



ASSESSMENT OF RISK AND RETURN ON RESIDENTIAL PROPERTY INVESTMENT IN KANO, NIGERIA.

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Abstract:

The paper assess risk and return on residential property market in Kano with a view to examine the trend in returns of residential property investment types and the risk-return in relation to residential property investment. Residential property investment return in Kano has been influenced by several risk factors which affect the property market and the economy, Kano has been chosen for this study because is the commercial city of northern Nigeria and due to the inflow of people the residential housing infrastructure is growing. The study utilized descriptive (standard deviation, viariance, coefficient of variation) and inferential method (ANOVA). The results of descriptive analysis across the five markets showed. The properties sampled are 2Bedroom, 3Bedroom and 4Bedroom which showed that Badawa and Bompai maintained double digit over the other three market. And the variance result revealed that, variation in returns on residential property investment across the market in the selected areas of Kano is statistically significant since the p.value across the market are less than 0.05 level of significance.

Keywords: *Analysis, Risk – Return, Residential, Property Investment, Anova.*

INTRODUCTION

The principal objective of residential real estate investment is return, several issues regarding the general nature of real estate returns focus of real estate market efficiency in Kano, as measured by the distribution of returns and

predictability of real estate returns, determine the impacts of the different elements of risk of residential real estate investment return in the study area and returns of specific types of property. Experience shows that since the creation of Kano State, residential property investments in Kano have continued to increase with no proper assessment of risk and return on residential property investment, which one of the major drivers of economic growth could be said to be an investment in housing.

According to Nwokenkwo (2014), an investment is considered risky because the investor is unsure of the actual returns which he will realize from his investment. The degree of variability of the actual return from the estimated return of investment as well as the possibility of loss of capital reflects the risk elements of investment (Ubom, 2010). This shows that where variable are higher, the risk involved in the investment will also be higher and vice versa. And the study intends to assess the various risk portfolio which affect the returns on residential properties in the study area.

Residential property investment return in Kano has been influenced by several risk factors which affect the property market and the economy. The rise and fall of property investment returns with unpredictable risk factors ranging from lack of payment of rent when due, different policy guideline regarding policy and task factors. This has been the major source of contention among the residential property investors in Kano.

LITERATURE REVIEW

The risk is a common feature of all forms of investment including real estate and fundamental to investment choice. Therefore, any investor who embarks on a project development or acquires a property expects some benefits as future returns. Like any other form of investment, real estate has two principal components: expected return and risk (Francis, 2016). The risk is seen as the level of probability that a required return will be achieved when measured in terms of capital value and income. As an investment, some properties have a high-risk profile while others have a low-risk profile. This depends on the type, nature, location and possibly, the lease term of the property. Risk is therefore perceived as the probability of earning lower income than expected, i.e. as a real or relative loss (measured against expectations).

The use of a standard deviation as a measure of risk arises from the classical approach, represented mainly by the portfolio analysis. A semi-standard deviation assesses the risk of an investor earning a lower return than they expected when making the investment (Cheng, 2005). The analysis of risk in the framework of behavioral finance leads to similar conclusions. The most commonly adopted concept of risk is variation in returns or spread of the distribution, measured by standard deviation. Standard deviation measures the spread of actual returns achieved around the mean, with a greater spread indicating a greater level of risk (Hoesli and MacGregor, 2000) and may be used to measure risk at the investment level, at the fund level, at the portfolio level, and at the individual property level.

It has been observed that investors tend to concentrate on successes rather than failures. When investors give as much attention to downside standard deviations as to upside standard deviations as a measure of risk, they run the risk that their return will be lower than expected. The phenomenon is known as „excessive optimism" (Gajdka, 2013). An important element of the analysis of risk is its variability in time, i.e. changes occurring over the maturity period (Cooper, Priestley, 2009). Because investors tend to form their expectations from the historical rates of return, it is very likely that they also use historical data also to assess risk. Investments in the money market are considered the least risky, and then investments in real estate and investments in the capital market that offer a range of options. This ranking can be found in many studies, the authors of which also stress that investing in real estate is relatively safe (Kucharska-Stasiak, 2006). Real estate investors come across various types of risk in the course of embarking on projects and in the life of the projects. Investment risk may be examined on the basis of the fundamental components or sources of risk and making predictions on how future returns will be affected by each fundamental risk. Other forms of risk are political risk, tenant risk, sector risk, structural risk, taxation risk, planning risk, legal risk, comparative risk, timing risk and holding period risk, risk of unplanned obsolescence as well as management or union risk (Chandra, 2010; and Udoudoh, 2016). The risk in residential property is low, compared with other major risk investment, the equity share market. Housing is a necessity: people must have a dwelling to live in, either as owner-occupier or as a rent-paying tenant. This reduces the possibility of a major downturn in the residential market. Conversely,

investment in equity shares is discretionary. Investors can withdraw from the share market, triggering substantial price falls. The risk of a market downturn is evidenced by major historical price slumps (Bryan, 2001).

METHODOLOGY

The primary data for the study comprises of rents and sales data from registered estate surveying and valuation firms in Kano from 2005-2018, which were collected through structured questionnaires. Systematic random sampling was adopted to select residential properties that have required data for the study, which is rent and sale between 2005 and 2018. The information on residential properties transactions was source from 51 registered estate surveying and valuations firms in Kano. And it 1B/R, 2B/R, 3B/R and 4B/R were sampled in Bompai, Sabon Gari, Badawa, Naibawa and Ungowan uku areas. The total population on rents and sales were 205 and 131 respectively. The sample size for each residential sub-market in Kano was quantitatively determined using the model developed by Frankfort-Nachmias (1996) to arrive at 99 and 71 for rents and sales . the sample size determination is as follows:

$$n = \frac{Z^2 pqN}{e^2(N-1) + Z^2 pq} \quad \text{equation} \quad 1.1$$

Where N = population size

n = sample size

p = 95% confidence level of the target population

q = 1- p

e = Acceptable error(0.05) Z = 1.96(the standard normal deviation at 95% confidence level, P = 90% = 0.9)

the method of analysis used descriptive like, standard deviation, variance, coefficient of variation and inferential method (ANOVA) .

Descriptive analysis: statistics such as total return, standard deviation, variance and coefficient of variation. The use of mean rental growth is to calculate the mean of the rental growth of residential properties.

Annual holding period of return (total return) was determined as follows:

$$\text{Total Return} = \frac{(CV_t - CV_{t-1}) + NI}{CV_{t-1}} \quad 3.1$$

Where CV_t is capital value at end of the year, CV_{t-1} is the capital value beginning of the year and NI represents net income or rental value.

Standard deviation is the square root of variance. It is a measure of variability of a given set of data. It provides a much useable measure of dispersion, particularly when it is used to compare alternative investment opportunities with significantly different expected values,

Standard deviation measure of volatility in property investment. Standard deviation expressed as follows:

$$S.D = \frac{\sqrt{\sum(X_1 - \bar{R})^2}}{N} \quad 3.2$$

Where X_1 is individual observation and \bar{R} is the mean and N is total number of observation.

Coefficient of variation (C.V) was adopted to measure the risk-growth ratio of various property investments across the markets to determine the market with minimum risk at higher average rate of growth. In other word, it measures the relative performance of property investment with respect unit of risk taken in relative to average growth rate. it is given as follows:

$$Cv. = \frac{S.D}{\bar{R}} \quad 3.3$$

Inferential Analysis: inferential analysis featured the use of analysis of variance (ANOVA). This is used to establish the level of variation in rental growth rate.

Analysis of Variance (F – Statistics) It usually aims at finding out whether the explanatory variable X_1 , actually have any significant influence on the dependent variable Y. The test of the overall significant difference in property investment returns and amount collected across the study areas make the test relevant for the study. ANOVA model can be stated thus:

$$\begin{aligned}
 & ANOVA(F - ratio) \\
 & = \left(\left(\frac{\varepsilon(X)^2}{n} - \frac{(\varepsilon X)^2}{N} \right) \div (K - 1) \right) \\
 & \div \left(\left(\varepsilon X^2 - \frac{(\varepsilon X)^2}{N} \right) \div (N - K) \right)
 \end{aligned}$$

RESULTS AND DISCUSSIONS

This section presented the results from analysis of data obtained for the study and subsequently discusses the results accordingly. The results show how the categories of properties have different investment potentials over each other and their risk portfolios.

Table 1.1 Rate of Returns on 2B/R Property Investment in Kano

Year	Badawa	Bompai	Sabon Gari	Naibawa	Unguwa Uku
2005	19.23	12.09	19.05	21.98	2.43
2006	23.19	20.13	11.07	15.63	8.95
2007	15.66	16.11	10.37	20.06	7.99
2008	20.85	20.50	15.09	5.98	3.70
2009	14.59	27.35	10.08	8.99	2.52
2010	25.23	18.73	28.04	20.09	12.28
2011	14.56	27.24	14.03	26.37	6.96
2012	16.53	25.84	19.54	9.84	11.96
2013	27.12	16.59	17.09	8.68	3.34
2014	37.09	18.65	10.02	10.88	4.05
2015	37.40	17.66	16.07	17.45	9.12
2016	22.86	10.45	10.82	9.39	6.85
2017	20.16	11.08	6.24	12.33	10.36
2018	21.04	9.11	9.44	6.12	9.02

Source: field Survey, 2019

The rate of returns on 2B/R property investment in Kano is presented in table 1.1 This showed the annual trends in returns of 2B/R properties over a period (2005-2018). The returns in Badawa and Bompai maintained double digit

returns on 2B/R property investment over the periods. In Sabon Gari, there were double digits in four periods as in 2017 and 2018 at 6.24%, and 9.44% respectively. Naibawa maintained double digit rate of returns in 2005, 2006, 2006, 2010, 2011, 2014, 2015 and 2017 at 21.98%, 15.63%, 20.06%, 20.09%, 26.37%, 10.88%, 17.45% and 12.33% respectively and Unguwa Uku maintained double digit rate of returns in 2010, 2012 and 2017 at 12.28%, 11.96% and 10.36% respectively. This indicates that 2B/R property investment yielded higher returns in Badawa, Bompai and Sabon Gari than Naibawa and Unguwa Uku.

Table 1.2 Rate of Returns on 3B/R Property Investment in Kano

Year	Badawa	Bompai	Sabon Gari	Naibawa	Unguwa Uku
2005	15.24	23.44	12.45	12.04	2.08
2006	20.39	29.60	8.01	9.09	6.04
2007	24.96	32.28	16.72	18.09	7.24
2008	37.60	29.06	27.20	11.09	11.35
2009	12.09	25.26	8.87	20.02	10.32
2010	16.12	34.12	18.28	9.08	8.34
2011	29.97	33.97	18.62	21.33	6.36
2012	33.87	21.87	28.42	10.39	11.17
2013	18.27	20.50	27.24	17.32	6.15
2014	39.42	27.44	19.31	6.37	11.16
2015	20.29	19.45	27.41	15.81	17.21
2016	26.01	14.01	5.19	8.99	16.33
2017	10.29	10.21	9.34	5.35	10.15
2018	15.09	11.02	8.22	6.44	6.77

Source: field Survey, 2019

The rate of returns on 3B/R property investment in Kano is presented in table 1.2 This showed the annual trends in returns of 3B/R properties over a period (2005-2018). The returns in Badawa and Bompai maintained double digit returns on 3B/R property investment over the periods. In Sabon Gari, there were double digits in four periods as in 2016, 2017 and 2018 at 5.19%, 9.34% and 8.22% respectively. Naibawa maintained double digit rate of returns in 2005, 2007, 2008, 2009, 2011, 2012, 2013 and 2015 at 12.04%, 18.09%, 11.09%, 20.02%, 21.33%, 10.39%, 17.32% and 15.18% respectively and Unguwa Uku maintained double digit rate of returns in 2008, 2009, 2012, 2014, 2015, 2016 and 2017 at 11.35%, 10.32% 11.17% and 10.36% respectively. This indicates

that 3B/R property investment yielded higher returns in Badawa, Bompai and Sabon Gari than Naibawa and Unguwa Uku.

Table 1.3 Rate of Returns on 4B/R Property Investment in Kano

Year	Badawa	Bompai	Sabon Gari	Naibawa	Unguwa Uku
2005	23.86	29.19	11.34	7.21	15.34
2006	25.32	20.32	10.09	12.89	11.42
2007	20.27	18.09	6.80	9.65	17.10
2008	27.06	20.05	10.88	15.93	6.76
2009	36.44	26.02	9.03	3.92	2.73
2010	24.09	30.09	9.53	12.80	7.77
2011	29.34	20.79	3.08	13.30	18.37
2012	18.20	25.98	8.27	6.63	7.81
2013	25.54	21.46	3.75	16.42	14.98
2014	20.67	31.45	9.08	4.18	7.84
2015	29.83	22.16	20.75	13.09	15.51
2016	22.65	19.92	13.09	10.07	8.52
2017	20.12	10.08	11.29	9.46	3.37
2018	25.7	35.03	5.88	4.55	5.22

Source: field Survey, 2019

The rate of returns on 4B/R property investment in Kano is presented in table 1.3 This showed the annual trends in returns of 4B/R properties over a period (2005-2018). The returns in Badawa and Bompai maintained double digit returns on 4B/R property investment over the periods. In Sabon Gari, there were double digits in four periods as in 2007, 2009, 2010, 2011, 2013, 2014 and 2018 at 6.80%, 9.03% 9.53%, 3.08%, 8.27%, 3.75%, 9.08% and 5.88% respectively. Naibawa maintained double digit rate of returns in 2005, 2007, 2009, 2012, 2014, 2017 and 2018 at 7.21%, 9.65%, 3.92%, 6.63%, 9.46%, and 4.55% respectively and Unguwa Ukwu maintained double digit rate of returns in 2008, 2009, 2010, 2014, 2016, 2017 and 2018 at 6.76%, 2.73% 7.77% 7.81%, 7.84%, 8.52%, 3.37% and 5.22% respectively. This indicates that 4B/R property investment yielded higher returns in +Badawa, Bompai and Sabon Gari than Naibawa and Unguwa Uku.

Table 1.4 Analysis of Risk and Returns on 2B/R Property Investment

	N	Mean	Std. Deviation	Variance	Coefficient of Variation
Badawa	14	22.5364	7.30291	53.333	0.32
Bompai	14	17.9664	6.01611	36.194	0.33
Sabon Gari	14	14.0679	5.63209	31.720	0.40
Naibawa	14	13.8421	6.41883	41.201	0.46
Ungwa Ukwu	14	7.1093	3.40731	11.610	0.48
Valid N (listwise)	14				

Source: computed from Table 1.1

The result of risk and return analysis of 2B/R residential property investment in selected areas of Kano Metropolis is presented in table 1.4. This table revealed risk content of the investment and the most performed investment market areas. The risk-return also known as coefficient of variation is used to measure the performance of the market. From the analysis, Badawa and Bompai are the most performed markets on the basis of risk return because it offers the least risk per unit of investment at 32% and 33% respectively but on the basis of average return Sabon Gari, Ungwan Ukwu and Naibawa are the most risky market with highest the highest risk per unit of investment and it most undesirable market for prudent investors because it is most volatile market. This revealed that any prudent investors who wish to have a stable 2B/R market and least risky investment should invest in Badawa and Bompai.

Table 1.5 Analysis of Risk and Returns on 3B/R Property Investment

	N	Mean	Std. Deviation	Variance	Coefficient of Variation
Badawa	14	24.8850	4.77427	22.794	0.19
Bompai	14	23.6164	6.45550	41.674	0.27
Sabon	14	9.4900	4.34012	18.837	0.46
Naibawa	14	10.0071	4.23458	17.932	0.42
Ungwa	14	10.1957	5.20653	27.108	0.51
Valid N (listwise)	14				

Source: computed from Table 1.2

The result of risk and return analysis of 3B/R residential property investment in selected areas of Kano Metropolis is presented in table 1.5 This table revealed risk content of the investment and the most performed investment market areas. The risk-return also known as coefficient of variation is used to measure the performance of the market. From the analysis, Badawa and Bompai are the most performed markets on the basis of risk return because it offers the least risk per unit of investment at 19% and 27% respectively but on the basis of average return Sabon Gari, Ungwan Ukwu and Naibawa are the most risky market with highest the highest risk per unit of investment and it most undesirable market for prudent investors because it is most volatile market. This revealed that any prudent investors who wish to have a stable 3B/R market and least risky investment should invest in Badawa and Bompai.

Table 1.6 Analysis of Risk and Returns on 4B/R Property Investment

	N	Mean	Std. Deviation	Variance	Coefficient of Variation
Badawa	14	22.8293	9.40225	88.402	.412
Bompai	14	23.7307	8.01916	64.307	.337
Sabon	14	16.8057	8.31907	69.207	.494
Naibawa	14	11.8864	5.94141	35.300	.501
Ungwa	14	9.3336	4.09299	16.753	.438
Valid N (listwise)	14				

Source: computed from table 1.3

The result of risk and return analysis of 4B/R residential property investment in selected areas of Kano Metropolis is presented in table 1.6 This table revealed risk content of the investment and the most performed investment market areas. The risk-return also known as coefficient of variation is used to measure the performance of the market. From the analysis, only Bompai is the most performed markets on the basis of risk return because it offers the least risk per unit of investment at 33.7% and also performed better on the basis of average returns. Badawa, Sabon Gari, Ungwan Ukwu and Naibawa are the most risky market with the highest risk per unit of investment and it most undesirable market for prudent investors because it is most volatile market. This revealed that any prudent investors who wish to have a stable 4B/R market and least risky investment should invest in Bompai.

Table 1.7 analysis of variance in residential properties in selected areas of Kano Metropolis

Market	Source of Variation	SS	Df	MS	F	P-value	F crit
2B/R	Between Groups	1820.222	4	455.0554	13.07196	.000	2.51304

	Within Groups	2262.751	65	34.81155			
	Total	4082.973	69				
3B/R	Between Groups	2298.929	4	574.7324	10.489	.000	2.51304
	Within Groups	3561.599	65	54.79383			
	Total	5860.528	69				
4B/R	Between Groups	3475.994	4	868.9984	33.85442	.000	2.51304
	Within Groups	1668.465	65	25.66868			
	Total	5144.458	69				

Source: Computed from Table 1:1, Table 1:2 and Table 1:3

The result of variation in returns on residential properties investment presented in Table 1.7 revealed that variation in returns on residential property investment across the markets the selected area of Kano is statistically significant since p-values across the markets are less than 0.05 level of significance. This further indicates that returns on residential property investment are significantly differed across the selected areas. This significant difference is attributed to differences in environmental quality the implication this finding is that the selected areas experiences in environmental quality across market areas.

CONCLUSIONS

The study risk and return of residential property investment across the study areas carried on some selected area of Kano has indicated that while some areas were more volatile and others were stable and steady in term of movement in return over a period. The risk in residential property investment market is higher in some areas and lower in some area, but an area where there is high risk tend to have highest return that are stable and not steady. But the lower risk areas are more stable and steady in returns and the risk per unit of investment is lower. Therefore the implication is that any prudent investor who wishes to invest in residential property investment must invest in area where returns are stable and steady with least risk per unit of residential property investment. the study also discovered that market factors, legal factor, financial factors, physical factors, economic factors, administrative factors, institutional factors and housing policy factors must be addressed to ensure a conducive environment for property investment.

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