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***Research paper***

# Title Risk Identification Techniques in Valuation and Investment Appraisal

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**Abstract**

This study investigated the risk analysis in property valuation and investment appraisals in Nigerian estate firms, this was carried out through the risk identification techniques. Risk and uncertainty are the inherent part of the valuation and appraisal process. Self-administered questionnaire was employed using likert scaling to collect the data from 95 estate surveying and valuation firms, while the data was analyzed using descriptive statistic. The study revealed that the most peculiar risk to real estate valuation and investments is legal risk base on the ranking. Investment appraisal reports however indicated that sensitivity analysis is the most used technique. In view of the above, the certainty equivalent and Monte Carlos stimulation was recommended if all things are equal in respect of availability of data and a stable economic situation. The study identified legal risk is the major risk found in valuation and investment appraisal, thus the result indicated that, Surveyors in the study area have very little knowledge of risk and uncertainty as revealed in their reports. Finally it was recommended that, a lot need to be done on the level of awareness and understanding valuers toward incorporating risk and uncertainty in property valuation and investment appraisal.

***Keywords***: *Appraisal; Investment Appraisal; Property Valuation; Risk; Techniques*.

## 1. Introduction

Valuation (real estate appraisal) is the process of estimating price in the market place. It is a professional practice that entails the estimation of value (or most likely selling price) of property assets. (1) Described such appraisals as pre-development feasibility/viability assessments which provide a client with a measure of the likely project costs revenues and profitability involved in undertaking a development scheme. Thus, the appraisal/valuation process undertake by practitioners involve various degree of risk assessment, valuation/appraisal opinion are subject to uncertainty. Hence, the profession of real estate appraiser/valuers arises because each real estate asset is different and heterogeneous in nature and therefore its investment portend various degree of risk. Investors venture into business with the sole aim of getting satisfaction from the business venture. This could either be for profit or for providing social services. In order to achieve these aim, attention to the project brief is important so as to understand what the investor strategic objective of venturing in to the business. Every rational investor should be interested in an investment that command high rate of return with a manageable level of risk. However, investment decisions are a function of the interplay of risk and return factors. Any investment decision invariably involves a trade-off between risk and return. (2) therefore the process could be reduced to finding the investment opportunity with the best risk-return ratio. There are critical factors which affect real estate investment delivery, among which is the investment value drivers. When describing a property investment as being risky some relative measure is being implied: the rents expected in the future may not be realized; Increases in rent will not occur at the time expected or the property may become vacant and take some time to re-let; the principal sum invested may not be realizable, may not increase with time or may fall with time; Market money rates may move against property; Other property investments will outperform the subject property; The long term property investment may be out-performed by short-term investments. This uncertain factors mentioned are very important consideration in valuation/appraisal decision.

Uncertainty occur due to the imperfect information in real estate market on all the inputs that can be used in the valuation analysis (3). The terms risk and uncertainty are often used interchangeably. Risk is the probability that certain scenario will occurred and is seen as a likelihood of uncertainty. (4) Opined that risk/return is fundamental focus in modern investment analysis. Sophisticated investors, especially in more advanced property markets like those in the US and UK, are increasingly requiring downside risk analysis as well as adjustment from valuers/appraisers in valuation and investment analysis (5) (6). Risk and uncertainty are inherent parts of the valuation process because appraisers/valuers are unable to specify and price accurately all current and future influences on the value of the asset (7).

In this regard, property valuation profession in Nigeria has consistently delayed to accommodate the new challenges of clientele in the country who are continuously attaining some higher level of sophistication (5). This is a trend bearing in mind that inadequately prepared property valuations have had far reaching negative consequences across the globe. However, this study focus to identify the various types of risk affecting real estate valuation and investment appraisal.

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## 2. Concept of Risk and Uncertainty in Property Valuation and Appraisal

An Risk is defined in terms of the variability of the expected return i.e. the degree to which actual return could vary from expected return measured either by means of simple range or a complex technique (8). (9) also defined risk as the extent to which the actual outcome of an action or decision may diverge from the expected outcome.

Risk is a combination of internal and external factors, which make return projections liable to vary from the actual. In decision-making, three situations arise. These are certainty, uncertainty and risk. A risky situation implies a measurable likelihood of the occurrence of an event. In other words, it is to the decision maker that a certain event is likely to occur and there is likelihood of measuring the probability of its occurrence while uncertainty means that the probability of the occurrence of a particular event is not known. An unknown number of possible outcomes and number of significant data on their chances of occurring is known. Thus the difference in risk and uncertainty is that while the probability of outcomes are known or can be estimated for risk, the probabilities of possible outcomes are neither known nor can be estimated for uncertainty.

Certainty involves explicit knowledge with a possible outcome on which decision is to be taken. Often times, most decision makers have alternatives and thus faced with the issue of risk inherent in each alternative, while such alternatives sometimes incorporate risk and uncertainty of varying degrees. (10), laid a foundation on the distinction between risk and uncertainty. Uncertainty was presented as synonymous with the lack of knowledge and information on possible outcomes of a scheme. Risk on the other hand, was offered as a situation where alternative outcomes are identifiable, together with a definite statement of such outcomes. In the analytical sense, risk was regarded as the description of the extent to which the outcome of an action or decision may deviate from the expected outcome. Source? An action or decision was therefore described as risk free when its consequences are known with certainty (11).

(12) Stated that a distinction between the two terms would be useful in a country like Nigeria for the purpose of peculiarity between areas with an incomplete databases and institutionalised forecasts of economic trends from areas where some forecasts of development variables and their probabilities can be made.

Many factors give rise to risk encountered in investment analysis. These include political factors, taxation laws, improvement in technology, general economic level, consumer preferences, labour laws and relations etc. Some of these risks are specific to a company or decision maker while others are non-specific but apply to the whole spectrum of decision makers or real estate market.

### 2.1 Sources of Direct Property Investment Risk

There are two types of risk:

*i.* Systematic Risk; Affects all investments; Inflation, interest rate movements, economic cycles; Taxation, Legislation and Structural risk(s); cannot be diversified away.

*ii.* Unsystematic Risk; Affects particular investments; Business, financial, liquidity risks, Tenant, Sector, Planning and Legal risk(s). However, In theory these can be diversified away using a portfolio of Investments.

### 2.2 Sources of Risk in Valuation and Investment Appraisal

A variety of ways of distinguishing between different types of risk have emerged over the years. For example, (4) subdivide property risks into tenant risks, sector risks, structural risks, taxation risks, planning risks, legal risks and timing risks.

(13) Classified risks into two perspectives, firstly the perspective that refers to the possibility of achieving a lower return than expected. This signifies that, the wider the range of possible outcomes from an investment decision, the more risky the investment. (14) Categorized taxonomy of risk sources as planning risk, structural risk, legal risk, taxation risk, comparative risk, timing risk and default risk. (15) Point out eight [8] types of down side risk that can affect property investment. Thus they include:

i. **Planning Risk**

This is the chance that government planning policies may influence property investment values positively or negatively. These planning policies vary widely between regional and local policies amongst others.

ii. **Structural Risk**

This arises as a result of refurbishment and re-building arising from huge repair cost, high maintenance amongst others. It however demand changes such as changes in fashion and technological changes which are also relevant in structural risk.

iii. **Legal Risk**

Property investment decisions are usually governed by a number of statutory regulations, this were used in establishing property development decisions.

iv. **Taxation Risk**

In Nigeria for example, the government usually taxes property investors, such taxes include: Capital Transfer Tax (Probate), Capital Gains Tax (CTT), Tenement Rating, Stamp Duties, Consent Fees, Development Charges, etc. Taxation risk describes the likelihood of new taxes to be imposed or existing ones be reviewed. A typical illustration the introduction of the controversial land use charges 2001 was introduced in Lagos States.

**v. Tenant Risk**

The ultimate desire of all rational investors (property developers) is to maximize profit. This is achieved in property development by putting up the property for sale or letting immediately after completion. However, the possibility of voids (usually in the case of long lease), the possibility that a tenant might go into bankruptcy or insolvency, tenants' failure to perform repairing and insuring obligations, the risk of or the realization of a lump sum in terms of the capital value.

**vi. Comparative Risk**

In comparative risk, an investor may have about the actual performance of his investment against his target, he will also be aware of his "opportunity cost risk". This signifies that, by undertaking an investment, he has presumably turned down other opportunities and will be conscious of the returns he could have obtained elsewhere.

**vii. Timing Risk**

The turning of investment is critically important to investors. The element of risk is crucial in refurbishment and new property development. Another aspect of timing risk is the length of time that will be involved in selling or letting the property as it relates to the liquidity of the property.

**viii. Default Risk**

This can be viewed from two perspectives: The first relates to the chances that the developer may not recoup the anticipated capital necessary to amortize the loan and hence portray a bad image of

himself in the face of the financiers. The second refers to the chances of tenants going broke and not being able to pay their rent as at when due.

**ix. Environmental Risk**

These are the risk in the neighborhood where the development would take place. This type of risk can be natural or artificial.

**x. Political Risk**

This is the political atmosphere in the country which can be stable or unstable depending on the political structure on ground that might be of influence within and outside political boundary of the country.

## 3. Methodology

All The description of the methods used in the presentation and analysis of the data collected during the study has been made. The results have been presented using frequency distributions and percentage. There are three hundred and seven [307] Estate firms in Lagos state according to the directory of (16) 70% of the respondents were intended to be examined, that is two hundred and sixty [216] but through the survey it was observed that for the past 10yrs only ninety five [95] of these firms have carried out feasibility and viability report, Eighty [80] questionnaires were retrieved making a total of 84% response rate. In addition, forty [40] feasibility reports were retrieved thus, it was used to answer the objectives stated in the study. The statistical software package [SPSS Version 20.0] was used to run a frequency, percentage, Mean Item Scores [MIS] based on 5 point likert scaling this is because the data required ranking, thus spearman ranking was employed in descending order.

## 4. Findings

**Table 1:** Provision for Risk in Investment Appraisal Study

| Risk types | Very frequent | Frequent | Occa-sionally | Rarely | Nev er | MI S | Rank-ing |
|---|---|---|---|---|---|---|---|
| Planning | 29(36.3 %) | 51(63.8 %) | – | – | – | 0.9 25 | 5 |
| Structural | 40(50.0 %) | 20(25.0 %) | 13(16.3% ) | 7(3.8% ) | – | 0.9 50 | 3 |
| Legal | 43(53.75 %) | 19(23.75 %) | 12(15.0% ) | 6(7.5% ) | – | 1.0 50 | 1 |
| taxation | 26(32.5 %) | 40(50.0 %) | 7(8.8%) | 7(8.8% ) | – | 0.9 25 | 5 |
| Tenant | 24(30.0 %) | 31(38.8 %) | 19(23.8% ) | 6(7.5% ) | – | 0.9 50 | 3 |
| Compara-tive | 31(38.8 %) | 37(46.3 %) | 6(7.5%) | 6(7.5% ) | – | 1.0 25 | 2 |
| Timing | 40(50.0 %) | 24(30.0 %) | 16(20.0% ) | – | – | 0.8 50 | 7 |
| Default | 30(37.5 %) | 40(50.0 %) | 10(12.5% ) | – | – | 0.8 00 | 8 |
| Environ-mental | 29(36.3 %) | 7(8.8%) | 37(46.3% ) | 7(8.8% ) | – | 0.7 50 | 9 |
| Political | 6(7.5%) | 25(31.3 %) | 31(38.8% ) | 18(22.5 %) | – | 0.7 25 | 10 |

Source: Field Survey, 2015

As depicted in Table 1 above, the ranking or the risks types based on MIS indicate that legal risk has the highest mean score with 1.050, followed by comparative risk with mean score of 1.025. Structural risk and tenant risk have the same mean score of 0.95, on the other hand planning risk and taxation risk has a mean score of 0.925. Timing risk, default risk, environmental risk and political risk has mean score 0.850, 0.80, 0.75 and 0.725 respectively. This refers that the Estate Surveyors are concerned mostly about Legal risk in carrying out real estate investment appraisals. A critical look at this might mean that some other risk like planning and taxation requires some forms of legal issue, which would affect the market value of a property. In addition, legal risk is influenced by the changes in the tax laws, whereas environmental regulations was influenced as a result of the zoning regulations and the ability to manage the process of getting permits.

**Table 2:** Risk Adjustment Methods Used for Accounting the Risk in Investment Appraisal

| Risk techniques | Frequency | Percent |
|---|---|---|
| Stochastic decision | 0 | 0 |
| Capital asset pricing model | 4 | 5 |
| Risk adjustment with sliced income | 5 | 6.25 |
| Sensitivity analysis | 50 | 62.5 |
| Risk adjusted discount rates | 11 | 13.75 |
| Certainty equivalents | 9 | 11.25 |
| Monte Carlo simulation | 1 | 1.25 |
| Total | 80 | 100 |

Source**:** Field Survey, 2015

As shown in Table 2, the respondents' choice of the technique was used for reporting risk in property appraisal report, this is a sensitivity analysis since it has the highest frequency of 62.5% followed by risk adjustment discounted rates with 13.75%. The most interesting aspect of this results is that, it agrees with findings in (15) and (17). Interestingly, the respondents choice appears to be based on the technique they are familiar with and aware of the most suitable technique that could be used to communicate risk. Which is the sensitivity analysis method. However, the choice from among the various alternative methods of calculating risk but the technique for accounting risk must be based on one that is theoretically risk explicit, probabilistic, and practically acceptable to all. With some reflections on the data and literature, It must possess ease of use to the practitioners and understanding ability to their clients. Other approach such as certainty equivalent cash flow could be recommended as a better technique as it quantified risk through income cash flow (not by subjective adjustment of the discount rate as in RADR). Standard deviation of the perceived normal distribution of the expected cash flows are then used to select the certainty equivalent income. Monte Carlo Simulation would have been another more appropriate technique of the risk adjustment methods because its application appears to more logical, analytical and objective but one is consequently worried that the recommendation of such technique in a country as Nigeria with its peculiar problems like absence of data banks and computer proficiency may present practical difficulties as nobody ever used in it in practice from the survey of data. In the light of these, sensitivity analysis is however still the most frequently used technique for risk adjustment in investment appraisal report.

## 5. Conclusion

The need to properly account and communicate risk and uncertainty in our report, to produce a more objective and acceptable value estimate through the use of the statistical based approach and risk analysis cannot be over emphasized. This is because the better the understanding of risk analysis, the more risk is reduced in investment. This, in turn would bring desirable results. However, the study identified legal risk as the most frequent type of risk in the study area, whereas sensitivity analysis is the most often technique employed by Estate Surveyors and Valuers in incorporating risk and appraisal, but it was recommended that certainty equivalent cash flow and Monte Carlo simulation can be used.

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