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**Title: The Practice of Feasibility/Viability Appraisal and the Reliability of Techniques Employed**

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**ABSTRACT**

*The expectation of any investor is to obtain a maximum satisfaction in his investment. In order to attain the investment objective of maximizing wealth, maximizing returns and minimizing risks, a prudent investor therefore chooses between ranks of alternative investments. The need to obtain the best out of one's investment has led to the call for feasibility appraisal. In the bid to ascertain whether a project is worthwhile or not, several techniques are available at the disposal of the appraisers from which the one that meets the investors' objective(s) is chosen. This study aims to assess the practice of feasibility and viability appraisal and the reliability of the techniques employed by appraisers when executing the task. Twenty two (22) structured questionnaires were administered to estate surveying and valuation firms in Akure, Ondo State, Nigeria. The findings of the study show that the appraisers are aware of the sensitivity analysis as a technique that incorporate risk in investment appraisal but 75% of them can't use the tool. The reason adduced to this is that the methodology involved is too sophisticated. Recommendations are that feasibility and viability appraisers should consider the unstable nature of the economy in the course of executing their assignments so that the changing nature of the economy will not lead to a failed project as a result of the investment decision taken.*

**Keywords:** Appraisers, Property development, Investors, Risk, Investment Analysis

## INTRODUCTION

Several property developments are being carried out in every nook and cranny of a nation. This is due to the impact of housing developments on the growth of the economy. Despite the importance and effect of this development on the nation, several of them are executed without recourse to feasibility and viability appraisal. Feasibility and viability studies are required as “conditions” for meeting either statutory approvals or securing development finance. It is equally important when a bank is considering an open-end loan because repayment of the loan may depend upon the project's sales or leasing program. Overall, the investor or financial institutions must determine whether or not a thorough feasibility study justified the project before the bank issued a loan commitment. It must also ensure that an unsound appraisal or analysis that does not reflects current and reasonably anticipated market conditions must be rejected (Beaman, 2012).

Most prospective investor takes an irreversible decision to execute a project even before carrying out a feasibility and viability appraisal. This can be catastrophic on the performance the projects. The investor would have made a decision to execute the project before carrying out a feasibility and viability study. The decision taken often has its impact on the overall performance and the final outcome of some projects. Many people’s investments in failed project due to the wrong choice made while seeking for advice on proposed projects development. The objective of an investor is to maximize profit while minimizing risk; therefore, it is required of an appraiser to employ the technique that is suitable in meeting the objective of a rational investor.

The study by Gambo *et al* (2012) on market research applicability among Nigerian Estate surveyors and valuers revealed that Estate Surveyors and Valuers carry out market research in feasibility studies shabbily without the required competence and that they do spend little or no time in carrying out market research compared to the onerous task required in market research. This by implication obviously affects even the most viable investment decision. Ogunba et al (2005) study on development appraisal risk also revealed that most development appraisers simply employ the risk analysis approach that suited them in the course of executing appraisal work. Ojo (2006) research on development appraisal techniques and risk adjustment in commercial property developments in Lagos revealed that the quality of appraisal services rendered by the Estate Surveyors and Valuers in the study area was fast becoming inadequate.

According to Darlow (1999), most development appraisal techniques employed by investment appraisers are criticized due to their simplicity assumptions on cost incidence and finance charges. A major concern for participants in the construction industry is the constant failure of development projects especially in Nigeria. One of the factors attributed to this is the application of inappropriate methodology by the investment advisors. This study therefore seeks to assess the practice of feasibility and viability appraisal in Akure by investigating the reliability of techniques employed by the professionals involved.

### **CONCEPTUAL BACKGROUND ON FEASIBILITY AND VIABILITY APPRAISAL**

Bello (2013) opined that feasibility and viability appraisals are basically carried out primarily for the purposes of: assessing the need for and the market prospects of the investment proposal; estimating the costs of the project as well as its expected revenue; preparing a suitable schedule of programme of activities for the implementation of the proposal; evaluating the proposed funding arrangement for the project given the promoters current financial position; and the determination of the level of profitability expected from the investment proposal. In Odeyomi (2007) opinion, two main methods are available for whether a project is profitable or otherwise. The method could either be traditional or contemporary. The traditional method includes: Accounting rate of return, Payback period and Residual method, while the modern method includes: Net present value, Internal rate of return, Net terminal value, Discounted payback period and Discounted probability index.

Okoh (2008) elaborated that the two main methods of determining the profitability of or otherwise of real estate project can also be referred to as the accounting (traditional) and discounting (modern) methods. Modern method of viability appraisal involves discounting process. The study by Okoh further noted that the discounting system determines the present value of a future stream of income which is based on the principle of time value of money. This time value of money suggests the differentials between these two methods. In terms of mean returns, risk adjusted return, income growth and capital growth, Bello (2003) evaluated the relative performance of residential property and securities in Lagos and established that investment in ordinary share performed above that of residential property in absolute term and risk adjusted return. The study also showed that the risk associated with residential property is

lower than that of ordinary shares. This shows that every form of investment is associated with one form of risk or the other. However, the increasing complexity of development projects has required more sophisticated method for analysis (Raymond, 2001). Steve (1997) stated that the Net Present Value and Internal Rate of Return are the main appraisal techniques widely adopted.

### **COMPARATIVE ASSESSMENT OF FEASIBILITY AND VIABILITY APPRAISAL TECHNIQUES**

Appraisal technique was meant to guide an investor in decision making concerning his proposed development. As a result, the appraiser can employ any of either the traditional or modern approach. The best method to be employed will depend on the factor surrounding the investment. Payback period is a traditional technique developed for risk adjustment in development appraisal. It focused on the time required to recoup the original cash outlay on the project. The decision to accept or reject in this technique was based on whether or not the project would pay back within desired time and as a ranking criterion, the development project with shorter payback time will ranked higher than those with longer payback periods (Ojo, 2006). The payback period was considered as a measure of risk, because of the uncertainty surrounding the future. This technique was criticized on the bases of not considering the time value of money. The discounted payback method was developed to overcome the criticism against the payback period method that it took no account of the time value of money. This technique focused on the time required to recoup the initial cash outlay in present value in cash flow terms. The technique is a hybrid of Net Present Value method of appraisal.

The Accounting Rate of Return as an appraisal technique measures the rate at which profit is expected to be made from an investment. The profit generated from the property development is expressed as a percentage of the capital outlay. The computation involved in this method of property development appraisal could be carried out in three ways using the Optimum Criteria (Peak profit), First Year Return and Average Profit Methods. In this appraisal technique, the preferred project would be the one with the highest Accounting Rate of Return. The technique had the advantages of being simple to understand and calculate. However, the major weaknesses were its failure to consider both the time value and life differentials of the development project in its computation of the Rate of Returns.

There were several ways of Computation and result could be subjected to misinterpretation unless the basis of computation is clearly stated. In order to overcome most of the identified problems, better development appraisal techniques were developed that took into consideration the time value of money. Such methods were the discounted Cash Flow methods, the Net Present Value (NPV) and Internal Rate of Return methods. Other variants such as Net Terminal Value method and Discounted Profitability Index were equally developed for property development appraisal. Baum and Crosby (1988) undertook a comprehensive review of deterministic and probabilistic techniques employing a methodology of numerical examples. Their critique of the techniques is similar to those of Sykes and Patrick (1983). Their contribution was the recommendation of new techniques - the “Sliced Income” technique as a preferred alternative to the Risk Adjusted Discount Rate and Certainty Equivalent techniques in guiding UK investors when selecting between alternative investments. In essence, this method is a hybrid of the Risk Adjusted Discount Rate and Certainty Equivalent techniques.

In order to provide more rational and informed decisions before the commencement of property development, the Risk Adjusted Cash Flow Approach - otherwise known as the Certainty Equivalent Approach – was developed by Hillier (1963, 1964) in the United States of America. His approach to adjusting for project’s risk is to first adjust the cash flows of the investment to cash flows that were considered achievable with a reasonable and calculable degree of certainty. The approach involved developing probability distribution of possible present values associated with cash flow forecasts. Standard deviations of the perceived normal distribution of the expected cash flow were then used to objectively select the certainty equivalent income. Risk and return were then analyzed in terms of the probability of earning any specific present value, net present value or profitability index. Hillier’s model was commendable in adjusting for downside risk explicitly, but it is criticized in regard to the subjectivity in the choice of the cash flows. Hertz (1964) developed an alternative approach. The Monte Carlo simulation approach which has more relevance to development appraisals was employed.

## **RESEARCH METHODOLOGY**

The target population for this study is the Estate Surveyors and Valuers who are duly registered with Estate Surveyors and Valuers Registration Board of Nigeria (ESVARBON) and are practicing in Akure. Twenty-two (22) practicing Estate Surveying and Valuation firms in Akure

duly registered with NIESV. Questionnaires were administered to these twenty-two (22) out of which only sixteen (16) were retrieved and employed for the validity of the study. Closed/Structured questionnaires were designed and distributed to the targeted population. These questionnaires contained all the relevant information necessary to arrive at a reasonable conclusion. Descriptive statistics was then used in the analysis of the collected data. The result from the analysis of these data form the basis for inference made in this study.

## RESULTS AND DISCUSSION

**Table 1: How often do you receive instruction to execute feasibility and viability appraisal?**

<b>Response</b>	<b>Not at all</b>	<b>Less Frequent</b>	<b>Regularly</b>	<b>Most Often</b>	<b>Total</b>
<b>Percentage</b>	12.50	43.75	12.50	31.25	<b>100.00</b>

Source: Field Survey, 2014

In Table 1, the responses as to the frequency of instructions received for carrying out feasibility and viability appraisal was revealed. The Table shows that 43.75% of the respondents less frequently secure instructions to carry out feasibility and viability appraisal, 12.50% regularly or never received such instructions while 31.25% most often received such instructions. This implies that most of the property investor's do not take the issue of professional advice more serious before embarking on developmental project by not engaging the services of feasibility appraisers before commencing construction works.

**Table 2: Frequency of Usage of Feasibility and Viability Appraisals Techniques**

<b>Techniques</b>	<b>Mostly Use Always</b>	<b>Always but not mostly Use</b>	<b>Rarely Use</b>	<b>Never Use</b>	<b>Mean Value</b>	<b>Rank</b>
NPV	62.50	25.00	12.50	0.00	3.50	1
IRR	50.00	31.25	12.50	6.25	3.25	2
Payback Period	18.75	50.00	18.75	12.50	2.75	3
ARR	12.50	12.50	31.25	43.75	1.94	4
Sensitivity Analysis	12.50	18.75	25.00	37.50	1.94	4
Residual	12.50	12.50	25.00	50.00	1.88	6
Risk Adjusted NPV	0.00	25.00	18.75	43.75	1.56	7

Source: Field Survey, 2014

Table 2 showed the frequency of the techniques used for feasibility and viability appraisals by Estate Surveyors and Valuers. The opinions were graded in the order of usage NPV is the most adopted appraisal technique ranking 1<sup>st</sup> with a mean score of 3.50. This is closely followed by IRR and Payback period as they both ranked 2<sup>nd</sup> and 3<sup>rd</sup> respectively with mean scores of 3.25 and 2.75. This implied that the first three (3) techniques are the most common methods the appraisers were familiar, hence the preference for its high usage compare to other methods.

**Table 3: Reliability of the techniques used for feasibility and viability appraisals**

<b>Appraisal Techniques</b>	<b>Highly Reliable</b>	<b>Reliable</b>	<b>Averagely Reliable</b>	<b>Not Reliable</b>	<b>Mean Value</b>	<b>Rank</b>
NPV	62.50	25.00	12.50	0.00	3.50	1
Payback Period	50.00	37.50	12.50	0.00	3.38	2
IRR	50.00	31.25	12.50	6.25	3.25	3
Sensitivity Analysis	31.25	25.00	18.75	25.00	2.63	4
Risk Adjusted NPV	12.50	37.50	37.50	12.50	2.50	5
ARR	18.75	18.75	43.75	18.75	2.38	6
Residual	12.50	25.00	37.50	25.00	2.25	7

Source: Field Survey, 2014

The perception as to the reliability of the viability appraisal techniques were revealed in Table 3. The respondent's opinion shows that NPV technique is the most reliable appraisal technique with a mean score of 3.50. This is followed by payback period which ranks 2<sup>nd</sup>, IRR ranked 3<sup>rd</sup> while sensitivity analysis, Risk adjusted NPV, ARR and residual method ranked 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> respectively. This implies that despite the non-usage of most of the modern techniques by the appraisers they still regarded the modern techniques as a reliable method. This can be attributed to the fact that it takes into consideration the time value of money.



**Table 4: Awareness, understanding and applicability of the following modern appraisal techniques**

<b>Appraisal Techniques</b>	<b>Aware</b>	<b>Not Aware</b>	<b>Understand</b>	<b>Don't Understand</b>	<b>Can Use</b>	<b>Can't Use</b>
Weighted Average	56.25	43.75	31.35	68.75	18.75	81.25
Monte Carlo Simulation	62.50	37.50	25.00	75.00	12.50	87.5
Sensitivity Analysis	62.50	37.50	25.00	75.00	25.00	75.00
Risk Adjusted NPV	43.75	56.25	18.75	81.25	25.00	75.00
Certainty Equivalent	50.00	50.00	0.00	100.00	0.00	100.00

Source: Field Survey, 2014

The level of awareness, understanding and applicability of those modern appraisal techniques that incorporates risk was revealed in Table 4. The responses showed that 62.5% are aware of the availability of Monte Carlo Simulation and Sensitivity Analysis, 56.25% and 43.75% aware of Weighted Average Approach and Risk Adjusted NPV respectively as a tool for incorporating risk while 100%, 75% and 81.5% of the respondents opined that despite the availability of the tool, they do not understand the usage which therefor contributes to the high degree of avoidance of application of the method. This connotes that most of the Estate Surveyors in the area do execute feasibility and viability appraisal. Thus they do make use of appraisal techniques that they are conversant with its application as they are aware of the more accurate the modern method that incorporate risk but they can adopt it due to its sophisticated nature.

## **CONCLUSION**

In Nigeria, the application of appropriate appraisal technique that can cope with present day situation has become a difficult task for most appraisers. This can be attributable to their critical analysis of the tools as one too cumbersome and requiring laborious mathematical application. Most appraisers in the course of undertaking feasibility assignment have widely embraced the use of NPV method as it is seen as the most reliable technique for investment appraisals. The overriding reason can be adjudge to being its recognition of the time value of money as the future is uncertain. Modern appraisal that incorporate risk and uncertainty are fully embraced in practice as established in the study. The modern appraisal techniques incorporating risk factors were developed to deal with the problems pose by the traditional method of appraisal. These methods has been tested and found to be more effective for correcting the problems encountered through wrong investment advice as a result of the use of traditional method of appraisal.

## RECOMMENDATIONS

- (i) Appraisers should consider the unstable nature of the economy in the course of executing their assignments so that the changing nature of the economy will not lead to a failed project as a result of the investment decision taken.
- (ii) The Nigerian Institution of Estate Surveyors and Valuers should bring up policies that will bridge the gap between the academia and the practicing surveyors so that both parties can improve on their learning culture in order to cope with current trend of globalization.
- (iii) Estate Surveyors and Valuers should embrace the use of modern appraisal techniques that incorporate risks while executing the task of investment appraisal in order to enhance appraisal accuracy.

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