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## Modern Approach to Property Development Appraisal

Orekan Atinuke Adebimpe & Oladunni Bashir

Department of Estate Management, College of Environmental Sciences,  
Bells University of Technology, Ota, Ogun State, Nigeria  
tinuorekan@ymail.com, allah4me\_2007@yahoo.com

**Abstract:** This research evaluates the appraisal techniques employed by property developers in Lagos metropolis with a view to addressing the basic problems involved in investment appraisal as well as the adoption of modern appraisal techniques. Structured questionnaires were administered on a total sample size of 190 Estate Surveying and Valuation firms in Lagos while 129 were retrieved. The study found that payback period, accounting rate of return and internal rate of return were the most used traditional methods of appraisal techniques. Also, a low level of usage of the modern appraisal techniques was noted. The study revealed that the choice of viability techniques were based on appropriate viability criteria, ability of the method to consider basically the returns inherent and the simplicity of the technique were the major reasons influencing the choice of development appraisal techniques. Issues associated with wrong use of development appraisal techniques included performance deviating from investor's objectives; actual returns in variance with expected returns. The study concluded that there is a need for the adoption of more appropriate development appraisal techniques in the evaluation of projects so as to improve the performance of the investment and development market thereby restoring investors' confidence. The study therefore recommends that Estate Surveyors and Valuers should embrace modern techniques that incorporate risks to further enhance the accuracy of appraisals in line with global best practice. Also, the Nigerian Institution of Estate Surveyors and Valuers should organize seminars and conferences on modern appraisal techniques now in vogue.

**Keywords:** Property developers, Development appraisal, Estate Surveyors and Valuers, modern Appraisal Techniques.

## **1.0 Introduction**

According to Oyetunji (2016), the complexities of the property development process, involving numerous professionals and the expenditure of large sums of money, have resulted in different attitudes to property development especially in the face of inevitable uncertainty. Due to the nature of property development, quite a lot of people's savings, equities and borrowings, insurance policies and pension funds are tied up in this potentially risk taking activity. In a bid to mitigate or curb the resultant effect of loss of capital, incessant abandonment of projects, failure of projects amongst others, development appraisal therefore becomes significant.

Development appraisal is an evaluation of the attractiveness of an investment proposal using various investment techniques as appropriate. According to Sangster (1993) development appraisal technique is one of the regularly used methods under investigation areas of financial management practices. Though there are number of issues in investment appraisal and appraisal techniques are the starting point for management. Development appraisal contains a variety of concerns; the most significant is the type of technique to be used which is the starting point to be considered by the management (Morgan and Tang, 1992; Cowton and Pilz, 1995).

A number of tools/techniques are available to determine the extent of viability or otherwise of a project (Remer and Nieto, 1995a, 1995b and Akalu, 2001). Dramodaran, (1994); Laitinen, (1997) and Akalu (2001) however asserted that the continuous application of some of the techniques reveals significant limitations in their capacity to address the basic problems

of investment appraisal. In addition, some of these methods involve complex decision making processes that property developers are not familiar with. This has also resulted in property developers' resolve not to carry out comprehensive investment appraisals on projects to determine its worthwhileness. Oyetunji (2016) further opined that the constant failure of development projects in Nigeria is no doubt a major concern to all the participants in the real property and construction sector as a result of inappropriate methods adopted by the professionals involved. According to Darlow (1999), the development appraisal techniques being used by professionals had been criticized on the basis of their simple assumptions about incidence of cost and finance charges. This study evaluates the appraisal techniques employed by property developers in Lagos, Nigeria with a view to reviewing the basic problems of investment appraisal and the adoption of modern appraisal techniques.

## **2.9 Literature Review**

According to previous research, the most common investment evaluation methods were the payback period, net present value and the internal rate of return (Ross, 1986; Pike, 1988; 1996; Carr and Tomkins, 1996, 1998; Arnold and Hatzopoulos, 2000; Graham and Harvey, 2001; Sandahl and Sjögren, 2003; Tuomaala and Virtanen, 2011). Simple payback rule-of-thumb decision-rules are common with property investments. Companies feel that the complexity of measuring investment's future savings makes the payback period an adequate method for financial investment evaluation (Jackson, 2010). Modigliani and Miller (1958) argue that managers should ignore financing and dividend decisions as irrelevant and focus on positive net present value

(NPV) investment opportunities that would maximize the value of the firm. The classical theory by Modigliani and Miller (1958) identifies sophisticated evaluation methods as a tool for maximizing the profitability of the small firms.

Hastie (1998) also regarded the financial theory that recommends the utilization of sophisticated techniques such as net present value to improve decision making and maximize the value of the firm, as unwarranted. He also noted that the use of incorrect assumptions has been a more significant source of bad investment decisions than the use of simple measurement techniques. He was of the opinion that investment decision making could be improved significantly if the emphasis were placed on asking the appropriate strategic questions and providing better assumptions rather than on increasing the sophistication of measurement techniques.

Adler (2006) argued that discounted cash flow (DCF) should be removed from financial theory as it is increasingly irrelevant to contemporary business practice and can be dangerous in evaluating proposed projects. He concluded that DCF is meaningless and as such should not be applied in evaluating capital budgeting decisions or rather should be replaced with less restrictive and more optimistic methods.

Halttunen (2012) studied the role of investment appraisal methods and versatility of expertise in energy efficiency investment decisions by examining the decision-making in Finnish industrial companies with regards to energy efficiency investments with focus on investment appraisal methods and the investment process

participants influencing the investment decision-making. Using descriptive statistics the study observed that the most commonly used financial investment appraisal method for operational and energy efficiency investments is the payback period method followed by the internal rate of return and net present value methods. This study did not look at real estate investment.

Hunjra *et al.* (2011) studied investment appraisal techniques and constraints on capital investment in Pakistani corporate sector. The study employed descriptive analysis and it was observed that corporate managers are well aware about the worth of investment appraisal techniques for the assessment of project risk and consider these techniques are important for long term profitability and survival of the company. However, a substantial number of firms in Pakistani corporate sector were not following these practices. This study targeted Chief Financial Officers (CFOs) of companies that are involved in oil and gas, engineering but failed to look at the real estate sector.

Milis, Snoeck and Haesen (2012) evaluated the applicability of investment appraisal techniques for assessing the business value of information management services. Using descriptive statistics, the study observed that the traditional capital investment appraisal techniques (CIAT's) such as payback period or net present value were by far the most used techniques for assessing the feasibility of ICT investments. Nevertheless, serious doubts about the fitness of these techniques in a service based value net environment arose. However, none of these studies focused on real property investment.

Ezeokoli, Adebisi and Olukolajo (2014) carried out a research on the practice of investment viability appraisal in Akure, Nigeria. The study examined the role played by estate surveyors and valuers in choosing the right viability appraisal technique for an investment appraisal. Structured questionnaire was administered on twenty-one Estate Surveying and Valuation firms. The data obtained were analyzed using descriptive statistical tools such as frequency tables and weighted mean score 3 and 4-point likert formats. The result of the analysis revealed that Valuers mostly made use of Payback Period, NPV and IRR, which are deterministic in nature. This was as a result of the estate surveyors and valuers basing their appraisals mostly on economic and financial criteria only without fully analyzing the prevailing inflation rate in the economy and the level of risk tolerance of their client.

Oyetunji (2016) also carried out a research on the assessment of the reliability of techniques employed in feasibility and viability appraisal. The study focused on Estate Surveyors and Valuers in Akure. Questionnaires were administered to 22 practicing Estate Surveying and Valuation firms out of which only 16 were retrieved and valid for analysis. Findings revealed that 43.75% of the respondents rarely secure instructions to carry out feasibility and viability appraisal on most developmental projects, while NPV was the most adopted in feasibility appraisal. The study revealed that most of the Estate Surveyors and Valuers were aware of the availability of other modern appraisal techniques that incorporate risk but did not use it.

### 3.0 Study Area

Lagos State is one of the most populous cities in the world. It is a megapolis with an estimated population of 15 million experiencing an annual growth rate of nearly 6%. The State is home to Nigeria's principal commercial sea and airports with over 45% of the country's skilled workforce resident in the State. Lagos State is located at latitude 6°34'60"N, 3°19'59"E along the West African coast and was the capital city of the country before it was replaced with Abuja on 12<sup>th</sup> December, 1991. However, Lagos remains the commercial nerve centre of Nigeria to date. The city is a typical example of the history of growth and development of urban areas in Nigeria. The 180km long Atlantic coastline forms the southern boundary of the State while its Northern and Eastern boundaries are shared with Ogun State. On the Western side, the Republic of Benin borders the boundary (Balogun *et al.* 1999). Lagos State is the smallest State in Nigeria with highest population over 5% of the National estimate with an area of 356,861 hectares out of which 75,755 hectares are wetlands (Lagos State Government, 2014).

### 4.0 Methodology

The population of this study comprises of estate surveyors and valuers working in Estate Surveying and Valuation firms in Lagos metropolis. The 2017 National directory of the Nigerian Institution of Estate Surveyors and Valuers shows that there are three hundred and sixty-three (363) practicing Estate Surveying and Valuation Firms in Lagos State. Structured questionnaires were administered to all the randomly sampled 190 Estate Surveying and Valuation firms in Lagos State to elicit the relevant information on the

development appraisal techniques adopted in Lagos State property market. 129 questionnaires were completed and retrieved representing 67.89% performance rate. The retrieved questionnaires were used for the analysis. The study employed the weighted mean score, based on a 3 and 5-point Likert scales, because of its

simplicity and ease of communicating the result of the research. Data presentation was structured towards the method of appraisal often employed, reasons for the choice of appraisal techniques and the problems associated with the use of development appraisal techniques.

## 5.0 Analysis of Data

Table 1: Development Appraisal Techniques employed in the evaluation of projects

Development Appraisal Techniques	MU	U	UD	UN	MUN	Mean	Std. Dev	Rank
<b>Traditional Methods</b>								
Payback period	91(70.5)	38(29.5)	-	-	-	4.7054	.45763	1 <sup>st</sup>
Accounting rate of return	52(40.3)	74(57.4)	3(2.3)	-	-	4.3798	.53318	2 <sup>nd</sup>
Internal rate of return	70(54.3)	28(21.7)	15(11.6)	15(11.6)	1(0.8)	4.1705	1.08343	3 <sup>rd</sup>
Net present value	63(48.8)	20(15.5)	44(34.1)	2(1.6)	-	4.1008	.98302	4 <sup>th</sup>
Discounted payback period	9(7.0)	35(27.1)	17(13.2)	61(47.3)	7(5.4)	2.8295	1.10485	5 <sup>th</sup>
Residual valuation met	30(23.3)	13(10.1)	18(14.0)	58(45.0)	10(7.8)	2.9612	1.34282	6 <sup>th</sup>
Discounted probability index	9(7.0)	35(27.1)	4(3.1)	81(62.8)	-	2.7829	1.06772	7 <sup>th</sup>
Net terminal value	-	2(1.6)	4(3.1)	105(81.4)	18(14.0)	1.9225	.47783	12 <sup>th</sup>
<b>Modern Methods</b>								
Certainty equivalent cash flow	11(8.5)	21(16.3)	18(14.0)	13(10.1)	66(51.2)	2.2093	1.42891	8 <sup>th</sup>
Risk Adjusted NPV	-	14(10.9)	6(4.7)	93(72.1)	16(12.4)	2.1395	.76795	9 <sup>th</sup>
Sensitivity analysis	-	2(1.6)	10(7.8)	101(78.3)	16(12.4)	1.9845	.51515	10 <sup>th</sup>
Stochastic decision trees	12(9.3)	15(11.6)	12(9.3)	4(3.1)	86(66.7)	1.9380	1.44023	11 <sup>th</sup>
Weighted Average Approach	6(4.7)	12(9.3)	16(12.4)	8(6.2)	87(67.4)	1.7752	1.24524	
<b>Monte Carlo Simulation</b>								
Monte Carlo Simulation	-	-	5(3.9)	71(55.0)	53(41.1)	1.6279	.55999	13 <sup>th</sup>
Risk adjusted discount rate	3(2.3)	3(2.3)	7(5.4)	8(6.2)	108(83.7)	1.3333	.86903	14 <sup>th</sup>

Source: Field Survey, 2017

The research examined various appraisal techniques used in the evaluation of projects. Various traditional and modern appraisal techniques based on the mode of use as opined by the practicing Estate Surveying and Valuation firms in Lagos. As revealed in Table 1, majority of the respondents opined to the use of traditional methods of development appraisal techniques. The use of payback period, accounting rate of return and internal rate of return were the most used traditional methods of

appraisal techniques with mean scores of 4.7054, 4.3798 and 4.1705 which have been ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> respectively. The research also showed a low level of usage of the modern appraisal techniques. Monte Carlo simulation and the use of risk adjusted discounted rate were the least used methods of development appraisal techniques as opined by the practicing Estate Surveying and Valuation firms in Lagos.

The findings of this study are in agreement with the researches of Ezeokoli *et al.* (2014) and Oyetunji (2016) on the low level of adoption of the modern appraisal techniques. The findings of this study imply that Estate Surveyors and Valuers in Lagos are still concentrating their practice on the use of traditional methods of development appraisal. Several literature and researches such as the works of Baum and Crosby (1988); Baum *et al.* (1997); Ojo (2006); Ezeokoli *et al.* (2014) revealed that these traditional methods might not be

in tune with the present day economic reality.

Modern methods of appraisal that incorporate measurement of risk and uncertainty such as Monte Carlo Simulation, Risk Adjustment Discounted Rate technique, Certainty Equivalent technique and Sliced Income technique are not yet embraced in practice despite experts' view that these are the best methods that are more applicable under conditions of risk and uncertainty as is experienced in Nigeria today.

Table 2: Respondents' reasons for choice of techniques employed

The reason for the choice of techniques employed	Mean	Std. Dev.	Rank
Appropriate viability criteria	4.4419	.75939	1 <sup>st</sup>
The Method that considers basically the returns inherent	4.3643	.99167	2 <sup>nd</sup>
Simple to Use	4.2558	.90380	3 <sup>rd</sup>
simple assumptions about incidence of cost and finance charges	4.2403	.90808	4 <sup>th</sup>
Ability to Incorporate Risks	4.2403	.63462	5 <sup>th</sup>
No too much mathematical calculations	4.2171	.59897	6 <sup>th</sup>
Ability to estimate the variable inputs used in the appraisal	4.2171	.91823	6 <sup>th</sup>
lack of awareness or preference for a particular method	4.1860	.83636	8 <sup>th</sup>
Based on the perception and tolerance of risk of the investor.	4.1628	.82718	9 <sup>th</sup>
The Method that aids project selection	3.5504	1.46821	10 <sup>th</sup>
Changes in rate of interest	3.4884	1.11184	11 <sup>th</sup>
Investor's level of risk tolerance	3.4574	1.23749	12 <sup>th</sup>
Investor's objective(s)	3.3101	.97467	13 <sup>th</sup>
complex decision making processes	2.2868	.92866	14 <sup>th</sup>

Source: Field Survey, 2017

Reasons for the choice of specific development appraisal techniques in developers' appraisals were further examined by the research. The research revealed that the choice of viability techniques were based on appropriate viability criteria, ability of the method

to consider basically the returns inherent and the simplicity of the techniques were the major reasons influencing the choice of development appraisal techniques with mean scores of 4.4419, 4.3643 and 4.2558 respectively. The least choice of selection of appraisal

techniques as revealed in the research were investors objectives and complex decision making processes which were ranked 13<sup>th</sup> and 14<sup>th</sup> with mean scores of 3.3101 and 2.2868 respectively. The findings of the study are in agreement with the works of Ezeokoli *et al.*, (2014) and Oyetunji (2016).

Also, personal interviews with the respondents revealed that despite the availability of the various development appraisal techniques, there was a low level of understanding and awareness of the modern appraisal techniques therefore contributing to the high degree of avoidance of using the method. Most

of the Estate Surveyors and Valuers in the study area executed feasibility and viability appraisal adopting appraisal techniques that they were conversant with. The modern appraisal techniques were not adopted due to their sophisticated nature, complex and often requiring rigorous mathematical calculations which are far beyond the comprehension of most of the Estate Surveyors and Valuers. Furthermore, it was revealed that most of the Estate Surveyors and Valuers were not exposed to the modern appraisal techniques as they were not taught in school or in other training sessions.

Table 3: Problems associated with Wrong Use of investment appraisal techniques

Problems associated with investment appraisal techniques	Mean	Std. Dev.	Rank
Performance deviating from investor’s objectives	4.6279	.48525	1 <sup>st</sup>
Actual returns in variance with expected returns	4.5814	.63366	2 <sup>nd</sup>
Cause the management to pass up valuable investment opportunities,	4.5504	.49939	3 <sup>rd</sup>
Exposure of clients to more risk	4.4031	.49243	4 <sup>th</sup>
Reduction of the value of investment of the developer	4.3953	.65453	5 <sup>th</sup>
Difficulty in loan amortization	4.3798	.97783	6 <sup>th</sup>
Faulty Decisions	4.3256	.54719	7 <sup>th</sup>
Longer void periods in developed properties	4.1240	.41472	8 <sup>th</sup>
Wasteful use of resources and financial investment	4.0620	.49611	9 <sup>th</sup>
Underestimate the value of the investment project	4.0310	.32925	10 <sup>th</sup>
Foreclosures of mortgage properties by lenders	3.8760	.66153	11 <sup>th</sup>

Source: field survey, 2017

Table 3 examined the problems associated with wrong use of investment appraisal techniques. The research revealed that the basic problems associated with wrong use of development appraisal techniques include performance deviating from investor’s objectives; actual returns in variance with expected returns and

causing the management to pass up valuable investment opportunities with mean scores of 4.6279, 4.5814 and 4.5504 which have been ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> respectively. The least problems inherent were underestimating the value of the investment project and problems of foreclosures of mortgage properties by lenders which were ranked 10<sup>th</sup> and

11<sup>th</sup> respectively with mean scores of 4.0310 and 3.8760. Considering the values of the mean score, it could be deduced that all the identified problems are significant in the wrong use of investment appraisal techniques with significant effect on the development project itself and the investor.

On a general note, the use of the traditional methods of development appraisal techniques do not consider the effect of risks, inflation, economic situation and other factors as may affect the development. The traditional methods are however also referred to as deterministic appraisal techniques as they do not incorporate risk in their computation, especially in an economy that is very susceptible to inflationary changes and uncertainty. These traditional methods can no more be relied upon in a situation where the economy is unstable, inflation is high, and there are high interest and exchange rates as is the case in Nigeria.

However, in the face of economic instability, the common probabilistic approaches such as sensitivity/scenario analysis, the risk-adjusted discount rate, risk adjusted cash flows (the certainty equivalent technique and the weighted average approach), and Monte Carlo simulation are rarely used. Since investors are risk averse and would be more interested in the accumulation of profit, the implication of the adoption (by the appraiser) of a more optimistic risk attitude than that considered appropriate by their clients is that development appraisals might not be adequately addressing the client's lower risk tolerance. In other words, the appraiser using best estimates might recommend a project with high profits but a high standard deviation of returns as viable while their client might not be

willing to accept high developer's profits if they are accompanied by a relatively high degree of uncertainty.

## **6.0 Conclusion and Recommendations**

Considering the significance of development and viability appraisal as the bedrock of any successful investment development; attention should be paid to the use of appropriate development appraisal techniques in the evaluation of projects so as to restore investors' confidence and improve the performance of the investment and development market. In Nigeria, the application of appropriate modern appraisal method may be a difficult task for most investment appraisers as it requires critical analysis of various tools requiring rigorous mathematical applications. Based on the findings from this study, first, Estate Surveyors and Valuers should embrace modern techniques that incorporate risks to further enhance the accuracy of appraisals in line with global best practice. Second, the Nigerian Institution of Estate Surveyors and Valuers should organize seminars and conferences on modern appraisal techniques and the need to adopt them in development appraisals. Third, practicing Estate Surveying and Valuation firms should ensure that staffs adopt the best development appraisal techniques while carrying out their services in order to ensure clients' confidence as well as improve investment performance in the economy. Fourth, appraisers should consider the unstable nature of the economy while carrying out the feasibility studies. Fifth, the challenges posed to investment appraisal decision should be borne in mind to avoid misleading clients. Finally, appraisers should endeavour to upgrade themselves



academically by ensuring that the tools employed for investment analysis

should be able to cope with modern day technology and situation.

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