMR	(TRt - AMR)^2
2010	0.131	0.053	0.0028
2011	0.112	0.034	0.01156
2012	0.106	0.028	0.000784
2013	0.083	0.005	0.000025
2014	0.080	0.002	0.000004
2015	0.040	0.038	0.001444
2016	0.031	0.047	0.0022
2017	0.039	0.039	0.0015
TOTAL	0.622		0.0099
	AMR $= \dfrac{0.622}{8}$ $= 0.078$		Variance $= \dfrac{0.0099}{8}$ $= 0.012$

Source: Authors' Filed Survey, 2018.

Standard Deviation	=	0.0012^2
	=	0.0346
Coefficient of Variation	=	$\frac{0.0346}{0.078} = 0.4436$

Table 7: Summary of performance of Commercial and Residential Property investments from 2010 – 2017

Performance Measure	Achara Layout	New Haven	Ogui New Layout	Ogui Road
Arithmetic Mean Return (AMR)	0.071	0.094	0.078	0.078
Standard Deviation (SD)	0.0283	0.0529	0.0361	0.0346
Coefficient of Variation (COV)	0.3986	0.5628	0.4628	0.04436

Source: Authors' Filed Survey, 2018.

Table 7 shows that the commercial properties in New Haven, AMR is 0.106 (10.6%), risk is 0.0436 (4.36%) and COV is 0.4113 (41.13%). 41.13% of risk was taken for every unit of return earned. For offices in Ogui Road, AMR is 0.096 (9.6%), risk is 0.049 (4.9%) and COV is 0.5104 (51.04%). This implies that 51.04% of risk was taken for every unit of return earned. Among residential properties (3-bedroom flats on 3 floors), AMR in New Haven is 0.094 (9.4%), risk is 0.0529 (5.29%) and COV is 0.5628 (56.28%). Hence, 56.28% of risk was taken for every unit of return earned, while AMR in Ogui Road is 0.078 (7.8%), risk is 0.0346 (3.46%) and COV is 0.4436 (44.36%). Thus, 44.36% of risk was taken for every unit of return earned.

V. Discussion Of Findings

1. New Haven had the highest return for office and residential property investments within the study period at 10.6% and 9.4% respectively. Return was lowest (7.8%) for residential property investment in Ogui Road.
2. Risk was highest (5.29%) for residential property investment in New Haven and lowest (3.46%) for residential property investment in Ogui Road. However, commercial property investment (offices) was riskier in Ogui Road (4.9%) than in New Haven (4.36%).
3. Commercial property investment (offices) in New Haven provided the highest return (10.6%) at the lower risk rate of 41.13% thus, it is the most secure investment of all followed by residential property investment in Ogui Road.
4. Residential property investment is more secure in Ogui Road with a return of 7.8% at a risk rate of 44.36%.
5. The least secure investment is residential property investment in New Haven with a return of 9.4% at a risk rate of 56.28% followed by commercial property investment (offices) in Ogui Road which had a return 9.6% at a risk rate of 51.04%.
6. The performance measures as shown in Table 7 indicate that both commercial and residential property investments are profitable in Enugu urban; however, commercial property investment has a higher return than residential property investment.
7. Returns and risks for commercial and residential property investments in both New Haven and Ogui Road were significantly volatile (unstable) over the study period and this could be attributed to the effects of exchange rate volatility on real estate investment (Diala, Kalu and Igwe-Kalu, 2017).

The findings of this study shall guide the investment decision of a prospective investor in any given location. The study found that, for a prospective commercial property investor in Enugu urban, the choice location is New Haven, while for a prospective residential property investor Ogui Road is an ideal location. A risk avert investor will prefer to invest in an area which provides high returns at a relatively low risk , whereas an investor who is a risk taker is willing to invest in an area with high returns not minding the level of risk attached to the returns (Udobi et al., 2018). This study corroborates the views of Nwankwo et al. (2018), that performance measurement is a very important tool in real estate investment decision-making.

VI. Conclusion

This study provided a comparative analysis of the performance of commercial and residential property investment in Enugu urban from 2010-2017 by assessing the performance measures for investment in commercial and residential properties which include Arithmetic Mean Return (AMR), Standard Deviation (SD), and Coefficient of Variation (COV). This study was borne out of the of fact that most investors are putting considerable sums of money into real estate investment without having quantitative information on how much profit to expect or the growth rate of their investment as well as the risks involvement. This is a pointless exercise because an intelligent real estate investor should assess the past performance of similar investments before embarking on the proposed investment. It is therefore necessary to assess the performance of commercial and residential property investment in Enugu urban. The study found that commercial property investment in New Haven outperformed commercial property investment in Ogui Road, while residential property investment in Ogui Road outperformed residential property investment in New Haven. The study therefore concluded be that commercial property investment is more suitable in New Haven, while residential property investment is more suitable in Ogui Road.

VII. Recommendations

Based on the findings of the study, the following recommendations were made:

1. Prospective investors should always seek the advice of registered Estate Surveyors and Valuers to know the type of property to invest in and at what time to invest.
2. Investors who already have properties should at least once in a year ask for a performance measurement of their investment from a registered Estate Surveyor and Valuer so as to know whether or not the objective of their investments is being achieved.
3. Portfolio managers should maintain a periodic portfolio performance analysis of properties from time to time to aid them in selecting or advising investors on investment propositions that promise a maximum improvement of investment returns and reduction of associated risks.
4. Since past performance is an indication of likely future performance, it is recommended that investors seeking to invest on real property within an area should consider the trend in performance of similar investments in the area.

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