

DIVERSIFICATION POTENTIALS OF RESIDENTIAL PROPERTY INVESTMENTS BY LOCAL AREAS IN IBADAN

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Abstract

This study evaluates the performance due to diversification of 3 and 5 bedroom residential property types in different geographic areas in Ibadan with a view to advising prospective risk-averse investors on best paired investment combinations to invest upon. Annual rents and capital values were obtained from the records of estate surveying and valuation firms that are operating in the study areas. This was followed by averaging the annual rental and capital values of the properties and adopting the annual averages in determining the income returns, capital returns and total returns of residential properties on annual basis from 2002 to 2014. The correlation coefficients of several paired returns were determined using Statistical Packages for Social Sciences (SPSS) version 20. Investing on 3-bedroom flats in Eleyele was found to be consistently a viable investment option in all cases of correlating the returns; except in the case of correlating annual returns of 3-bedroom in Eleyele and 5-bedroom in Bodija, where correlation coefficient is significant. Based on the findings; we recommend that income return risk-averse investors should consider paired combinations of 3-bedroom flats in Eleyele as a diversification option. For capital return risk averse investors and total return risk averse investors; combination of 5-bedroom in Bodija and 3-bedroom in Oluyole should be considered as diversification option by these nature of investors.

Keywords: Diversification, geographic, investments, property, residential, returns.

Introduction

Diversification is defined as a way to generate similar returns but at a reduced exposure to risk (Hishamuddin, 2006). In real estate investment practices, diversification has taken variant forms namely diversification by: geographic area, property type, life cycle, management type, ownership structure, and financial arrangement etc., in different parts of the world like: United Kingdom, United States of America, Australia, Nigeria, and amongst others (Olaleye and Aluko, 2007; Falkenbach, 2009; Lee, 2008). However, real estate diversification has traditionally, been commonly studied along two dimensions namely diversification by geographic or economic area as well as by property types. Accordingly, Hoesli, and Lizieri (2007) observed that in practice, dispersion or spread of investment risk entails diversifying asset classes and types within various sectors and regions, separated administratively or geographically. Brown, Li and Lusht (2000); Lee and Stevenson (2005); Adair, McGreal, Webb (2006); and Falkenbach, (2009) in their studies have also demonstrated that the benefits of diversification can be accessed by combining different classes of real estate assets in different geographic areas.

Although many researchers have studied the performance of property portfolios in different geographic areas in several countries, little research has been done in Nigeria. Moreover, given the demand for residential property investments in Nigeria, this study intends to examine the performance and diversification benefits of property type to property investors in Ibadan.

Studies of this nature will help prospective investors in the study areas of Ibadan in appropriately combining residential property investments in order to minimise diversification risk on returns.

In addition, most studies on diversification by geographic areas have concentrated on regional and international levels of diversification (Eichholtz, Hoesli, Mac Gregor, and Nanthakumaran, 1995; Lim, Mcgreal, and Webb, 2006; Rafal and Magdalena, 2007; Falkenbach, 2009). However, it will not be appropriate to carpet the reality that most investors in developing countries like Nigeria are not equipped financially and technically to manage investments at regional and international level. The capital intensiveness of spreading property investments at far distances from each other combined with the reality of financial limitations to meet this requirement could have possibly contributed to Nigerian property investors locating their bundle of investments closer to each other. Consequently, this study considered diversification of property investments within Ibadan to minimise distances; and for the study to align with the reality on ground in Nigerian investment environment. The present study presents how best to diversify subtypes of residential properties in four selected areas in Ibadan, Oyo state namely: Bodija Estate, Oluyole Estate, Akobo and Eleyele areas.

Review of Literature

Many contextual studies have sought the return potentials and risk reduction benefits due to diversification of investments in a portfolio including different multi-asset portfolios, and one-type-asset portfolios. For instance, Englund, Hwang, and Quigley (2002) analyzed the composition of household investment portfolios including: housing, common stocks, stock in real estate holding companies, bonds, and t-bills in Sweden during a 13-year period. The study showed that there was no significant diversification benefit for short holding periods. However, for longer periods, their results indicated that there are large potential gains for households to hedge their investments in housing.

Eichholtz, Koedijk, and De Roon (2002) analyzed the effects of residential property holdings on optimal investment portfolios in United States (US). The study revealed that residential real estate delivers significant diversification benefits relative to investments in stocks and bonds for US investors.

Cocco (2004) studied portfolio choice in the presence of housing and found that investment in housing is important for asset accumulation and portfolio choice among stocks and treasury bills. Lee (2008) examines inter-asset correlation using Australian residential real estate data. Through correlation analysis using data for the period 1996 to 2007, Lee (2008) identifies the risk of return due to diversification (or diversification potential) of Australian residential real estate with equities, bonds and commercial property. The lifeblood and sustenance of every investment is the return they generate. In order to reduce the probability or risk of low return and attendant total portfolio crashes, occasioned by weak diversification potentials; consideration of the idea that eggs should be 'appropriately' spread in different baskets becomes imperative. The purpose of this diversification strategy is commonly to spread or reduce risks characterized by an investment; and to secure returns from investments. Kaiser

and Clayton (2008) have categorized real estate risks into diversifiable risks, partly diversifiable risks and non-diversifiable risks. They observed that the diversifiable risks that can be eliminated are the risks depending on property type, geographic or economic region as well as enterprise risks and style risk.

The Investment Property Forum (IPF) in the United Kingdom conducted a survey of 48 institutional investors (IPF 2014) identified key obstacles for institutional investment in residential rental properties and low-income yield was cited as the most important barrier in the UK context. Compared with the findings of Milligan, Yates, Wiesel, and Pawson, (2013), we found that both Australian and UK institutional investors shared similar views regarding residential investment. In addition, Newell and Fischer (2009) found return correlations of 0.68 between residential REITs and retail REITs and 0.81 between residential REITs and office REITs, suggesting relatively weak diversification potential. Such evidences that weak diversification potentials exist across certain combinations of property types have brought about the views in literatures that appropriate decisions on diversification (or combination) strategies should no longer be intuitively, judgmentally, or experience wise made; but should be based on analytical studies on investments' characteristics. Accordingly, Viezer, (2000) points out property type as the most critical characteristic in real estate diversification as it explained nearly one-third of the differences in real estate returns. The geographical dispersion of an investment produces returns dependent on this property type (Cheng and Roulac 2007).

Study Areas and Research Methods

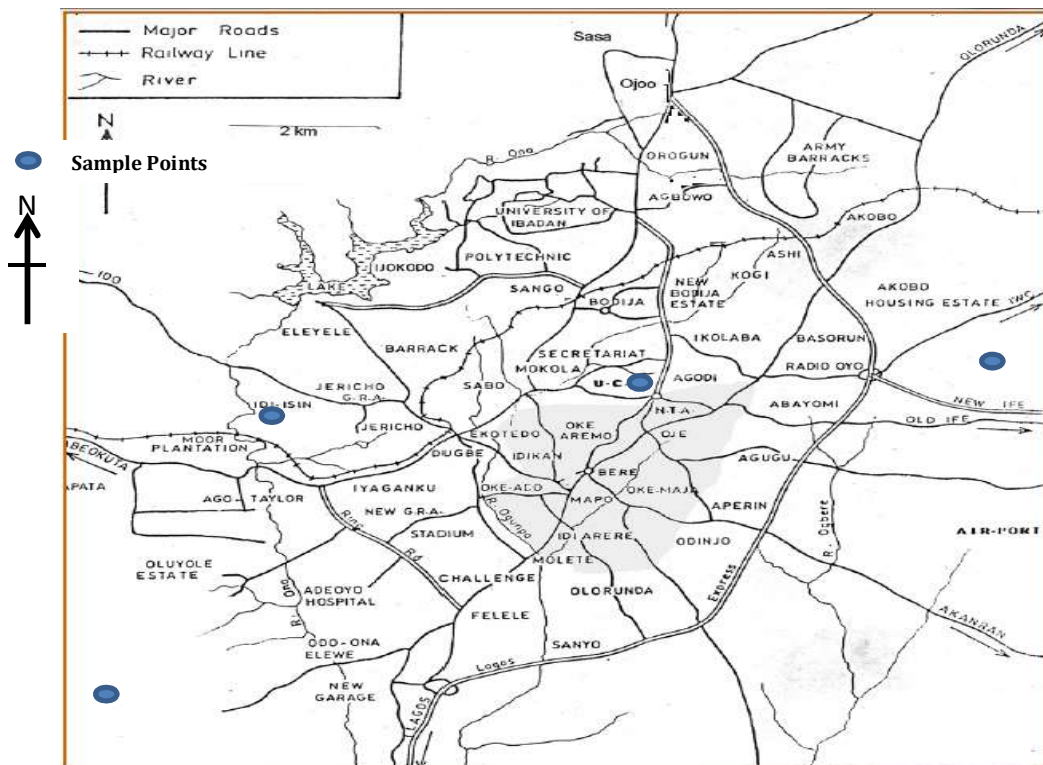


Figure 1: Location of the Study Area and the Four Estates Studied in Ibadan

The areas considered for study in the go before map are:

- Akobo: Akobo is a predominantly residential neighbourhood located in Lagelu L.G.A of Ibadan. It is a low density residential district with both public and private estates. Public estates in Akobo include: Basorun estate, Okebadan estate, and Kolapo Ishola GRA. Private estates include: Alaafia estate, Wisdom estate and recently, Carlton Gate Estate which is a joint venture development with Oyo state government which is intended to create a new government reservation area in Ibadan. The roads that service the location are Idi Ape-Akobo-Olorunda road, Ashi-Bodija road, Iwo road, Ojoo road and Monatan-Iwo road.
- Bodija Estate: Old and new Bodija estates are located in Ibadan North. It is a low density residential district. Bodija Estate is managed by Oyo State Housing Corporation. The estate was initiated by the then Western Region Government. It is an estate of the high class society. It can be accessed from Agodi, Sango, Basorun and Ashi. It is characterized by modern and branded eateries, big supermarkets and many private schools. Most streets, crescents, avenues and close in this neighbourhood are gated and sometimes manned. Infrastructural facilities are in good state of repairs and security consciousness is high. The major road to Bodija estate is a dual carriage from Total Garden all the way to University of Ibadan, Agbowo area.
- Oluyole Estate: This estate is located in Ibadan South West LGA. This is the most popular mixed use Estate in Ibadan. The well-laid out middle and upper class Estate is located at the heart of the city on ring road in Ibadan South West L.G.A. It is a few minutes' drive from the Legendary Liberty Stadium. The Estate has endeared itself to a lot of people because of its central location, fairly good road network, and its mixed land use with the residential zone at the front, and industrial zone at its tail end.
- Eleyele: It is situated in Ibadan North West LGA. Notable landmarks in Eleyele include: Nigeria Police Force headquarters, Fan Milk Plc., Ibadan Polo Club, Oyo State School of Nursing, and Federal Cooperative College. Its proximity to Jericho GRA makes it attractive to people who want to reside close to Dugbe. With the recent dualisation of the Jericho-Eleyele road, property values are expected to start going up in the area. Eleyele can be accessed through Sango-Eleyele road or via Jericho-Eleyele road.

The highlighted features of the study areas especially the low density characteristics suggest high return potentials which can be maximised through appropriate combinations of residential property type and within Ibadan geographic location. It was based on this, that the four areas were selected to determine the return potentials due to diversification. Although there are different types of residential properties in the selected areas, the present study is limited to 3-bedroom flats and 5 bedroom detached houses. The reason for selecting these subtypes is because they appear to be the most common types of accommodation amongst existing categories in the study areas.

The data required to achieve this aim were obtained from estate surveying and valuation firms in Ibadan who have been valuing the considered residential property types in the four considered study areas. According to Nigerian Institution of Estate Surveyors and Valuers (NIESV) 2009 directory, there are 51 estate surveying and valuation firms in Ibadan. Attributable to the manageable size of the population, every member of the population was

considered in the present study and thus, providing good representativeness for generalization. A field survey of all the estate surveying and valuation firms was done and transaction data of net rentals and capital values of 3-bedroom and 5-bedroom properties at the beginning and at the end of each of the years were obtained from firms who have performed transaction(s) on letting, sales, and valuations in the areas. The net annual rents was obtained as well as capital values of each property type at the beginning of, and at the end of each year from the archive records of these estate surveying and valuation firms from 2002 to 2014. This was followed by averaging the net annual rental values and inputting the data with the data on capital values in the following mathematical models to obtain the three components of annual returns:

- $IR_t = \frac{NI_t}{CV_{t-1}} \dots\dots\dots (1)$

Where:

IR_t represents Income return for period t.

NI_t represents Net Income received in period t.

CV_{t-1} represents Capital value at the end of period t-1 .

- $CR_t = \frac{CV_t - CV_{t-1}}{CV_{t-1}} \dots\dots\dots (2)$

Where:

CR_t represents Capital return for period t.

CV_t represents Capital value at the start of measurement period.

CV_{t-1} represents Capital value at the end of period t-1.

$CV_{t-1} - CV_t$ represents Capital appreciation received in period t.

- $TR_t = \frac{NI_t + (CV_t - CV_{t-1})}{CV_{t-1}} \dots\dots\dots (3)$

Where:

TR_t represents Total return.

CV_{t-1} represents Capital value of direct property at the beginning.

CV_t represents Capital value of direct property at the end.

NI_t represents Income of direct property received during the holding period.

$CV_{t-1} - CV_t$ represents Capital appreciation received in period t.

Data Presentation and Analysis

Table 1 shows the correlation of income returns from 3-bedroom flats and 5-bedroom detached houses in different geographic areas in Ibadan. The best diversification by geographic type based on the results in the table is 5-bedroom detached house in Oluyole and Eleyele which showed a low correlation of -.547. This is followed by diversification by geographic areas of 5-bedroom detached house in Akobo and Eleyele with a correlation of -.479. The worst diversification by geographic areas is 3-bedroom flats in Akobo and Oluyole with a highest positive correlation of 0.805, and followed by 3-bedroom flats in Akobo and Bodija with second highest positive correlation of 0.761. Comparing the property types, a better combination of geographic areas came from 5-bedrooms detached house; and the worst combination of geographic areas came from 3-bedrooms flats.

Table 1: Correlation Analysis of Income Returns

3-Bedroom Flats in Different Areas in Ibadan				
Area	AKOBO	BODIJA	OLUYOLE	
AKOBO				
BODIJA	.761**			
OLUYOLE	.805***	.582**		
ELEYELE	.163	.397	-.080	
5-Bedroom Detached House in Different Areas in Ibadan				
	AKOBO	BODIJA	OLUYOLE	
AKOBO				
BODIJA	.681**			
OLUYOLE	.741***	.362		
ELEYELE	-.479	-.369	-.547*	

Source: Field Survey, 2015

***indicates significance at 1 percent

**indicates significance at 5 percent

*indicates significance at 10 percent

Table 2: Correlation Analysis of Income Returns from 3-Bedroom and 5-Bedroom Detached House in Different Areas in Ibadan

	5BR AKOBO	5BR BODIJA	5BR OLUYOLE	5BR ELEYELE
3BR AKOBO (INCOME)	-.595**	-.304	-.644**	.464
3BR BODIJA (INCOME)	-.195	.163	-.463	.397
3BR OLUYOLE (INCOME)	-.474	-.207	-.657**	.554*
3BR ELEYELE (INCOME)	.292	.584**	.086	-.465

Source: Field Survey, 2015

***indicates significance at 1 percent

**indicates significance at 5 percent

*indicates significance at 10 percent

Result from Pearson correlation analysis of income returns from 3-bedroom flats and 5-bedroom detached house is shown in Table 2. A (cross) correlation of income returns of the two residential property subtypes in various geographic areas shows that combining 3-bedroom flats in Eleyele and 5-bedroom detached house in Bodija has the highest positive correlation of .584 and thus is the worst combination. The best mix is the combination of 5-bedroom and 3-bedroom in Oluyole with a correlation of -.657; followed by 3-bedroom flats in Akobo and 5-bedroom detached house in Oluyole with a correlation of -.644.

The best diversification by geographic areas based on the results in the Table 3 is 3-bedroom flats in Bodija and Eleyele which showed a low correlation of -.411. This is followed by diversification by geographic type of 5-bedroom detached house in Bodija and Oluyole with a correlation of -.281. The worst diversification by geographic areas is 5-bedroom detached house in Akobo and Oluyole with almost a perfect positive correlation of 0.990, and followed by 3-bedroom flats in Akobo and Oluyole with second highest positive correlation of 0.888. Comparing the property types, a better combination of geographic areas came from 3-bedrooms flats; and the worst combination of geographic areas came from 5-bedroom detached house.

Table 3: Correlation Analysis of Capital Returns from Different Areas in Ibadan

3-Bedroom Flats			
	AKOBO	BODIJA	OLUYOLE
AKOBO			
BODIJA	.466		
OLUYOLE	.888***	.530*	
ELEYELE	-.102	-.411	-.172
5-Bedroom Detached House			
AKOBO			
BODIJA	-.244		
OLUYOLE	.990***	-.281	
ELEYELE	-.213	.309	-.227

Source: Field Survey, 2015

***indicates significance at 1 percent

*indicates significance at 10 percent

Table 4: Correlation Analysis of Capital Returns from 3-Bedroom Flats and 5-Bedroom Detached House in Different Areas in Ibadan

	5BR AKOBO	5BR BODIJA	5BR OLUYOLE	5BR ELEYELE
3BR AKOBO	.135	-.691**	.152	.042
3BR BODIJA	.023	-.476	.037	.146
3BR OLUYOLE	.216	-.741***	.277	-.109
3BR ELEYELE	.140	.249	.095	.159

Source: Field Survey, 2015

***indicates significance at 1 percent

**indicates significance at 5 percent

Result from Pearson correlation analysis of capital returns from 3-bedroom flats and 5-bedroom detached house is shown in Table 4. A (cross) correlation of income returns of the two residential property subtypes in various geographic areas shows that combining 5-bedroom detached house and 3-bedroom flats in Oluyole has the highest positive correlation of .277 and thus, is the worst combination. The best mix is the combination of 5-bedroom detached house in Bodija and 3-bedroom flats in Oluyole with a correlation of -.741; followed by 3-bedroom flats in Akobo and 5-bedroom detached house in Bodija with a correlation of -.691.

The best diversification by geographic areas based on the results in the Table 5 is the 3-bedroom flats in Bodija and Eleyele which showed a low correlation of -.382. This is followed by of 5-bedroom detached house in Bodija and Oluyole with a correlation of -.259 which is next to the lowest correlation. The worst diversification by geographic areas is 5-bedroom in Akobo and Oluyole with almost a perfect positive correlation of 0.994, and followed by 3-bedroom flats in Akobo and Oluyole with second highest positive correlation of 0.842. Comparing the property types, a better combination of geographic areas came from 3-bedrooms flats; and the worst combination of geographic areas came from 5-bedroom detached house. Similar results

were obtained in the case of capital returns. Also, in the case of income returns, the same combinations of geographic areas for each of the two property subtypes were the worst combinations.

Table 5: Correlation Analysis of Total Returns in Different Areas in Ibadan

For 3-Bedroom Flats			
	AKOBO	BODIJA	OLUYOLE
AKOBO			
BODIJA	.560**		
OLUYOLE	.842***	0.524*	
ELEYELE	-0.108	-0.382	-0.183
For 5-Bedroom Detached House			
AKOBO			
BODIJA	0.286		
OLUYOLE	.994***	0.259	
ELEYELE	-0.181	0.213	-0.196

Source: Field Survey, 2015

***indicates significance at 1 percent

**indicates significance at 5 percent

*indicates significance at 10 percent

Table 6: Correlation Analysis of Total Returns from 3-Bedroom Flats and 5-Bedroom Detached House Properties Different Areas in Ibadan

	5BR AKOBO	5BR BODIJA	5BR OLUYOLE	5BR ELEYELE
3BR AKOBO	0.336	-0.263	0.331	0.100
3BR BODIJA	0.305	-0.029	0.314	0.122
3BR OLUYOLE	0.232	-0.505*	0.271	-0.091
3BR ELEYELE	0.089	0.183	0.059	0.200

Source: Field Survey, 2015

*indicates significance at 10 percent

Result from Pearson correlation analysis of total returns from 3-bedroom flats and 5-bedroom detached house is shown in Table 6. A (cross) correlation of income returns of the two residential property subtypes in various geographic areas shows that combining 5-bedroom detached house and 3-bedroom flats in Akobo has the highest positive correlation of .277 and thus is the worst combination. The best mix is the combination of 5-bedroom detached house in Bodija and 3-bedroom flats in Oluyole with a correlation of -.505; followed by 3-bedroom flats in Akobo and 5-bedroom detached house in Bodija with a correlation of -.263. Inference to be drawn is that the best mix of property investment came from the same geographic areas in the case of total returns and capital returns.

Summary, Conclusion and Recommendation

Investors that are income-return driven face the highest diversification risk on income return if there is diversification by combining 3-bedroom flats in Akobo and Oluyole; while combination

of 5-bedroom detached house in Oluyole and Eleyele; provide lowest diversification risk. Combining 3-bedroom flats in Eleyele and 5-bedroom detached house in Bodija have the highest diversification risk on income return, while the combination of 5-bedroom detached house and 3-bedroom flats in Oluyole provide the lowest diversification risk on income return.

Investors that are capital-return driven face the highest diversification risk on capital return if there is diversification by combining 5-bedroom detached house in Akobo and Oluyole; while combination of 3-bedroom flats in Bodija and Eleyele have lowest diversification risk on capital return. Combining 5-bedroom detached house and 3-bedroom flats in Oluyole have the highest diversification risk on capital return; while the combination of combination of 5-bedroom detached house in Bodija and 3-bedroom flats in Oluyole provide the lowest diversification risk.

Investors that are total-return driven face the highest diversification risk on total return if there is diversification by combining 5-bedroom in Akobo and Oluyole; while combination of 3-bedroom flats in Bodija and Eleyele have lowest diversification risk. Combining 5-bedroom detached house and 3-bedroom flats in Akobo have the highest diversification risk; while the combination of 5-bedroom detached house in Bodija and 3-bedroom in Oluyole provide the lowest diversification risk on total return.

In conclusion, risk of return due to diversification varies across property types and geographic locations in the study areas. This study therefore recommends that income return risk-averse investors should consider paired combinations of 3-bedroom flats in Eleyele as a diversification option. For capital return risk averse investors and total return risk averse investors; combination of 5-bedroom in Bodija and 3-bedroom in Oluyole should be considered as diversification option by these nature of investors.

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