Comparative Performance Analysis of Residential Property Investments in Enugu Urban, Enugu State, Nigeria From 2010-2017

Nissi,C.F. Phd ,Diala,A.O. Ph.D & Ezema,C.C.

[1]. *Department of Estate Management,University of Uyo,Uyo,Nigeria.*
[2]. *Department of Estate Management,University of Uyo,Uyo,Nigeria.*
[3]. *Department of Estate Managment, Institute of Management and Technology, Enugu, Nigeria.*
Corresponding Author: Nissi,C.F. Phd

Abstract*:This study examined residential property investments in Enugu urban by conducting a comparativeanalysisoftheinvestmentperformanceofresidentialpropertiesinAchara Layout, New Haven, Ogui New Layout,andOguiRoadfrom2010-2017.40unitsof residential properties in Achara Layout, New Haven, Ogui New Layout,andOguiRoadwere selected for the study. Purposive sampling was used to select 10 units of residential properties in each of the 4 locations. Data on rental and capital returns on these properties for the 8-year periodwereobtainedfrom4EstateSurveying&Valuationfirmsinthestudyarea.Data collected were analyzed using ArithmeticMeanReturn(AMR),StandardDeviation(SD), and Coefficient of Variation (COV) to obtain average returnsandrisksovertheperiod. Findings revealed that residential property investment is most secure at New Haven than at Achara Layout with a return of 7.1%, risk of 2.83% and COV of 39.86%, while it is least secure at Achara Layout with return of 9.4%, risk of 5.29% and COV of 56.28%. However, investment with lower percentage of COV is more secure than that which has higher COV. Performance measurements indicate that there is a positive relationship between risks and returns in the study locations meaning that investment with higher risks provides higher returns. The study concluded that before embarking on real estate investment, an investor should assess thepastperformanceof similar investments because past performance is an indication of future performance. It therefore recommends that prospective residential property investors should seek the advice of Estate Surveyors and Valuers to know the location to invest in and when to invest.*
Keywords: *Comparative Analysis, Performance Measurement, Real Estate Investment, Residential Property Investment Return, Risk.*

I.   Introduction

Real estate investment is the type of investment that is income-producing or that generates income for the owner. 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. Formerly, people considered real estate as a dwelling place, work place, playground or farmland. It was not until in the 1980s that investors started considering real estate as an investment and in the 1990s they started including commercial real estate as part of their overall investment portfolio. Investment in real estate is regarded as a specialized form of investment which involves the highest risk, and so requires the highest skills to provide the highest return in an economic and optimal manner (Nwankwo, Kalu, & Igwe-Kalu, 2018). Nissi,et al(2018)citing Prasana(2005)referred to return as the primary force that sustains investment. 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 property will be used for residential, shopping malls, warehouses, office towers or a combination of any of these purposes (Ryder, 2012). An investor cannot simply assume that any type of property will perform well in a market because a different type is performing well in the same market. From the above, it is of note that rational investors seek to guide the purchasing power of their investment fund.

Rapid urban growth, especially in the last two decades, has put enormous pressure on land in Nigerian cities. The consequences especially for urban development are many. Residential property, a sub-sector of real estate has been described as the second most important need of man after food. In Nigeria, a substantial proportion of all real estate investments are in residential. As one of the basic human needs, residential real estate investments are consistently faced with the types of housing and the place to invest because property

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values are not uniformly distributed in cities. The types of housing include block of flats, bungalow, duplex, detached, semi-detached, etc. Due largely to rising demand and higher yield on property investment, activities in the residential segment of the real estate sector has gone up considerably (Ogunleye, 2015). Residential properties are common and increasingly popular form of investment in Nigeria and all over the world basically because shelter is the second most basic need after food. It protects man against the harsh effects of weather. The performance of the property investment has greatly increased in popularity over recent years and property itself has long fascinated investors Unlike many other investments, such as shares and bonds, property is a tangible asset. Property investment (otherwise called real estate investment) is a medium where bundle of rights in landed properties are being exchanged. It is an avenue where transaction in land and property owners, building users, estate agents and lawyers is created. The property market is the sum total of all the smaller and larger markets operating in different types of interest in land (Ajayi 2010).

Nigerians prefer to invest in real estate than any other investment media. Yet real estate especially residential property remains inadequate and the value keep rising. With the slow growth in real estate investment and the fact that about 50% of the Nigerian population is not yet over 25 years of age, strong demand for real estate is expected to persist in all urban areas. The situation is further compounded with the perceived notion among Nigerian property investors that commercial property performs better than residential property investment. However, investors can no longer base their decision on an intuitive grasp of the market which Ajayi and Fabiyi (1984) considered inadequate for success in property ventures. Property investors are often times uncertain about the outcomes of their decision. Future events are difficult to forecast in precise terms and over time such forecast becomes unreliable. Risks and returns are the variables for determining the performance of real estate investments. Risk is the level of probability that required return measured in terms of capital value and income would be achieved (Ajayi, 1998). In Nigeria, a lot of risks and uncertainties affect real estate development and there is a lack of information or model to predict property values to reduce the effect of such risks and uncertainties. These fluctuations in property values are of great importance to the Estate Surveyor and Valuer since they provide vital information about the capital and rental values of properties. It is also important to determine the trends in the values of residential properties in order to predict future levels which help to show the realizable income from real property investments. Therefore, this study examined the risks and returns in residential real estate investments in Enugu urban from 2010 to 2017.

II. Literature review

Real estate or immovable property is a legal term encompassing land with anything permanently affixed to it. Real estate (immovable property) is synonymous with real property called realty, in contrast with personal property (also called chattel). There are many types of properties available to an investor and a variety of interests in such properties. These interests include freeholds, and short or long term leaseholds (Millington, 1982). Real estate is a special type of good which is physically immobile but which can be transferred due to its attributes of physical durability and bundles of property rights with long time-scale. 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, the object of transfer. Hence, Ring and Dasso (1981) stated 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 accommodation) or as producer goods (e.g. a 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.

The study of performance of real estate investment is very important particularly now that emphasis is on investment performance analysis in many parts of the world (Oyewole, 2013). Moreover, the impact of the ongoing changes in the global and local economies on the performance of real estate investment is serving to highlight the need for its careful consideration in the investment decision making process. Through the monitoring and analysis of an investment's performance, an investor can gain valuable insight into the investment characteristics and behavior of the various assets included in their portfolio (Hargitay & Yu, 1993; Kalu, 2001). By measuring 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 purchasergivesupacapitalsuminexpectationofaflow of financial and non-financial benefits over time. According to

Baum,MackminandNunning (2011), a property investment is an exchange of capital outlay for future benefits. In viewof 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 phasesofrealestateinvestmentincludeacquisition, management, and disposal.

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.

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

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

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

Where:
COV = Coefficient of Variation

III. Methodology

This study is an empirical research which adopts a survey research design approach. The study population comprised residential properties in Enugu urban. The type of residential property under study is 3-bedroom block of 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 eighty (80) residential properties in four (4) locations in Enugu urban namely: Achara Layout, New Haven, Ogui New Layout, and Ogui Road. These areas were chosen because comparable residential properties exist there - they all have residential properties (3-bedroom block of flats on 3 floors). Purposive sampling approach was used to select ten (10) residential properties from each location. The considerations for purposive sampling include similarities in the physical features such as number of bedrooms on each flat and number of flats on each floor. There are 2 No. 3- bedrooms flat on each of the 3 floors. Comparability in the rent passing of these properties was also considered. Data collection involved questionnaires drawn up to solicit information on residential property investment from four (4) registered Estate Surveying and Valuation firms in Enugu urban: one (1) in Achara Layout, one (1) in New Haven, one (1) in Ogui New Layout, 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

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management between 2010 and 2017. Annual returns on the investment were determined by calculating the total returns for each period (TRt). Risk was measured by calculating standard deviation of annual returns from the mean. Data collected were analysed using Arithmetic Mean Return (AMR), Standard 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
2010	0.133	0.119
2011	0.117	0.107
2012	0.207	0.098
2013	0.089	0.160
2014	0.083	0.077
2015	0.077	0.073
2016	0.073	0.071
2017	0.069	0.065
AMR	0.106	0.096

Source: Authors' Filed Survey, 2018.

Table 2: Returns on 3 Bedroom (Residential) on 3 floors from 2010 - 2017

YEAR	TOTAL RETURNS	
	NEW HAVEN	OGUI ROAD
2010	0.132	0.131
2011	0.117	0.112
2012	0.206	0.106
2013	0.088	0.083
2014	0.082	0.080
2015	0.049	0.040
2016	0.033	0.031
2017	0.046	0.039
AMR	0.094	0.078

Source: Authors' Filed Survey, 2018.

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

YEAR	TRt	TRt – AMR	(TRt - AMR)^2
2010	0.132	0.131	0.000729
2011	0.117	0.112	0.000121
2012	0.206	0.106	0.0102
2013	0.088	0.083	0.0003
2014	0.082	0.080	0.000529
2015	0.049	0.040	0.000841
2016	0.033	0.031	0.0011
2017	0.046	0.039	0.0014
TOTAL	0.848		0.0152
	$AMR = \dfrac{0.0152}{8}$ $= 0.106$		$Variance = \dfrac{0.0152}{8}$ $= 0.0019$

Source: Authors' Filed Survey, 2018.

Standard Deviation	=	0.0019	
	=	0.0436	
Coefficient of Variation	=	0.0436	

Table 4: Risks on 3 bedroom Flat (Offer Spaces) at Ogui Road from 2010 – 2017

YEAR	TRt	TRt – AMR	(TRt - AMR)^2
2010	0.119	0.023	0.0005
2011	0.107	0.011	0.0121
2012	0.098	0.002	0.000004
2013	0.160	0.064	0.0041
2014	0.077	0.019	0.0004
2015	0.073	0.023	0.0005
2016	0.071	0.025	0.0006
2017	0.065	0.031	0.0010
TOTAL	0.770		0.0192

			Variance $= \dfrac{0.0192}{8}$ $= 0.0024$

Source: Authors' Filed Survey, 2018.

Standard Deviation   =   0.0024

=   0.049

Coefficient of Variation   = $\dfrac{0.049}{0.096} = 0.5104$

Table 5: 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 $= \dfrac{0.0227}{8}$ $= 0.094$		Variance $= \dfrac{0.0227}{8}$ $= 0.0028$

Source: Authors' Filed Survey, 2018.

Standard Deviation   =   0.0028

=   0.0529

Coefficient of Variation   = $\dfrac{0.0529}{0.094} = 0.5628$

Table 6: 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	0.09156
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

=   0.0346

Coefficient of Variation   = $\dfrac{0.0346}{0.078} = 0.4436$

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

PERFORMANCE	Commercial		Residential	
	Offices		3 Bedroom Flat	
	New Haven	Ogui Road	New Haven	Ogui Road
	0.106	0.096	0.094	0.078
	0.0436	0.049	0.0529	0.0346
	0.4113	0.5104	0.5628	0.4436

Source: Authors' Filed Survey, 2018.

Table 6 is a summary of the AMR, SD, and COV for residential property investment (3 bedroom block of flats on 3 floors) in Achara Layout, New Haven, Ogui New Layout, and Ogui Road. AMR for Achara Layout is 0.071 (7.1%), risk is 0.0283 (2.83%) and COV is 0.3986 (39.86%). Therefore, 39.86% of risk was taken for every unit of return earned. 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. In Ogui New Layout, AMR is 0.078 (7.8%), risk is 0.0361 (3.61%) and COV is 0.4628 (46.28%). Hence, 46.28% of risk was taken for every unit of return earned. While in Ogui Road, AMR is 0.078 (7.8%), risk is 0.0346 (3.46%) and COV is 0.4436 (44.36%). This implies that 44.36% of risk was taken for every unit of return earned.

V. DISCUSSION OF FINDINGS

1. New Haven had the highest return for residential property investments (3-bedroom block of flats on 3 floors) within the study period at 9.4%. Return was lowest in Achara Layout (7.1%), but relatively high in Ogui New Layout and Ogui Road at 7.8%.
2. Risk of investment in residential property was highest (5.29%) in New Haven and lowest inAcharaLayout(2.83%),followedbyOguiRoad(3.46%)andOguiNewLayout (3.61%).
3. Residential property investment in Achara Layout is by far the most secure investment of all with a risk to return rate of 39.86%, followed by in Ogui Road (44.36%).
4. Residential property investment in New Haven is by far the least secure investment with a risk to return rate of 56.28%, followed by Ogui New Layout (46.28%).
5. The performance measures as shown in Table   6   indicate   that   there   is   a   positive relationship between risks and returns. Investment with higher risks provides higher `returns.

The findings of this study shall guide the investment decision of a prospective residential property investor in any given location. The study found that, for a prospective residential property investor in Enugu urban, the choice location is Achara Layout, followed by Ogui Road. Thus, a risk avert investor will prefer to invest in an area which provides high returns at relatively low risk levels such as Achara Layout and Ogui Road, whereas an investor who is a risk taker will be willing to invest in an area with high returns at high levels of risk such as in New Haven and Ogui New Layout (Udobi, Onyejiaka, & Nwozuzu, 2018). The returns and risks for residential property investments in all four locations are significantly volatile (unstable) over the study period which is attributable to the effects of exchange rate volatility on real estate investment in line with Diala, Kalu and Igwe-Kalu (2017). The 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

ThestudyprovidedacomparativeanalysisoftheperformanceofresidentialpropertyinvestmentinEnuguurbanf rom2010-2017byassessingtheperformanceofresidential properties (3-bedroom block of flats on 3 floors) in Achara Layout,NewHaven,OguiNew Layout, and Ogui Road using Arithmetic Mean Return (AMR), Standard Deviation (SD), and Coefficient of Variation (COV) as performance measures. 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 residential property investment in Enugu urban. This study found that residential property investment in New Haven provides the highest return at the highest risk, while that in Achara Layout provides the least return at the lowest risk. The study therefore concluded that residential property investment in Enugu urban is most secure in Achara Layout and least secure in New Haven.

VII.   Recommendations

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

1. Prospective residential property investors should always seek the advice of registered Estate Surveyors and Valuers to know the location to invest in and at what time to invest.
2. Investors who already have residential properties should at least once in a year ask for a performance measurement of their investment by a registered Estate Surveyor and Valuer so as to know whether or not the objective of their investments is being achieved.
3. Since past performance is an indication of future performance, it is recommended that an investor seeking to invest in residential property within an area should consider the trend in performance of similar investments in the area.

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