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ANALYSIS OF PROPERTY INVESTMENT IN AWKA, ANAMBRA STATE, THE RISK AND RELATIONSHIP PERSPECTIVE

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ABSTRACT

It is crystal clear that there increased interest on investment in real estate globally, these interests has resulted in the dire need for access to information on path of investors especially as it concerns real estate and measurement of it its performance across various properties within the property market. This work compared the risks and returns on residential and commercial real estate investment in Awka, Anambra State between the periods of 2008 to 2017. Mean returns, standard deviations and co-variance patter standard tools were used to evaluate the different property investment performance within the study area. Findings of the study indicated that investment in commercial property performed satisfactorily than investment residential property with a mean annual return of 14% as against 12.1%. The performance of commercial property investments as it relates income and capital appreciation/growth was higher within the period of measurement. Antithetically, residential property investment performed more satisfactorily in terms of risk of 4.1% as and 0.34 risk–return as against 10.2% of risk and 0.72 risk-return for commercial property investment within the period under study. The study noted that while both residential and commercial property investments performed creditably well with positive mean returns and risk adjusted returns, commercial property performed well better than residential property investments. It is expected that there should be periodic portfolio performance analysis from time to time to help property portfolio managers or investors in deciding how best to select the investment portfolio that promises a maximum improvement of investment returns and minimizes related risk.

Keywords: Property, Investment, Returns, Risk, Performance and Measurement

1. INTRODUCTION

Principal feature of real estate investment include return on investment and capital appreciation. These are usually measured in terms of holding period and should be periodically assessed to gauge the necessity for retention or disposal of the asset in the portfolio or even to know whether to encourage more investment. Generally, investment decisions are guided by risk characteristics and return trade-off. Therefore the process could be reduced to finding the investment opportunity with the best risk and return ratio. The assets invested may however be real or financial asset. Real estate development is seen as special and attractive because of its low-risk characteristics, the total return derivable not only from present income and but also from its growth potentials in terms of retail income and capital values. A comparison of stock with real estate investment reveals that equity shares features low current yield, capital appreciation, higher risk, fairly high marketability, liquidity and high tax shelter and fair convenience while real estate features moderate current yield and capital appreciation, manageable risk, low marketability. Investment in real property many a time features huge capital outlay, which with the right entrepreneurial resourcefulness can attract much needed or expected return. Due to the uncertainty surrounding the future the benefit may

or may not be realized. The decision to engage in real property investment is among the most difficult and critical decision an investor has to make. This is not only because of the large capital outlay and gestation period but equally once the decision is taking, an error which may result if discovered can hardly be remedied. Since capital outlay is somehow restricted and can be reinvested somewhere, the desirable alternative is the allocation of it between different assets to secure an efficient use that is in tandem with the objective of the investment which is wealth maximization, Bello (2003) reiterated the need to develop a standard against which the assets of the actual performance of an investment.

Over the years, there has been a remarkable development in the theory and practice of real property investment performance measurement as typical by the works of Heterington (1980 and 1984), Hall (1981and 1985), Patrick (1982and 1983).

1.1   AIM OF THE STUDY

The aim of this research work is to analyze the investments in residential property investment and commercial properties in Awka, Anambra state within the period of 2008 to 2017 with a view to providing a platform for guided rational investment making by investors in these sectors.

1.2   OBJECTIVES OF THE STUDY

To achieve the aim of this study, the following objectives are considered;
1.   To provide the rental values on residential and commercial properties in Awka from 2008 to 2017;
2.   To analyse the risk-return profiles of residential and commercial property investments in Awka;
3.   To compare the performance of residential and commercial property investment in Awka, using risk-return profile.

1.3   THE STUDY AREA

Anambra state is one of the 36 States in Nigeria. It is surrounded by state like, Delta, Imo, Enugu and Kogi to the West, South, East and North respectively. Anambra state has a total land mass of 4,416 of KM and situated on the East side of River Niger. The state has 177 communities (towns) and 21 Local Government Areas with 3 senatorial districts. It has Awka as her capital, Onitsha as commercial town and Nnewi, the industrial city as three major towns. Anambra State has a population of 4,182,032 according to 2006 National Population Census which comprises of 2,007,391 males and 2,174,641 females. It is the 9th most populous state in nation. Anambra even though the population is predominantly rural, the state is experiencing rapid urban growth.
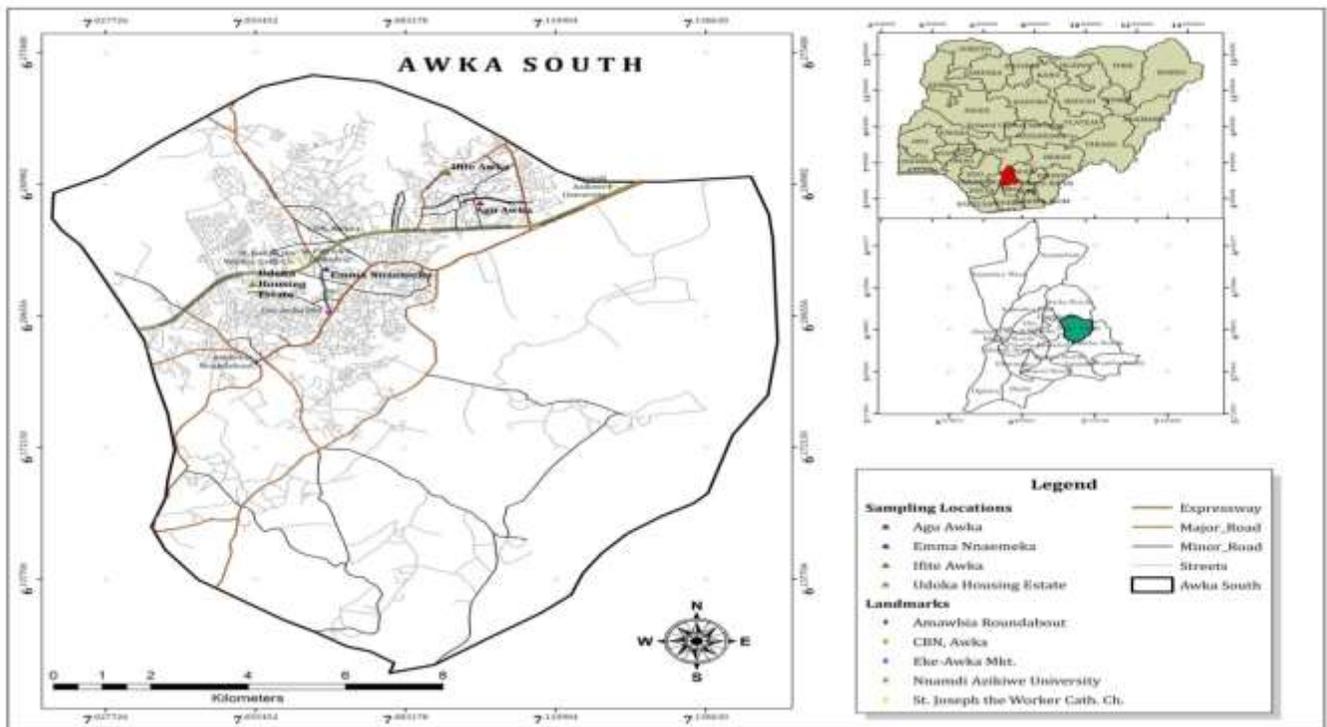

Figure 1: Map of the Study Area

2.   REVIEW OF RELATED LITERATURE

Lan (2011), in his study "Exploring Real Estate" concluded that location is a major determinant in real estate investment. He asserted that a piece of real estate can perform disparately between countries, regions, towns and within the city. This assertion ease arrived at based on Lan (2011) study in which different properties in different locations correlated negatively to indicate risk reduction across different locations. Okafor (2005) carried out similar study between Aba and Port Harcourt where the researcher used 32 properties belonging to U.O.O Properties Ltd. The study period was five years and the classes of property used were Agricultural, Industrial, Residential and Commercial properties. The researcher employed the use simple correlation analysis to measure the degree of association between the property variables. In her findings she stated that portfolio risk can be reduced across the property types in the cities.

Hartzel, Hekman and Miles (1986) analysed a ten year period 1973 – 1983 using a single institutional portfolio of about 70 properties and come with the result that property type diversification was more than regional diversification. Hartzel, Shulman and Wartzbeck (1998) study shows that regional diversification does matter for real estate portfolio in the sense that the eighteen – regional categorization they used provided lower correlations. Grissoms, Kuhle and Walther (1987) used data from Houstin and Austin from 1975 to 1983 to investigate within real estate diversification benefits and concluded that market and property type reduced diversification risk than just property type only across markets.

Wedon and Weave (2010), in their analysis of the return risk level of real estate investment found out that residential real estate outperformed commercial properties in United Kingdom (UK) form 2005 – 2010. They also discovered that there was a positive correlation between risk and return (which indicated high return with high risk), for commercial properties, while on the contrary, residential properties risk and return correlated negatively by significantly lower standard deviation (risk) compared to the commercial market with higher return. The outcomes of the studies carried out by the authors enumerated in this section constituted the basis of the investigation of this study. Hence, the study was carried out to investigate the level of return and risk of residential and commercial properties investment in Awka.

2.1   Risk, Returns and Real Estate Investment.

Return is defined as the true income from a property or appreciation in the value of capital. Hence, there are two components in return i.e. the basic component and the periodic cash flows from the investment, which is either in the form of interest or divided, and the change in the price of the assets, commonly called as capital gain or loss. Essentially yield is most times used in relation to return, it deals with the income component in connection to some price for the asset. The totality of the return of an asset for the holding period relates to all the cash flows receivable by an investor during the designated period of time to the amount of money invested. Lilia Moon (2005).

In connection with returns, we use two terms realized return and expected or predicted return. Realized return/earning is the return that was obtained/earned by the investor, it is outstanding/historic. Expected or anticipated return is the return predicted to be earned from an investment/asset over some period in future. The result generated is called returns. The approach to maximization of wealth is established on the idea of future value of anticipated cash flow from a prospected investment. So cash flow is nothing but the earning generated the investment that we refer to as returns. Since future is uncertain, so returns are associates with some degree of uncertainty. V. Schober (2010).

Risk is the probability of gaining or losing things that are of value. Risk can also be defined as calculated/deliberate interplay with uncertainty. Uncertainty is a probable, unpredicted, refractory outcome and consequence of activity taken in spite of uncertainty. Any human endeavour incurs some risk, but some are much riskier than others. Risk is the elephant in the room when it comes to private real estate offerings. Its open discourse is most a time initiated from the beginning of a proposed investment. While trying to steer clear of investment risk is ideal unless investors want to simply hold treasurer (sometimes called the risk-free rates of return). The actual sense risk is a natural port of any investment both residential and commercial estate is not to be excluded.

So, instead of the pretense that every investment will encounter the "good deal" exemption, it is safer to challenge the assure head on by acknowledging where risk exists, estimate how huge those risks are and ascertaining how an investor can satisfactorily be compensated for assuming that level of risk. The step involves acknowledging the fact that various type of risk that can appear suddenly to affect a real estate investment negatively. Greer and Kolbe (2003) classified risk elements in real estate investment into three according to their origins namely financial risk, insurable risk and business risk.
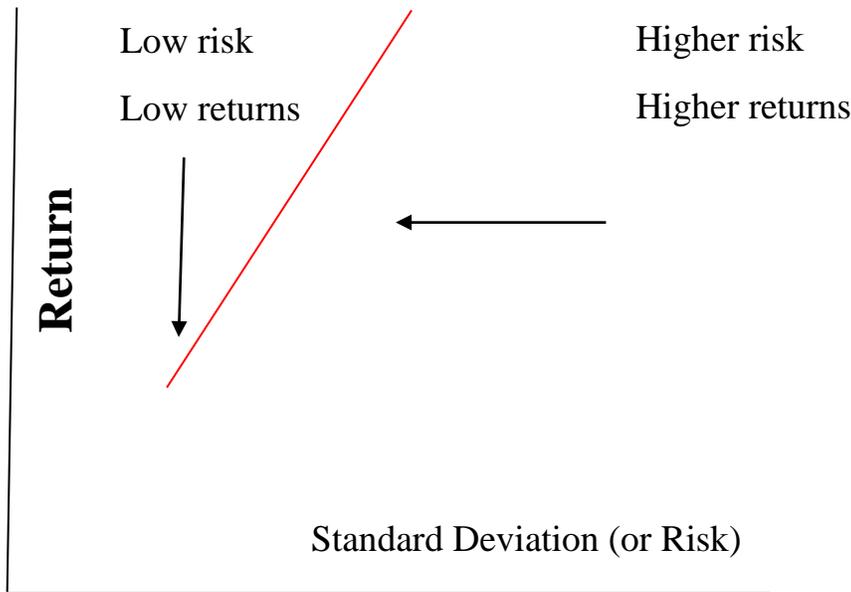
Figure 2: Risk and Returns Relationship

It is worthy to note that higher risk does not and cannot be equal to greater returns. The risk/return trade off in any circumstance only indicates that higher risk levels are associated with the possibly of higher return but nothing in guaranteed. More so, higher risk means greater possible losses on investment - one of the substantial decisions for any investor in selecting the suitable level of risk. Risk forbearance varies depending on the individual investor's ongoing situation and future aims, as well as other factors. Decisions in any investment proposals are influenced by several motives. Some people invest in a business to acquire control and enjoy the prestige associated with it, some invest to display their wealth while most investors are largely steered by the pecuniary intention of earning economic/financial return on their investment (Bruce, 2005). Prasanna (2005) pointed out that return is the prime stimulating force that drives investment. Return is the reward in any investment undertaking. According to Parasanna, since investing is all about returns (after taking care of risk measurement) perceived that (historical) return is essential in assessing how well the investment manager has done.

3.   METHODOLOGY

This study adopted survey research design approach. The survey was carried out by the use of structure questionnaires and interviews to source for data on residential and commercial property investment in Awka for the 2008 to 2017 period.

3.1   Population and Sample Size

The study population comprises of properties being managed by firms of Estate Surveyors and valuers which are actors in property management business in Awka. They are collection of purely residential and purely commercial properties taken from individual private properties since property investments in Awka are mainly done by private. The dominant categories of the properties were selected. In view of this, only18 Estate Surveying and Valuation firms in Awka were considered. Thus, a total number of 18 questionnaires were administered on the target population of Estate firms in the study area. This is helped in sourcing information from these firms on reasonable units of each residential and commercial properties in Awka which analysis of their performance were made.

3.2   Data Presentation And Analysis.

In order to ensure a proper and orderly presentation, sample properties and lustrations still be used to present the data from the questionnaires, mean returns, standard deviation, variance and coefficient of variation will be used to analyze the data collected.
Arithmetic mean return (AMR).

AMR is the summation of the assemblage/gathering of numbers/variables divided by the number of variables. The variable/collection is often a set of results of an experiment or a set of result from a survey.

$$AMR = \frac{(1 + HPR_1) \ + \ (1 + HPR_2) \ + \ (1 + HPR_3) + \ldots + (1 + HPR_n)}{n} \ - \ 1$$

Geometric Mean return (GMR) is the growth/magnification of an investment derived by multiplying n variables and taking the n square root i.e., it is the average return of an investment over period of time, it is mostly used in evaluating the performance of an investment portfolio.

GMRR = GEOMETRIC RATE OF RETURN

$$\sqrt[n]{[(I + PR_1)\,(I + PR_2\,(I + PR_3\,(I + PR_4)\dots(I + PR_n)]} \quad - I$$

Variance is defined as the average of the sum of the square differences for each value on the set.

$$\text{Variance} = \sigma^2 = \sum r_1^2 p_i - \sum (r_1 p_i)^2$$

Where $r_i p_i$ is the holding period return

(c) Standard Deviation: that is square root of variance

$$SD = \sqrt{\sigma^2} = \sqrt{\sum r^2 p_i - \sum (r\,p)^2} \quad i \quad ii$$

(d) The coefficient of variation is the standard deviation which is divided by the expected return.

That is;   CV $= \dfrac{SD}{RP}$ where S = Standard deviation

        RP = Expected return

Standard Deviation is the square root of the variance. S. D represents the risk in investment.

Co-efficient of Variation $= \dfrac{S.D}{RP}$ OR   SD: GMRR

Co-variance: reflects degree to which the variability of returns tend to be.

Standard deviation reflects the degree of risk.

4.   DATA PRESENTATTION DATA PRESENTATION AND ANALYSIS

Analysis of Returns and Risk on Residential in the Study Area.

Table 1: capital values, rental values and rate of return on block of flats in agu awka.

Year	Capital Values (₦) in Millions	Rental Values (₦) in Millions	Rates of Returns %
2008	15	0.8	-
2009	16	0.8	12
2010	17	0.8	11.25
2011	18.5	1.0	14.7
2012	18.5	1.0	8.1
2013	19	1.0	8.1
2014	20	1.0	10.5
2015	22	1.2	16
2016	23.5	1.2	12.2
2017	26	1.4	15.7

Table 2: capital values, rental values and rate of returns on blocks of flats in ifite awka.

Year	Capital Values (₦) in Millions	Rental Values (₦) in Millions	Rates of Returns %
2008	13	0.72	-
2009	14	0.72	13.2
2010	15	0.72	12.2

2011	16.5	0.8	15.3
2012	17	0.8	7.8
2013	18.5	0.8	13.5
2014	20	1.0	13
2015	22	1.0	15
2016	24	1.2	14.5
2017	25	1.2	9.2

Table 3: capital values, rental values and rate of returns on blocks of flat in udoka housing estate.

Year Millions	Capital Values (₦) Millions	Rental Values (₦) in %	Rates of Returns in
2008	23	1.2	-
2009	24	1.2	9.5
2010	24.5	1.2	7.1
2011	26	1,2	11
2012	28	1.4	13.1
2013	28	1.4	5
2014	28.5	1.4	6.7
2015	29	1.6	7.2
2016	30	1.6	8.9
2017	32	1.6	10.2

Table 4: capital values, rental values and rate of returns on tenement buildings in awka

Year	Capital Values (₦) in Millions	Rental Values (₦) in Millions %	Rates of Returns
2008	3	0.18	-
2009	4	0.18	11.8
2010	5	0.21	12.1
2011	6	0.22	12.2
2012	8	0.24	12.4
2013	9	0.28	12.8
2014	10	0.32	13.2
2015	11	0.36	13.6
2016	12	0.36	13.6
2017	13.5	0.42	14.

Table 5: average rate of returns for blocks of flats in awka.

Year	Rental Rate In Agu-Awka	Rate of Returns in Ifite Awka	Rate of Returns in Udoka Housing Estate	Average Rate of Returns
2008	-	-	-	-
2009	12	13.2	9.5	11.5
2010	11.25	12.2	7.1	10.2
2011	14.7	15.3	11	13.7
2012	8.1	7.8	13.4	9.8
2013	8.1	13.5	5	8.9
2014	10.5	13	6.7	10.1

2015	16	15	7.2	12.8
2016	12.2	14.5	8.9	11.9
2017	15.7	9.2	10.2	11.7

Table 6: computation of arithmetic mean rate of return (amrr) and risk on residential properties in awka.

S/N	Period	Rt$_1$(HPR)	Rt$_1$-Rt$_2$	(Rt$_1$-Rt$_2$)^2
0	2008	-	-	-
1	2009	0.1165	-0.1093	0.01196
2	2010	0.111	-0.01	0.0001
3	2011	0.13	0.009	0.000081
4	2012	0.111	-0.001	0.001
5	2013	0.109	-0.012	0.000144
6	2014	0.116	-0.005	0.000025
7	2015	0.136	0.015	0.000225
8	2016	0.128	0.007	0.0000049
9	2017	0.13	0.009	0.000081
Total		**1.0885**		**0.014985**

Expected Rate of Return (Rt$_2$)

= 1.0885 ÷ 9 = 0.121

Arithmetic Mean rate of Return (AMRR)

$$\frac{(1 + HPR_1) + (1 + HPR_2) + (1 + HPR_3) \dots (1 + HHP_9) - 1}{9}$$

AMRR = $\frac{10.0885}{9} - 1$

AMRR = 0.1209 – 1

AMRR = 0.1209   or   12.1%

Geometric Mean Rate of Return (GMRR)

$[(1 + HPR_1) + (1 + HPR_2) + (1 + HPR_3) \dots (1 + HHP_9)^{1/9}]$ - 1

GMRR $(2.7907)^{0.111} - 1$

GMRR = 1.12066 – 1

GMRR = 0.12066

GMRR = 12.1%

Variance = $\frac{\sum (Rt_1 - Rt_2)^2}{9}$

Variance = $\frac{0.014985}{9}$

Variance = 0.00166

Standard Deviation (SD)

$\sqrt{Variance}$

SD = $\sqrt{0.001665}$

S.D = 0.0408

S.D = 4.1%

Coefficient Variation

$= \frac{SD}{GMRR} = \frac{4.1}{12.1}$

Coefficient of variance = 0.3388   OR 0.34

Table 7: analysis returns inherent on commercial properties in study area.

Capital Values, rental values and rates of return on Commercial Blocks in Awka.

Year in Millions	Capital Values (₦) in Millions	Rental Values (₦) in %	Rates of Returns
	Capital Values (₦) in Millions	Rental Values (₦) in million	Rates of Return %
2008	20	1.2	___
2009	21	1.2	11.
2010	22.5	1.2	12.9
2011	24	1.2	12
2012	26	1.4	14.2
2013	28	1.4	13.1
2014	30	1.6	12.8
2015	31	1.6	8.6
2016	33	1.8	12.2
2017	37	2.0	18.2

Table 8: capital values, rental values and rate of returns on shops/ware house in awka.

Year in Millions	Capital Values (₦) in Millions	Rental Values (₦) in %	Rates of Returns
2008	7.2	0.48	__
2009	7.5	0.48	10.8
2010	8	0.48	12.3
2011	9.5	0.64	13
2012	10.5	0.64	17.3
2013	12	0.96	10.5
2014	13	0.96	15.8
2015	14	0.96	14.7
2016	16	0.96	21.1
2017	18	1.4	21.2

Table 9: computation of arithmetic mean rate of return (amrr) and risk on commercial   properties

S/N	Period	Rt_1 (HPR)	$Rt_1 - Rt_2$	$(Rt_1 - Rt_2)^2$
0	2008	___	__	__
1	2009	0.109	- 0.028	0.000784
2	2010	0.126	- 0.011	0.000121
3	2011	0.126	- 0.011	0.000121
4	2012	0.158	0.295	0.08702
5	2013	0.118	-0.019	0.000361
6	2014	0.113	-0.024	0.00057
7	2015	0.117	-0.02	0.0004
8	2016	0.167	0.03	0.0009
9	2017	0.197	0.06	0.0036
Total		**1.231**		**0.09388**

Expected Rate of Return $(Rt_2) \frac{1.231}{9} = 0.137$

Arithmetic Mean Rate of Return (AMRR)

$$\frac{(1 + HPR_1) + (1 + HPR_2) + (1 + HPR_3) \dots (1 + HHP_9)}{9} - 1$$

AMRR $= \frac{10.231}{9} - 1$

AMRR $= 1.13677 - 1$

AMRR $= 0.13677$ OR 13.7%

Geometric Mean Rate of Return (GMMRR)

$[(1 + HPR_1) + (1 + HPR_2) + (1 + HPR_3) \dots (1 + HHP_9)^{1/9}] \quad -1$

GMRR $= (3.2568)^{0.111} - 1$

GMRR $= 1.14017 - 1$

GMRR $= 0.14017$ OR 14%

Therefore Variance $= \sum \dfrac{(Rt_1 - Rt_2)^2}{9}$

Variance $= \dfrac{0.09388}{9}$

Variance $= 0.0104311$

Standard Deviation (SD)

SD $= \sqrt{Variace}$

SD $= \sqrt{0.0104311}$

S.D $= 0.10213$ or 10.2%

Coefficient of Variation $= \dfrac{SD}{GMRR}$

Coefficient of Variation $= \dfrac{10.2}{14}$

Co-variance $= 0.7285$ or 0.73

Table 10: summary statistics of performance measurement for residential and commercial properties in awka, the study area for the period (2008 - 2017) under study.

Basis of Performance	Residential Properties	Commercial Properties
Arithmetic Mean	12.1%	13.7%
Standard Deviation	4.1%	10.2%
Coefficient Variation	0.34%	0.73
Geometric mean	12.1%	14%

5.　DISCUSSION OF FINDINGS

From the analysis, the performance of residential properties in Awka showed the mean return of approximately 12.1% over the 9 years period and a risk of 4.1%. The geometric mean return is approximately 12.1% and a coefficient of variation of 0.34. This is compared to that of the performance of commercial properties which shows an annual mean return of approximately 13.7% for the same nine (9) years period with a risk of approximately 10.2%. The geometric mean return is approximately 14% and a coefficient of variation of 0.72.

The implication of all these is that investment in residential properties in Awka shows annual return of 12.7% using arithmetic method. On the other hand, investment in commercial properties in Awka shows a return of approximately 13.7% using arithmetic mean method and approximately 14% using geometric mean method. This indicates that commercial properties have a higher return than residential properties.

On the basis of risk profile, the investment in residential properties has a lower risk of 4.1% (standard deviation) compared to that of commercial property investment whose risk is 10.2%. This means that commercial property investments are more risky than residential property investment. The application of the coefficient of variation which is also known as risk-to-reward ratio (risk and return profile) provides a relative measure of risk to both classes of property investment. As such, it is used as a relatively simple index of performance. The coefficient or variation of commercial property investments is higher (0.72) compared to that of residential property investment which

is 0.34. This result placed commercial property investment as the most risky of the two classes of property investment media though with a higher return. Therefore, it is concluded that commercial property investments outperformed investment in residential property.

5.1   Conclusion

The study has shown that while both residential and commercial property investment perform well in Awka, commercial properties outperform residential property in terms of return.

However, the risk associated with the investment in commercial property is higher than that of residential property in the study area.

5.2   Recommendations

This work hereby recommend as follows.

a) The investors particularly the public needs serious enlightenment especially as it concerns dire need to employ the services of real estate consultants like estate surveyors and valuers for better professional guidance.

b) It is recommended that the real estate investors be guided by the annual return of their property investment as well as the risk involved to insure proper analysis of their property investment performance.

c) Firms that are into estate surveying and valuations need further enlightenment particularly on the need to keep, update and maintain property investment data bank culture.

d) There should be a periodic portfolio performance analysis from time to time to aid property portfolio managers or investors in selecting investment property types that promise a maximum improvement of investment return and minimize associated risk.

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