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COMMERCIAL REAL ESTATE MARKET FORECASTS: COMPLEXITIES, METHODOLOGIES AND OPPORTUNITIES IN THE LAGOS MEGA CITY

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Abstract

The forecasting of real estate markets continues to be a topical issue and has attracted several research interests over the decades. This is because the real estate market is a major constituent of both the local and international economies and is not insulated from the swings that characterize the economies. Professional real estate valuers interpret market information as they affect real estate investment and aid the real estate investor in decision making. Therefore, real estate market forecast is an important tool for investment decision making. In Nigeria, however, real estate market forecast and its underlying factors are largely unexplored. This neglect is quite obvious given the data challenges and characteristics of the real estate markets. In view of the foregoing, this preliminary study is an attempt to investigate the complexities inherent in the conduct of commercial real estate market forecasts, methods adopted by Nigerian Estate Surveyors and Valuers in predicting the real estate markets. The study goes further to examine the wider implications of real estate market forecasts to commercial real estate investment in Africa's most populous and largest economy given the trend in commercial real estate investment and opportunities available in the market. The study carried out a questionnaire survey involving Estate Surveyors and Valuers and content analysis of 50 feasibility and viability reports in Lagos megacity, Nigeria's commercial capital. Adopting the Relative Important Index (RII), preliminary results indicated that in spite of the increasing availability of market data due to huge opportunities in the commercial real estate market, the Nigerian professionals are yet to fully incorporate quantitative forecasting models in their pre-investment studies. The paper

recommended that international real estate organizations and investors should collaborate with indigenous researchers, practitioners and the Nigerian real estate professional regulatory bodies in order to develop a sustainable market based forecasting framework.

Keywords: Commercial real estate market, forecasting, Lagos megacity.

Acknowledgement: We would like to thank the anonymous reviewers. Their constructive comments and suggestions have improved the quality of the paper. Any remaining errors and omissions are our responsibility.

INTRODUCTION

Predicting or forecasting future events is not new and humans have relied on various methods throughout history. Even in our daily life we face different kinds of forecasts and predictions. There are numerous examples and all are associated with some kind of predictability or accuracy. Forecasting according to DeLurgio (1998) forms an integral part of many decision making processes. It attempts to decrease the dependence on chance and provide some way to predict future events. In identifying the importance in the decision process, it is necessary to understand that forecasts do make assumptions on historical and future events. Real estate market forecast studies have become an emerging area due largely to changes in the entire market framework. Real estate being a major constituent of the business environment which is prone to risks is not isolated from the swings that characterize the business world generally. Real estate values which are outcome of market valuation by real estate professionals provide an insight into how the real estate market information is interpreted by the valuer, who is perceived to have full and perfect information about the state of the market. With the information at the disposal of the valuer, a prediction or forecast of market prices is normally made through real estate rent and price models. Several studies have been carried out in the developed economies especially Europe and United States of America adopting different models to forecast the real estate market (Brooks & Tsolacos 2000; D'Archy, McGrough & Tsolacos, 1999; McGrough & Tsolacos, 1995; Stevenson & McGrath 2003). These underscore the importance of understanding the dynamics of the real estate market forecasting in order to improve real estate investment decision making. In Africa and Nigeria in particular, such studies are scarce due largely to a perceived lack of real estate market data on the one part and limited training and knowledge base of the professionals as attested by Babawale (2006) on the other part. The importance of real estate as an asset class cannot be over stated. Ghysels, Plazzi, Torous and Valkanov (2012) state that the total real estate value in the US at the end of 2011 was about $25 trillion which includes over $16 trillion in residential properties alone, very close to about $18 trillion value of US stock market capitalization. The Nigerian real estate sector has also been growing at a significant rate especially between 1999 and 2008 due to the country's return to democratic governance that ushered in relative political stability. According to EFInA and FinMark Trust (2010), the sector was valued at N1.06 trillion ($7 billion) as at the end of 2008 representing about 2% contribution to GDP and 3.27% in 2009 and currently valued at N6.4 trillion ($41.2 billion) (Thisday, 2014). The average growth rate in the sector between 2000 and 2005 was 10.7%. Like other economies in the world, growth in Nigeria's GDP is directly linked to growth in real estate activity. For every unit of increase in GDP, 75% of that unit is directly linked to real estate and housing related expenditure. Growth in this sector is largely driven by the entry and expansion of new and local multinational companies in sectors such as telecommunications, oil and gas, tourism and hospitality, and finance. This increase in economic activity led to an increase in demand and supply for commercial and residential real estate development particularly in the key cities of Abuja, Lagos and Port Harcourt. Also, as a result of the increased occupancy of property in Nigeria by these companies and their staff, awareness and demand for high quality properties grew. Most private developers in Nigeria have now focused on high-end residential and commercial developments as a result of this perception. The capital values of real estate assets in Nigeria have, over the past three years, experienced a boom as prices have in some cases doubled especially around the key commercial areas. However, there was a downward trend during the 2008/2009 period due to the banking crisis, non-performing and margin loans accessed by stock speculators and oil and gas marketers in the country occasioned by the economic meltdown and this has manifested in declining property prices especially the high profile neighbourhoods of the Lagos market and lull in the property market activities. This recent history suggests that fluctuations in real estate prices, whether in bubble or burst mode, have the potential to buoy up or wreak havoc on the financial sector and the rest of the economy. Some of that impact is due to leverage and the fact that real estate is the easiest asset to borrow against, especially from a household's perspective. Apart from the bubble effect of the real estate market, real estate has been known to constitute a large percentage of the consumption of a household. Property market forecasts play a significant role in the accuracy of valuation and the investment decisions of property investors as well as decisions associated with assets allocations, formulating property fund strategies and individual property acquisitions in the portfolio context (Mitchell & McNamara, 1997) and is very critical to estimating office demand (MacFarlane & Moon, 2000). Other importance of property market forecasts includes assisting space users make decisions about space requirements and anticipated future rent liabilities. Individual commercial property owners use forecast to underpin decisions on the timing of major capital expenditure on assets (Roulac, 1996). In addition, as Krystalogianni, Matysiak and Tsolacos, (2004) noted, forecast of the various constituents of total returns in the different sectors of commercial activities is very vital in decisions of real estate allocation by investors. Financiers use property forecasts to set their lending criteria and to assist in the risk assess-

ments of individual properties and project requiring debt funding (Kummerow, 1997). Property market forecasts therefore play a crucial role in the modern valuation methodologies and consequently, flawed forecast can have adverse impacts on the valuations. Intense competition, rapid changes in markets be it property or otherwise and the dynamism in investment finance syndication have increased the need for forecast information on commercial real estate investment. Variables, such as construction costs, future real estate returns (rental and capital values), demographic changes, regulatory restrictions, demand and supply factors among others have been recognized as major factors considered in real estate forecasts by professionals in real estate markets. Furthermore, there are established models adopted in real estate forecasting all over the world. In Nigeria, however, real estate market forecast and its underlying factors are largely unexplored. In the current investment climate, it is no longer acceptable to rely on naïve or rule of the thumb procedures in predicting real estate returns when undertaking real estate valuations, be it feasibility and viability studies or other market based real estate valuations. Babawale (2006) has identified skill, experience and judgment of the valuer among the factors that lead to inaccuracy in valuations and these also has far reaching role to play in real estate market forecasts. In another study by Olaleye, Aluko and Ajayi (2007) and Olaleye (2008) naive diversification were the preferred strategies in the Nigerian property market and this was attributed to inadequate knowledge base of the real estate professionals in an era where the drive towards the integration of quantitative analysis into property investments across the whole spectrum of property investment analysis, property portfolio management, performance evaluation and diversification has increased. These present obvious problems that can be addressed by appropriate research. This study will provide answers to the following research questions: What is the perception and understanding of Nigerian Estate Surveyors and Valuers about real estate forecasting? What are the implications of commercial real estate market forecasting as a tool for decision making in feasibility and viability appraisal? What type of forecasts and variables can the current data on commercial real estate accommodate? How many of the forecasting techniques available are Nigerian Estate Surveyors and Valuers familiar with and utilize in commercial real estate investment feasibility and viability appraisals? Thus, real estate market forecast has become an important tool for investment decision making. In view of the foregoing, this study will unearth the current level of knowledge of commercial market forecasting by Nigerian professionals, the use and application of market forecasts variables and models in commercial property investment appraisal by Nigerian Estate Surveyors and Valuers and goes further to examine the implications of property market forecasts to commercial real estate feasibility and viability appraisal in Nigeria. This paper is a preliminary study into commercial real estate forecasting in Nigeria. As such, the results emanating from this study will provide a basis for further investigation as well as spur research interests by investors, academics and practitioners in real estate investment.

2. REAL ESTATE MARKET FORECAST: TECHNIQUES AND METHODS

Real estate forecasting studies originated from the developed economies of the US and UK. Attention is gradually shifting to the Asian Pacific markets especially during the last decade due largely to improved real estate market transparency and data availability. Commercial real estate market forecast researches over the years have examined majorly office spaces. Such studies have looked at the methodologies of office market forecasts, forecasting demand for office spaces, predicting the supply of office spaces, micro economic variables involving office spaces and the impact of valuation on commercial real estate market forecast. Therefore, real estate market forecasting will continue to receive attention in many years to come due to changes in the economic structure of the global economy. According to DeLurgio (1998), the most common feature of forecasting is the analysis of past patterns, past relationship and how these patterns and relationships will affect the future. Studies carried out in Australia by Rowland and Kish (2000) were of the view that though some degrees of uncertainty exist in forecasting, there has been a continuous improvement, advancement and sophistication on both the qualitative and quantitative procedures used in real estate forecasting. Studies on the procedures and methods in real estate forecasting are many including what actually the forecasts cover. While Galimore and McAllister (2004) as well as Newell (2006) examined the role of judgment in forecasting real estate investment, Matysiak and Tsolasco (2003) evaluated econometrics and structural modeling and other studies for example Stevenson and McGrath (2003) compared forecasting procedures and methods in real estate. Forecasting accuracy studies especially by Newell (2006) and Newell and Macfarlane (2006) in the Pacific Rim also confirm the depth of real estate forecasting literature. However, as noted by Mitchell and McNamara, (1997) the advancement and sophistication in real estate forecasting procedures and methodologies noyhwithstanding, there are differences in real estate forecasts and actual outcome which could be attributed to the quality of data used, the statistical procedures and quantitative models adopted. Makridakis, Wheelwright and Hyndman, (1998) submit that there is no single forecasting system that always provides the best all-purpose result. Individual circumstances and the data available determine whichever method that best provides a reliable and accurate forecast. Thus, regression methodology has been identified as the most commonly used forecasting model for real estate. The Single Equation Model and the Multi-Equation Model are the two types of regression models commonly used in commercial real estate forecasting studies (Ng & Higgins 2007). The single equation model uses rent as a dependent variable and a function of other independent variables in linear form and used to predict the trend of future rental values (see Stevenson & McGarth, 2003). The single equation model is the commonly used models in forecasting studies (Ng & Higgins, 2007). According to McGough and Tsolacos (1999), the multi equation model as the name implies uses multiple equations to effectively identify and incorporate the complexities

and changes that occur in the property market. The regression methodology can be used in different forms. For example, in the UK, Krystalogianni, Matysiak and Tsolacos, (2004) applied a probit regression model using the 25 leading economic independent variables to produce a forecast of real estate capital values. Lizieri (2009) provides a concise and clear illustration (Figure 1) of forecasting techniques and methods available and applicable to real estate.

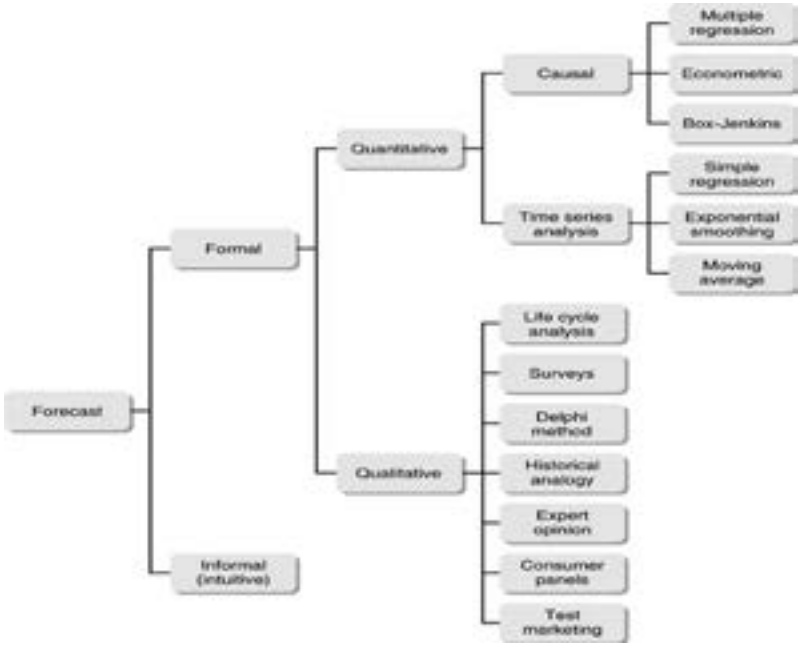

Figure 1. Forecasting techniques and methods. Source: Lizieri (2009)

2.1 FORECASTING VARIABLES

Forecasting studies examine the behaviour of factors or variables or indicators that determine the state of the market. Most studies have identified several variables considered in forecasting real estate although some of these variables have different degrees of effect on the different areas of real estate investment. In line with the work of Ge (2009), commercial real estate forecasting variables can be grouped into three. The first group comprises of macroeconomic variables and external factors, such as gross domestic product, consumer price index, interest rate, service sector employment and unemployment rate; the second group is made up of commercial property demand variables, such as unemployment rate, demographic factors, mortgage claim and percentage of household income; and the last group consists of commercial property supply variables, such as building permit issued, land availability for commercial property and production costs. In terms of forecasting the Nigerian commercial real estate market, it is necessary that a fourth group of performance variables that can describe the performance of real estate investment be added and these are

Income return, net operating income, yields, capital growth and total returns. According to Ng and Higgins (2007), studies carried out in Europe, United States and Pacific Rim identified peculiar variables adopted in these regions although there are variables common in all the continents. In Europe, variables such as office floor stock, house price index, vacancy rate, past rents, new construction, new office completion, new construction orders are considered mainly in commercial real estate market forecast while in the US research favours variables including vacancy rates, operating expenses, office floor stock, property tax, vacancy rate, level of amenities, physical building attribute, absorption rate, office completion and vacancy changes. Ng and Higgins (2007) further reveal that the Pacific Rim studies identified vacancy rate, replacement cost, building depreciation rate, available floor stock and vacancy rate as the variables mostly utilized.

2.2 UNDER-EXPLORATION OF REAL ESTATE MARKET FORECAST AND COMPLEXITIES IN LAGOS, NIGERIA

The depth of property market forecasting research in Nigeria is still shallow and presently at the pioneering level. This is due to obvious challenges that include market transparency and data unavailability issues coupled with the research interest of researchers and academics. Confirming this, Dugeri (2008:70) states that "we have yet to establish any form of property index, or even compile return data on property investment" Dugeri (2011) while examining the maturity of the Nigerian property market, confirms that the market rates very low in transparency, capital liquidity, availability and dissemination of market information, and performance of market professionals including the challenge of non-standardization of market process. The few recent studies on real estate market forecast conducted in Lagos include Oni (2009) and Oni, Bello and Oni (2012). The majority of other studies focus on various other aspects of valuation and property investment not specifically on real estate forecasting. This underscores the importance of this present study as Oni (2009:4) rightly observes that

> In feasibility and viability appraisal of commercial property projects, expected values are decided by intuition with no accurate predictions of such values. It is in this regard that the study has become significant. A model that may assist in predicting trend of commercial property values in Ikeja will be a great contribution to knowledge and spur further research in this direction.

In Oni, Bello and Oni (2012), models for forecasting demand and supply of banking spaces in the Ikeja property market were developed for the first time but it is

doubtful if these models have been tested for their validity and practicability. By this demonstration, it is possible to model the Lagos commercial property markets by developing and applying peculiar local independent variables identified earlier in this study. It is worthy of note that the Lagos property markets have experienced its own peculiar swings in economic and real estate cycles. In the light of the observation of Krystalogianni, Matysiak and Tsolacos (2004) that since there is a close relationship between the economy and the commercial real estate market, economic variables that can successfully anticipate trends in the economy may prove useful in future commercial real estate performance evaluation. The Nigeria real estate market is like other real estate markets has its peculiar challenges. Apart from the limited availability of transactions data on real estate, the complex nature of real estate such as the physical state of the property and the sub market, uniqueness, size and age of holding, inflation rate, high cost of building materials, interest rate charged by banks and lending institutions, issues in land accessibility and cumbersome administration system, are among the factors which investors and professionals usually grappled with. Market research and analysis are essential pre-requisite in forecasting for the execution of any sound investment appraisal. Forecasting is essentially a future projection of events based on the analysis of collected and collated information. This involves delving into the past, examining the present and projecting to the future. Forecasts can be short-run, middle-run or long-run. However, the duration and coverage of the forecast depends on the nature and quality of information available. Thus, in Nigeria the key-variables that directly affect real-estate investment that will enable any meaningful forecast include the yield , rental and capital values, vacancy rates, current stock of real estate, costs involved in the construction of real estate and other economic variables. The complexities involved in the extraction of these variables present enormous challenges to the Nigerian professionals. According to Umeh (1977) the most difficult aspect of forecasting concerns the magnitude and distribution of costs and benefits over time or during the life of a proposed project especially in feasibility and viability appraisals. Umeh (1977) and Ogbuefi (2011) agree that in a volatile and unstable economy especially in developing economies such as Nigeria, it is difficult and dangerous to predict the future especially over a period and real estate investment market predictions are difficult to make accurately. These complexities and challenges notwithstanding, Ogbuefi admits that in recent times, limited research is being executed on rental growth trends, movement of building cost, tender prices and property market analysts without much input from academics. Therefore, industry stakeholders and practitioners should make more data available for consolidating commercial real estate forecast in Nigeria. The foregoing provides evidence that a lot more studies are required to focus specifically on the changing real estate investment landscape occasioned by economic socio-economic factors and how these will impact on the commercial real estate in the future by using quantitative models for these predictions. These responsibilities fall on the Nigerian real estate academics and professionals.

2.3 REAL ESTATE FORECASTING OPPORTUNITIES IN THE LAGOS COMMERCIAL REAL ESTATE MARKET

A survey of the commercial office market reveals that the market is becoming more competitive with the entry of new investors and new products and expansion plans by existing international brands that will result in the addition of about 150,000 square metres of office space in the next 3 years. These present opportunities for researchers, analysts and investors to initiate performance and forecasting studies of the market. These include:

- Ikeja City Mall, comprising 27,000 square metres of gross built area, 23,000 square meters of space and accommodating about 100 shops, including Shoprite's store of over 4,400 square metres, valued at over N16 billion that was commissioned in 2011.
- UACN Property Development Company's , (UPDC) on-going development of 10,000 square meters Festival Mall in Festac which is nearing completion and to be commissioned in the last quarter of 2014.
- Novare Private Partners and RMB Westport investments of 22,000 square metres Lekki Mall and 14,000 square metres Osapa Convenience Centre respectively located on the Lekki-Epe axis to be completed in November 2015.
- Persianas Group's Palms shopping mall of 40,000 square metres of additional commercial retail space to be delivered in 2016.
- International Finance Corporation (IFC) and Artee Group's expression of investment interest in the commercial real estate sector valued at $124 million through the Persianas Group and Artee Group's (owners of SPAR and Park & Shop brand), plan of opening about 100 shopping outlets across Nigeria within the next 6 years.
- Grade A Commercial real estate developments like the Mansard Place, Total Building and KPMG Building, the Actis 14-floor Heritage Place (a $65 million structured debt finance project which comprises eight-floors of office space of about 450 square meters each and five-floors of parking space all totalling about 15,730 square meters of office accommodation, and over 13,000 square metres of parking space for 350 cars); the 24-floor Eko Pearl Tower all at different levels of completion.

Similarly, foreign investors in the hospitality industry are currently investing in this sector with the addition of over 40,000 new rooms in 207 hotels across the country. Since 2012, new hotels have been opened in Lagos and these include Four Points by Sheraton Lagos; Ibis Lagos Airport, and Radisson Blu Anchorage Hotel. Among other international brands investing in Lagos are the Carlson Rezidor Hotel Group, Hilton Worldwide, InterContinental Hotel Group, Starwood Hotels & Resorts Worldwide, Hyatt Hotels Corporation and Protea.

- The commissioning of Milan Group's N30 billion Intercontinental hotel tow-

er by the Lagos State Governor. This 23-storey hotel located on Victoria Island has 352-rooms and partly financed by Skye and Wema banks.

- The planned addition of a 112 rooms and suites Swiss International branded hotels, the Swiss International D'Palms Lagos Airport, located in Ajao Estate, easily accessible through the popular Murtala Mohammed International Airport on January 1, 2015.
- The about-to-be completed Starwood's Luxury Collection Hotel Brand under construction in Ikoyi, Lagos, valued at over $350 million. This twin tower-hotel construction comprises 15-storey buildings of about 340 rooms, mixed resort and 125 prime apartments.
- The announcement of a proposed construction of Transcorp Hilton Lagos, a full service, 350-room hotel on Glover Road, Ikoyi a prime location in Lagos, by Transnational Corporation of Nigeria Plc (Transcorp), a publicly quoted conglomerate. The development will be jointly owned by Heirs Holdings, a pan-African proprietary investment company.
- Other infrastructure investments especially in the oil and gas, aviation and maritime industries that will impact heavily on the real estate market that requires forecasting studies include:
- Dangote Group's investment of $9 billion in the establishment of oil refinery/petrochemical company in the Lekki Free Trade Zone on over 16,000 hectares of land. The company when completed will produce about 400,000 barrel per day which is equal to about 460,000 combined capacity of all the existing Federal Government owned refineries.
- Lagos State Government's approval of about 250 hectares of land for the establishment of 100,000 barrels per day Mid Oil Refining and Petrochemical Company in Ejirin, Ikorodu Area.
- South Atlantic Petrochemical Company's proposal for another refinery in the Badagry area with a capacity of 100,000 barrels per day.
- The Federal Government's approval of the development of the Lekki Deep Seaport in Lagos at an estimated cost of $1.354bn. A Public Private Partnership project, the Lekki Deep Seaport is expected to be Nigeria's first deep seaport since independence.
- Another proposed airport to compliment the Murtala Mohammed Airport on a 4,500 hectares land area with a Passenger Traffic projection of 3.2 million per Annum comprising three runways (in the first phase to be completed within 4 years after signing the concession agreement).

3. DATA AND METHODOLOGY

The study was carried out in Lagos Mega City, Lagos State, South-West Nigeria. This study adopted a mixed approach by combining both primary and secondary data. Primary data collection involved the use of a survey questionnaire which was administered to Estate Surveying and Valuation firms in the metropolis which comprise the population of study and secondary data comprise the content analysis of 50 commercial feasibility and viability reports obtained from various Estate Surveying and Valuation firms in the metropolis. The adoption of questionnaire survey is in line with Mentzer and Kahn (1995) who studied forecasting techniques familiarity, satisfaction, usage, and application of forecasting executives in 478 US companies. The analysis of the content of the feasibility and viability report was carried out under 5 criteria according to Ladki, et al (2009). The metropolis was stratified into six economic nuclei of Ikoyi, Victoria Island, Ikeja business districts, Apapa, Surulere and Lagos Island based on the level of active property markets. Stratified sampling has been used in similar previous studies such as Adegoke and Aluko, 2007; Ibiyemi and Tella, 2013; Iroham and Ogunba, 2008; and Ogunba and Ajayi 1998. Information from the Directory of the Nigerian Institution of Estate Surveyors and Valuers (NIESV) one of the two real estate regulatory bodies in Nigeria shows that there are a total of 779 registered firms and out of the 779 registered firms of Estate Surveyors and Valuers, 53% of them are located within the metropolis. This gives a listed population of 413 Estate Surveying and valuation firms for this study while the sample frame is the accessible 250 firms (Trochim, 2006) through a reconnaissance survey. In order to determine the appropriate sample size (n), from the accessible population a sampling error (margin of error) of 5% was adopted and the statistical formula of Yamane's 1967 was used. The formula is expressed as:

N1 + N ☐ 2 Where n represents sample size, N represents population size, and e represents sampling error. Substituting values in the model the sample size is derived as follows:

$n = 250/ (1 + (250 \times 0.05^2)$

n = 250/1.625, ń = 154 respondents

This sample size of 154 respondents which is 62% of the sample frame (accessible population) agrees with Nwana (1981) which recommended minimum of 40% of the total population when the population is in few hundreds. This sample size also agrees with the model of Bartlett, Kotrlik and Higgins (2001). A total of 100 questionnaires from the random sample of 154 respondents were used for further analysis, representing a 65% response rate. The response rate of Nigerian Estate Surveyors and Valuers is gradually increasing given that Dugeri (2011) had observed the reluctance of Estate Surveyors and Valuers to participate in research surveys. The questionnaire used to collect data was structured in ordinal scale (Likert type). Percentages, frequency counts, mean scores and the relative importance indices (RII) were utilized in analysing data. RII helps in getting a measure of the response of the respondents. In adopting this measure, the factors are rated against a scale that assists in assessing the significance of each

factor. The scale is then transformed into an index otherwise known as Relative Importance Index (RII) for each factor to determine the ranks of the different factors. The Relative Importance Index (RII) is expressed as:

RII = $\sum W \square A \times N$

Where $\sum W$ = Sum of weighting given to each factor by the various respondents

A = Highest weight

N = Total number of respondents.

The use of Relative Importance Indices (RII) in this study agrees with Oloyede (2005), Amidu (2006) and Adegoke (2006) whose earlier studies used the indices.

3.1 COMMERCIAL REAL ESTATE MARKET FORECASTING: THE LAGOS MEGA CITY AS A CASE STUDY

A Mega-city is a term used to define a metropolitan area that has at least 10 million inhabitants. In the context of this paper, megacities are described in a positive light because they are referred to by World Bank (2000) as the engines of socio-economic growth and development. Also, opportunities in the form of challenges are created for investors both foreign and local though there could be inherent risk associated with megacities (Hossain, 2006; Zeiderman, 2008). According to Packer (2006), the explosive nature and predictive pattern of the growth of Lagos has made it an ideal example of the megacity. Zeiderman (2008) has noted that the wealth and fortunes of the economy of every nation lies on its ability to attract foreign investment inflow in sectors such as tourism, services, infrastructure, manufacturing, real estate, and information technology. Lagos mega city therefore presents enormous opportunities for investment. According to Babawale and Omirin (2011) Lagos metropolis makes up about 37% of the land mass of the state which is the commercial capital of Nigeria and one of the 36 states that make up the Federation. Lagos State is projected to become the third largest city in the world by the year 2015 with a projected population of 25 million people thereby giving Lagos State a mega city status. Babawale and Omirin further posit that the megacity comprises about 85% of the population resulting in an average population density of 20,000 persons per square kilometre with current population estimated at 17 million. The stock of investment property in the mega city is the highest, most diverse, active in terms of market activities and has the highest values. The megacity represents the hub of the Nigerian property market and a large portfolio of real estate investments. Ibiyemi and Tella (2013) reaffirmed that Lagos megacity maintains the highest concentration of commercial activities because majority of the financial services institutions, conglomerates and multinational companies in all the sectors have their head offices and all of them have branches in Lagos. The proposed International airport along the Lekki-Epe axis, the Atlantic City Project, Lekki Free Trade Zone, the 10-lane massive road construction incorporating light rail along the Badagry Expressway that borders Cotonou, the economic capital of the Republic of Benin and massive investment in infrastructure by the Lagos State Government in partnership with the private sector consolidate the megacity as the hub of commercial property development in Nigeria. In addition, its location as a coastal city makes it a seaport with the largest volume of imports and exports, international and local airports, and the centre of capital market activities and the highest concentration of professionals in the professional services industry as well as the elite class. The megacity provides the highest number of valuations and users of valuation reports and is the leader in real estate case studies, education, information, awareness and technology (Babawale & Koleoso, 2006). The Lagos commercial property market, real estate activities and real estate professional practice in the megacity can rightly be considered to be a good representation of the Nigerian commercial property market (Ibiyemi &Tella, 2013). The relative peace and safety of lives and properties further increases investor confidence and more foreign investment flows in the mega city. According to the FIG (2010), many mega cities have continued to emerge, rising from 2 in 1950 to 20 in 2005 with 17 out of the 20 located in developing countries especially in the 20th century. By 2025, PWC (2014a) estimates that there will be 37 megacities, from 23 in 2014 and 12 of these will be in emerging economies. FIG has identified trends in the growth of megacities. These growth characteristics present enormous opportunities for research and investment especially to real estate professionals, investors and stakeholders. Also, PWC (2014a) in "six predictions for 2020 and beyond" that will affect the real estate landscape with implications for real estate investors, forecasts a huge expansion in global investable real estate universe in the emerging economies driven by population growth and increasing GDP that sees investable real estate growing more than 55% in 2020 compared to 2012. Nigeria as Africa's largest economy in terms of GDP should be a choice for investors. Similarly, Global Construction Perspectives and Oxford Economics (2013) in their global construction 2025 report project that Sub-Saharan Africa will be the second fastest growing construction region to 2025 after Emerging Asia and that construction activities in emerging markets will grow more than 60% from 35% in 2005 including Nigeria and Lagos is the prime location of interest. With an increasing middle class, Nigeria is projected to be the second fastest growing construction market among 46 countries behind Qatar and the fifth largest housing markets in the world after US with an average growth in construction of 8% and slightly less than 1.5 million new homes to be built per annum in 2012-25. These call for investments in housing, urban transportation, medical and educational facilities, tourism and hospitality and commercial properties.

4. RESULT AND DISCUSSION

4.1 RESULT FROM PRIMARY DATA ANALYSIS

Table 1: Basic profile of respondents

Options	Percentage	Frequency
Gender		
Male	83	83.0
Female	17	17.0
Total	**100**	**100.0**
Highest educational qualification		
HND/BSc	56	56.0
PGD	11	11.0
MBA/MSc	30	30.0
PhD	3	3.0
Total	**100**	**100.0**
Position in the firm		
Partner	59	
59.0		
Head of departments	17	17.0
Manager	15	15.0
Director	9	9.0
Total	**100**	**100.0**
Age of firm in years		
0-10 years	41	41.0
11-20 years	26	26.0
21-30 years	25	25.0
31-40 years	8	8.0
Total	**100**	**100.0**
Frequency of services in commercial property forecasting		
Sometimes	25	25.0
Rarely	26	26.0
Never	49	49.0
Total	**100**	**100.0**

Table 1 shows the basic profile of the respondents. Majority of the respondents are male (83%) while 17% are female. In terms of highest educational qualifications, 56% possesses first degree, 11% has post graduate diploma, 30 % possesses MBA or MSc degree and 3% of the respondents has PhD. The implication of this is that there tends to be a relationship between a professional's skill, knowledge and level of output and the educational qualification. The positions of the respondents in their firms show that they are placed in positions of high responsibilities and thus have a full knowledge of the workings of the property market. In addition, they are decision makers in terms of valuation methodologies and process. As the table reveals, 59 are partners, 17 are heads of departments, 15 are managers and 9 are directors. In terms of age of the firms, majority are 10 years and below (41%), 11-20 years are 26%, 21-30 years are 25% while 8% has been operating for 31-40 years. This shows that firms have existed for a considerable number of years and should have adequate data on commercial property activities in their respective locations. When asked the frequency of offering services in commercial property investment forecasting, 25 % sometimes did offer such services, 26% rarely offered and 49% has never offered such services.

Table 2: Perception of respondents on the implication of commercial real estate forecasting to feasibility and viability appraisal

Options	Strongly agree W= 5	Agree W= 4	Neutral W = 3	Strongly disagree W = 2	Disagree W=1	Total	RII	Rank
Commercial real estate forecasting is still at the rudimentary level in Lagos.	F = 6 WF = 30	F = 12 WF=48	F = 45 WF =135	F = 37 WF= 74	F = 0 WF = 0	100 (287)	2.87	5th
Forecasting real estate markets, trends and cycles in the economy is just an academic activity that has no bearing on practice.	F = 28 WF = 140	F = 22 WF=88	F = 21 WF = 63	F = 8 WF = 16	F = 21 WF = 21	100 (328)	3.28	4th
Majority of the Estate Surveyors are not engaged in high profile commercial real estate pre-development feasibility studies in Lagos.	F = 30 WF = 150	F = 53 WF =212	F = 17 WF= 51	F = 0 WF= 0	F = 0 WF= 0	100 (413)	4.13	2nd
Real estate market forecast is a major determinant in commercial real estate investment appraisal.	F = 93 WF = 465	F = 7 WF =28	F = 0 WF = 0	F = 0 WF =0	F = 0 WF = 0	100 (493)	4.93	1st
Estate surveyors are yet to embrace fully quantitative forecasting techniques, thus may not adequately predict trends in commercial real estate.	F = 6 WF = 30	F = 12 WF= 48	F = 36 WF= 106	F = 46 WF =92	F = 0 WF =0	100 (278)	2.78	6th
Estate surveyors have lost most high profile commercial real estate pre-investment studies due to non-adoption of conventional and quantitative forecasting methods/ techniques	F = 29 WF = 145	F = 21 WF= 84	F = 21 WF = 63	F = 8 WF =16	F = 21 WF =21	100 (329)	3.29	3rd

Key: W= weight, F = frequency and WF = Weighted Frequency

Table 2 shows the responses on the implication of commercial real estate forecasting and feasibility and viability appraisal. In the first ranking (RII = 4.93) that real estate market forecast is a major determinant in commercial real estate investment appraisal, the respondents validate that the success of any commercial real estate investment/feasibility study depends on the ability to predict the future of the market. Majority of the Estate Surveyors are not engaged in high profile commercial real estate pre-development feasibility studies in Lagos ranks second (RII = 4.13) While the statement that Estate surveyors have lost most high profile commercial real estate pre-investment studies due to non-adoption of conventional and quantitative forecasting methods/techniques was ranked third (RII = 3.29) This is followed in the fourth rank by the perception that forecasting real estate markets, trends and cycles in the economy is just an academic activity that has no bearing on practice with an index of (RII = 3.28). Commercial real estate forecasting is still at the rudimentary level in Lagos (RII = 2.87) ranks fifth. Although some respondents believe that Estate surveyors are yet to embrace fully quantitative forecasting techniques, thus may not adequately predict trends in commercial real estate. (RII = 2.78) as the least ranked in the sixth position. From this result, implication of commercial real estate forecasting to feasibility appraisal can be seen. Estate surveyors and valuers are yet to embrace fully quantitative forecasting techniques, and therefore unable to predict future performance of commercial real estate investment. This could deter investors of high profile commercial real estate investment from consulting estate surveyors but rather seeking advice from economics and financial experts. In addition, it is evident that Estate surveyors could have lost most real estate investment consulting opportunities especially in commercial real estate investment forecasting due to adoption of conventional and qualitative forecasting methods in preference to quantitative methods that represent the standard in real estate forecasting. Although the respondents agree that forecasting the real estate market is a major determinant in commercial real estate investment appraisal, the process and methodology of commercial real estate market forecasting remains unchanged and not according to global standards.

Table 3: Familiarity of forecasting techniques and methods

Techniques and methods	Familiarity
Qualitative techniques	
Expert opinion/Judgemental methods	100
Life cycle analysis	95
Delphi method	20
Historical analogy	100
Surveys	100
Quantitative techniques	
Moving average	20
Straight-line projection	18
Exponential smoothing	0
Regression Analysis (Multiple and simple)	87
Trend line analysis Simulation	3
Decomposition	0
Box-Jenkins time series	0
Expert systems	0
Neural networks	0
Naive method	0
Discounted Cash Flow method	100

The respondents were asked to select the quantitative methods they are familiar. In table 3, the respondents are very familiar with the qualitative techniques. Except the Delphi and life cycle methods that had 20% and 95% respectively, the other qualitative methods that are based on judgments, opinions, intuition, emotions, or personal experiences and are subjective in nature were well known by all the respondents. The reason is obvious because they do not rely on any rigorous mathematical or statistical computations. For the quantitative methods, moving average (20%), straight-line projection (18%), regression analysis (87%), trend line analysis (3%) and Discounted cash flow method (100%) were the only methods that the respondents were familiar with. These results suggest that respondents have a better understanding of qualitative forecasting techniques than qualitative ones.

Table 4: Usage of forecasting techniques and methods

Techniques and methods	Usage in investment appraisal
Qualitative techniques	
Expert opinion/Judgemental methods	100
Life cycle analysis	43
Delphi method	0
Historical analogy	80
Surveys	72
Quantitative techniques	
Moving average	0
Straight-line projection	0
Exponential smoothing	0
Regression Analysis (Multiple and simple)	0
Trend line analysis Simulation	0
Decomposition	0
Box-Jenkins time series	0
Expert systems	0
Neural networks	0
Naive method	0
Discounted Cash Flow method	100

In Table 4 all the respondents used discounted cash flow as the only method in predicting real estate values. Similarly, expert opinion and judgement remain the most used qualitative method of forecasting commercial real estate market by all the respondents except life cycle analysis (43%), historical analogy (80%) and surveys (72%). In a world where real estate investment is driven by foreign direct investment (FDI) through various investment vehicles for example venture capitals, private equity funds, property derivatives and a host of others, investors require quantitative and sound investment analysis for decision making. This result is surprising because studies carried out over a decade ago on valuation methodologies in the Nigerian real estate market revealed this same trend (Olaleye, Aluko & Ajayi, 2007; Olaleye, 2008). The implication of this is that recommendations emanating from such studies were not implemented and the Nigerian professionals are yet to start complying with global real estate trend.

Table 5: Variables and type of forecasts that can be considered in Nigerian commercial real estate market forecasting

Responses
Variables
Prime interest rates
Treasury bill
Consumer price index
Price of building materials
Employment rate
Construction cost index
Rental value per meter square
Income return
Net operating income
Yields
Capital growth
Total returns
Type of forecast proposed
Projection of rental values
Projection of capital values
Forecasting growth rates
Forecasting yields of commercial properties.
Modeling the commercial real estate market
Measuring and predicting performance of the commercial real estate market

The respondents were asked an open question to list the variables given the level of data available and type of commercial real estate market forecasts that can be carried out in Lagos Mega city. A total of 12 variables were listed in table 5. Data on prime interest rates, treasury bills, consumer price index, price of building materials, employment rate and construction cost index are available on the data bases of the country's bureau of statistics, financial regulatory institutions and other government agencies. Rental value per meter square, rental income return, net operating income, yields, capital growth and total returns could be sourced from historical records and transactions of real estate companies, estate surveyors and valuers and financial analysts. In addition, projection of rental values, projection of capital values, forecasting growth rates, forecasting yields of commercial properties, modelling the commercial real estate market and measuring and predicting performance of the commercial real estate market as a whole and its sub-markets in particular were the type of forecasts proposed by the respondents.

4.2 RESULT FROM CONTENT ANALYSIS OF FEASIBILTY AND VIABILITY REPORTS

The content analysis was carried on 50 feasibility and viability reports with particular reference to real estate forecasting under the following themes in agreement with Ladki, Darwiche, Baablbaki, Talhouk, Ghasha and Firikh (2009).

- Group A consists of reports that have a sub-heading on forecast of commercial real estate market.
- Group B refers to all the terminologies that refer to projection of rental values
- Group C refers to all the terminologies that refer to Cash flow analysis
- Group D refers to the terminologies that refer to forecasting techniques or methods.
- Group E consists of terminologies that refer to trends in commercial real estate real investment

Table 6: Content analysis of feasibility and viability reports

Group	No. of reports /Frequency
Group A	0
Group B	50
Group C	50
Group D	50
Group E	32

An analysis of the reports in (group A) showed that all of them did not provide a specific sub-heading on the forecast of the commercial real estate market. As such no detailed analysis of the commercial real estate market and the performance of the commercial real estate submarkets were offered. Thus there was total omission of real estate market forecasting in the feasibility reports. While all the reports in group B have sections on rental value projections, the methodology used in arriving at the projections were not stated and it appears that the values could have been obtained through expert judgement. Group C provided evidence that there were detailed cash flow analysis involving the all the income and expenditure, schedule of loan repayment and payback period. All the reports have methods of analysis provided but not specifically on forecasting. A careful observation reveals that Discounted Cash Flow Techniques (cash flow prediction method), Sensitivity analysis and Scenario testing were the three methods of analysis used. Under group E, only 32 (64%) of the reports contained information on the trends of the commercial real estate market rent but no quantitative analysis of these trends were reported. Market data and variables were not identified and specifically reported. Generally, all the reports contained assumptions which cannot be validated.

CONCLUSION AND POLICY RECOMMENDATIONS

The importance of commercial property forecasts and the role it plays in the investment decision-making process cannot be overemphasized especially when considered in the context of recent economic uncertainties in the global market and the opportunities created by the Lagos mega city as an epicentre of the interactions between the spatial transformation process and socio-economic development in a local scale but with global dimensions. This study has once again revealed that real estate forecasting is yet to be given full attention by the stakeholders in the

Nigerian market. This study has identified the implications of forecasting on feasibility and viability studies of commercial real estate investment in Lagos as follows:

Firstly, commercial real estate markets cannot be adequately captured and projected within the current appraisal framework. In view of this, investors will not be appropriately and quantitatively guided.

Secondly, the accuracy of projections of rental income, costs and total returns will continue to be questioned due to the fact that market based models are not utilized.

Thirdly, it appears the Estate Surveyors and Valuers are not willing to adopt market-based quantitative techniques in their pre-investment analyses due to lack of knowledge and sophistication of the available quantitative software to ease.

Fourthly, the quality of the feasibility reports are under serious threat in the current global investment market.

In the light of these findings and implications, this study therefore recommends a sustained awareness of the benefits of real estate forecasting and monitoring of the market. This will help in reporting trends and changes proactively.

There should be as a matter of urgency a market - based strategy at the real estate professional regulatory level to train and equip professionals in quantitative techniques and in carrying out market analysis for real estate investment.

The academia, practitioners and the regulatory bodies should encourage strong research collaboration regarding real estate market forecast modelling and application through research sponsorship and commissioned studies.

Research oriented organizations and institutions especially the Nigerian Institution of Estate Surveyors and Valuers (NIESV) should consolidate on the success of the phase one of the NIESV Data Bank Project in gathering more robust data on real estate investment in order to deepen property market forecasts in Lagos mega city and Nigeria as a whole. Such data may extend beyond those variables identified by the respondents for the commercial real estate in this study to include among others yields on government securities, car registrations, net lending to consumers, exports orders, house building starts, money supply, manufacturing employment and investment, NSE All Share price Index, press recruitment advertisements, unit labour costs, personal disposable income, gross trading profits, consumer credit and other variables that have both direct and indirect effect on commercial real estate investment. Most of these data are available in the data base of regulatory agencies in Nigeria.

This paper has demonstrated that the availability and accessibility of data on commercial real estate investment is on the increase. The real estate professionals and researchers should take advantage of this awareness to consolidate commercial real estate forecast. As affirmed by Anim-Odame (2013), the data availability issue is gradually coming to an end due to increasing awareness in the Sub-Sahara region of Africa. The last 10 years has witnessed significant developments in Information Technology with innovation in software packages for data processing and analysis.

Experience has shown that Nigerian Estate Surveyors and Valuers are yet to be fully integrated into asset and fund management due to limited knowledge and training. Times has come for these professionals to step beyond the traditional real estate investment of "brick and mortar" into the main stream of asset and fund management or in the alternative justify the formation of real estate groups in the asset management companies, and push for the review of real estate education curriculum used in the tertiary institutions. Majority of the estate surveyors and valuers have links with international real estate institutions and associations to leverage on these opportunities to impact local practice. In few years to come and by adopting innovative strategies and world best practices, there is the possibility of the Nigerian Estate Surveyors and Valuers becoming global competitors. This could be a better way of increasing research and studies in direct commercial real estate and quoted real estate equities.

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SITE ACQUISITION FOR TELECOM BASE STATIONS IN NIGERIA: CONCERNS, CHALLENGES & PROSPECTS

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ABSTRACT

Owing to the revolution in the telecom landscape, the need for space to house GSM equipment so as to provide satisfactory network coverage for the Nation has intensified. Site acquisition activities have deepened due to competition and need to increase market share by individual network operators. But these telecom operators continually encounter various degrees of problems when acquiring these sites which results in several implications. The study aims to ascertain and observe the conspicuous issues and challenges associated with acquiring sites for telecom base stations in Nigeria, and also evaluate their occurrence rate and establish the implications of these evident site acquisition difficulties. Site acquisition operatives and consultants of the telecom service providers were sampled; mailed questionnaire and personal interview were employed. From the analysis of data based on 400 telecom base stations, 11 distinctive site acquisition problems were identified, and further analysis revealed that restive attitudes of community youths, burdensome financial terms by public departments and uncooperative attitudes of host community heads (and adjoining landowners) are the top-ranked issues. The study, however, suggests certain practicable initiatives and viewpoints to better manage these barriers.

Keywords: Site Acquisition, Global System for Mobile Communications, Base Stations

INTRODUCTION

Land is the platform for all human activities and an essential tool for human development (Adisa, 2007). In Nigeria, land remains a crucial factor of production, a capital asset and a productive economic factor that defines the social, economic