

# **Risks Management in Real Estate Development<sup>1</sup>**

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## **ABSTRACT**

Risk is a common feature in the construction industry and the process of its management is considered pertinent at different stages of real estate development process. Risk emanates from several sources which are categorized into internal and external sources. There are six major stages of project development (internal sources) and each stage has some peculiar risks associated with it. The research also identified environmental and neighbourhood risks (external sources) which range from environmental pollution, land degradation, flooding, and soil erosion to hostile nature of the host community to the project construction team. This research has shown that the prevailing risk sources depends on the project site, planning policies, building materials and workers on site, experience of site manager/engineer. It is pertinent to emphasize that the problems associated with risks in real estate development cannot be totally eliminated, therefore the need to adopt appropriate management strategies to eliminate or at least reduce the attendant effects on real estate development.

## **INTRODUCTION**

Risk is a major element of real estate investment as in other investments. It is inherent in each project within the construction industry in different forms and at different stages of construction. It is a consequential of poor technology, economic condition, political situation and environmental factors such as topography and changing weather conditions. These factors constitute threats with attendant negative impact on the project execution. According to Ratcliffe and Stubbs (1996), risk is the very business of property development and uncertainty, the prevailing climate within which development takes place. As an investment, some properties have a high-risk profile while others have low profile. This depends on the type, nature, location and possibly, the lease term of the property. The goal of an ideal investor is to embark on any project or scheme that involves minimum risk with an expectation of maximum profit.

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Risk may be examined on the basis of the fundamental components or sources of risk and making predictions on how future returns will be affected by each fundamental risk (Geddes, 2002). In any real estate investment setting, there are bound to be areas of concern but its extent would be a function of the responses of the investor. Elsinga and Hoestra (2005) identified environmental risks which are disasters that affect human lives and properties, as well as the values of such properties within a given environment, as a result of actions of man and some natural phenomenon. They listed such disasters as pollution, land degradation, flooding, soil erosion and atmospheric contamination. The pollution may come from air, water or noise pollution.

An investment is considered risky when the investor is not sure of the expected returns which he will realize from the investment. Investment options that are highly risky in nature needs to have high return potentials which can attract risk prone investors to venture into such areas of investment. Risk prone investors offer to take higher risk as against risk averse investors who hesitate to take certain risk. Over time, the variance of actual return from expected return can be measured and used to help determine probability level. The degree of variability of the actual return from the estimated return of investment as well as the possibility of loss of capital reflects the risk elements of investment (Ubom, 2010). This clearly indicated that where the degree of variability is higher, the risk involved in the investment is certainly higher and vice versa. Thus, the influence of risk on real estate investment have forced many property investors to adopt wrong development strategies which result in poor construction leading to collapse of several buildings and structures in different urban centres of Nigeria.

Since risk is a common feature of all forms of investment, the process of its management is considered the main stay of major development process. Risk management as it relate to real estate development is a collaborative effort to drive the project to the targeted goal through the process of identifying and evaluating the project at different stages with the aim of mitigating any risks that may cause harm to workers, damages to property, the project site and the surrounding environment.

## **SOURCES OF RISK IN REAL ESTATE INVESTMENT**

Risk emanates from several sources which are categorized into internal and external sources. The internal source are those the project manager can control which often emanate from construction industry, project sites and other human factors; while external source are outside the project manager control such as economic conditions, political conditions, legal, natural

hazards, social conditions (Baraka, et al, 2019). Other forms of risk are business risk, financial risks, market risk, political risk, tenant risk, sector risk, structural risk, taxation risk, planning risk, comparative risk, timing risk and holding period risk, risk of unplanned obsolescence as well as management and/or union risk, interest rate risk (Bowlin et al, 1980; Okafor, 1983; Messner et al, 1984; Dubben and Sayce, 1991; Ajayi, 1998 and Udoudoh, 2016). These risks are collectively described as investment risk. It is pertinent to categorize the identified risks in order to determine their root causes; thus enabling the project team to develop mitigation approaches to address it as it occurs. Therefore, an examination of potential risk sources is fundamental to real estate investment.

**(a) Economic Risk:** The economic situation of a community, region or the nation in general may affect building construction vis-à-vis subsequent market situation. This results to change of use of many properties. In this manner, some properties that were developed for special purposes such as cinema houses are being converted into churches or shopping malls to meet the prevailing economic condition against original intention. A change in the status of a community (urban or rural) can lead to a positive or negative effect on the cash flows from an investment. Thus, the need to introduce and enforce certain development control measures to regulate conversion of existing land uses to some other physical use in line with existing zoning policies.

**(b) Financial Risk:** This represents additional risk placed on the property developer as a result of financial leverage. Most property development is funded from equity while others are by borrowed capital. An average income earner who plans to build his house from savings and actually commenced the project, may find it difficult to complete the project if his salary is stopped or does not come regularly as expected for any unexpected reason. Similarly, a political office holder may face the same situation if his appointment is untimely terminated. Where this happens, there is the risk of raising required money to embark on the project to a successful completion. This unexpected development adversely affects the developer's planned capital budgeting decisions.

**(c) Business Risk:** Business risk may be caused by market situation, fluctuation in the prices of building materials, variation in cost of labour, fluctuation in earnings or future operating income and/or change in management policy or review in rental income. There is also the risk of security of invested capital and expected income from the investment. For instance, a tenant may decide to quit his apartment leaving the units to remain unoccupied for an unknown duration. During this period of void, the property yields no income. Business risk has both positive and negative impact on project objectives which reflects the uncertainty of cash flows generated by real estate investor.

**(d) Market Risk:** This brings to fore the supply of, and demands for real estate products in the market. It has to do with the possibility of an investor's ability to develop and that of the intending users to purchase or rent the available properties in the market. This originated from adverse market reactions to animated government policies that are inimical to the performance in the property market such as difficulty in accessing land for housing development, title registration, housing finance, rental trend, among other factors. The fluctuation in revenues or earnings of the property as a result of pressure in the supply and demand of existing products is a risk to investors. The risk is also associated with a depressed return from outright pessimism on the part of property market participants.

**(e) Timing Risk:** The question of timing has a bearing on investment risk. According to Dubben and Sayce (1991), it enables the best conceived scheme to be carried out at the most appropriate time, with least risk encountered. Where the development site is acquired through site and service scheme or in other public estate, the lease stipulates the time frame within which the beneficiary should complete development on the approved site. Apart from the length of time it may take to complete a contemplated project, there is also the risk in the length of time that the completed project would be sold or let to the class of tenants the developer has in mind. This brings to fore the concept of critical path analysis which compares the normal times and costs required to complete a given project through networking with the time it would have taken if the same project is to be carried out under a crash programme.

**(f) Physical Risk:** This is particularly relevant to direct property investment. It comes by way of physical wear and tear of the property which occurs naturally as a result of environmental degradation, flooding, soil erosion which is consequence of climatic change or unplanned physical growth. It can also occur through other human activities such as fire outbreak or mechanical fault. The changing taste for modern design and building technology can cause a premature setting in of obsolescence in older property. This requires the spending of additional money which was not originally budgeted.

**(g) Risk of Urban Expansion:** In the property market, there is a tendency that certain categories of buildings may become obsolete in terms of design, location or use as a consequence of urban growth. This happens when the central business area of a city expands to incorporate an area that was originally developed as a residential neighbourhood. Where this happens, certain categories of building may no longer suit their original location thus requiring relocation or change of use. On the other situation, the process of urban expansion and incorporation may

set in, where a city expands to submerge the surrounding unplanned villages at the city's periphery. This calls for renewal programme where the affected areas are made to undergo re-planning with unwanted buildings removed to create room for new types of buildings.

## **RISK ANALYTICAL TECHNIQUES**

Risk analytical techniques are used in real estate development to appraise and where necessary to reduce the effects of any variations on the general direction of the project implementation. It is a situation where the possibility of happening or non-happening of an event can be quantified and measured as differentiated from uncertainty in which its possibility of happening cannot be measured (Enever and Isaac, 1994). The degree to which actual performance may exceed the expected performance is called the upside potential, while the amount by which it falls below expectation is known as the downside risk. Investors are concerned with the upward potentials, particularly when the investment is funded by borrowed capital. Upward potential is the actual bonus over and above the targeted return (Dubben and Sayce, 1991). Thus, where development appraisals are prepared, they should present at a glance the expected risk inherent in the proposed project in terms of probability measurements of the most sensitive variables to both the developer and financier.

In the opinion of Chinneck (2000), the evaluation of project risk depends on two basic principles: the appraiser's ability to identify and understand the nature of variations and the possibilities surrounding the key project variables; and the application of adequate tools and techniques to process implications on the risk on the project's returns. From the foregone, risk analysis can be seen as a basic aspect of any development appraisal which enhances the quality of on-going project. In the course of investment decision, it provides the investor with certain measures of the variance associated with the estimated project return. It is an integral part of any project development as it is the desire of every developer or investor to realize the project goal. The application of risk analysis for project development have been documented by many scholars, including Savvides (1994), Panel (1997), Ajayi (1998), Wiley (2001), Ogunba (2002), Xu (2002), Ogbuefi (2002) and Udoudoh (2016).

The techniques used for risk analysis depend on the quality and quantity of data and information available to the project appraiser or analyst; thus, the adopted appraisal methods can be qualitative or quantitative. The qualitative analytical technique is adopted when the level of risk is minimal and numerical data available are not adequate for a detailed quantitative analysis. It requires the application of questionnaire, interviews, discussions, evaluation of specialists and experts' opinions. It is based on professional judgment, experience and initiative.

The quantitative appraisal techniques are used when circumstances require taking financial investment decision that will enhance appropriate capital utilization. The techniques include Cost Benefit Analysis, Pay Back Technique, Cash Flow Appraisal Technique (where we compute the Internal Rate of Return, External Rate of Return and Net Present Value), Scenario Analysis, and Sensitivity Analysis. The application of Capital Investment Appraisal Techniques (CIAT) justifies the basis of capital injection on projects.

**AIM AND OBJECTIVES OF THE STUDY**

The aim of this study is to examine how potential sources of risk can be managed while embarking on real estate development. The objectives include:

- i) To identify the different stages of real estate development at project sites;
- ii) To determine the various development activities at each project stage;
- iii) To examine the nature of risk at each stage of project development; and
- iv) To come up with appropriate management strategy to mitigate identified risks.

**REAL ESTATE DEVELOPMENT**

Real estate development falls into six (6) major categories, namely, site acquisition, preparation of development plans, sourcing for finance, building construction, provision of estate infrastructure and estate management. The various stages of real estate development and their attendant risks are outlined in the table below:

**Table 1: STAGES OF REAL ESTATE DEVELOPMENT AND ASSOCIATED RISKS**

S/N	STAGES OF DEVELOPMENT	ACTIVITIES	NATURE OF RISK
1	Site Acquisition	Scouting for suitable site	i) Ascertaining the actual land owner. ii) Risk of being dupe by agent. iii) Accessibility to the site
2	Preparation of Development Plans	i) Land surveying ii) Preparation of building plans iii) Approval of building plans iv) Issuance of C-of-O	i) High cost of surveying ii) Ability of contractors to interpret the building plans iii) Delay in issuance of C-of-O
3	Sourcing of Finance	Consulting mortgage/ financial	Problem of meeting stipulated

		institutions for funding	collateral provision.
4	Building Construction	i) Excavation and pouring of foundation ii) Blockwork and Roofing iii) Finishing	i) Adherence to plans specifications ii) Uncertainty in prices of building materials iii) Use of inferior building materials
5	Provision of Estate Infrastructure	Provision of access roads, electricity, water and security at Site	i) Lack of accessibility to project site, water, electricity and security at site result in high cost of development.
6	Estate Management	i) Letting and Leasing ii) Estate maintenance iii) Rent collection	i) Selection of tenants ii) Default in maintenance iii) Default in rent payment

Author's fieldworks (2016a & 2018)

Real estate development commences with sourcing and acquisition of a suitable piece of land for the envisaged project. Where an intending developer is able to acquire a suitable piece of land, the next stage is for him to prepare all the development plans including survey plans, building plans, bills of quantities, engineering drawings etc. These are required for the processing and issuance of certificate of occupancy. Where the developer does not have enough funds from equity capital to embark on the project, he has to secure same by borrowing from mortgage and other financial institution. Thereafter, he requires the services of professional builders who can interpret the building plans and use quality building materials for the execution of the project.

The quality of real estate development in any urban centre is an index of the people standard of living. Many development sites are confronted with the problem of inaccessibility, lack of basic estate infrastructure such as electricity and water from public mains, and safety of the building materials on project sites. These constitute serious risk to many real estate investors. The last stage in real estate development process is how to manage the built estate to attain the set goal. At this point, the investor is faced with problems of selection of responsible tenants who will keep to the lease agreement, such as payment of rent when due and maintaining the estate to enhance sustainability. These are necessary as default in rent payment and lack of maintenance constitutes serious risks to real estate investors.



**RISK MANAGEMENT STRATEGY IN REAL ESTATE DEVELOPMENT**

Studies on risk management revolve around using the right team of professionals in construction industries and financial institutions with relevant experience in building construction. Ekong (2019) noted that the task of risk management includes identification, monitoring, prevention, mitigation and risk transfer, and preparation for attending to recovery and reconstruction from damages caused by emergencies and disasters. She outlined the key elements in risks management process as a chain which commence with identification of risks, measurement of risks, evaluation/assessment of risks, preparation of management/strategic plan, implementation of the management plan and review of the process from time to time to reflect current challenges.

**Table 2: RISK MANAGEMENT STRATEGY AT EACH PROJECT STAGE**

S/N	STAGES OF DEVELOPMENT	NATURE OF RISK	MANAGEMENT STRATEGY
1	Site Acquisition	i) Inability to ascertain the actual landowner. ii) Risk of being dupe by agent. iii) Inaccessibility to project site	Ascertaining the actual landowner.
2	Preparation of Development Plans	i) High cost of surveying ii) Inability of contractors to interpret building plans iii) Delay in issuance of C-of-O	Consulting licensed professionals to produce land and other building documents
3	Sourcing of Finance	Problem of meeting stipulated collateral provision.	Presenting genuine and relevant documents to banks.
4	Building Construction	i) Adherence to plans specifications ii) Uncertainty in prices of building materials iii) Use of inferior building materials	Employing experienced building professionals in the building process.
5	Provision of Estate Infrastructure	i) Lack of accessibility to project site, ii) Lack of water, electricity at site iii) Security at project sites	Payment of stipulated sum to the utility agencies; Settling the community and Youths organizations for smooth.
6	Estate Management	i) Selection of tenants ii) Default in maintenance iii) Default in rent payment	Giving out the estate to real estate consultants for management.

Author’s Fieldwork (2020).



There are six major stages of physical development and each stage has some peculiar risk problems associated with it. The development commences with sourcing and acquisition of a suitable piece of land for the envisaged project. The major risk facing investors at this stage is their inability to ascertain the actual landowners to avoid being dupe by fake agents. Where the real landowner is identified, that problem is solved. Where the vendor and the vendee had completed the purchase transaction, the vendee is then faced with how to secure a statutory or customary right of occupancy and permission to embark on the project. This is either delayed by the statutory government department saddled with the responsibility to process the documents or by the State Governor who is supposed to sign the document. However, where all the documents are genuine and relevant payments made and submitted, the appropriate signatory has no reason to delay appending his signature. But, where the delay is envisaged, the Land Use and Allocation committee usually gives the intending developer permission to commence the project pending when the Certificate of Occupancy is granted.

Finance is the bane of any real estate development as it requires huge capital outlay. To be eligible to secure credit facility from any financial institution, the investor is required to show evidence of landed property as collateral and other relevant documents such as C-of-O. Another serious risk encountered by investors the inability of contractors to interpret the building plans accurately, build to specifications, and the use of inferior building materials. The employment of experienced building professionals in the building process solves this problem. Many development sites are confronted with the problem of inaccessibility, lack of basic estate infrastructure such as electricity and water from public mains, and safety of the building materials on project sites. These constitute serious risk to real estate investors in the project sites. These problems are avoided when the developer pays the stipulated sum of money to the utility agencies; and thereafter settle the community and youth organizations as demanded. The last stage of real estate development requires efficient management of the built estate. This service is professionally rendered by an experienced and licensed estate manager.

Certain risk elements fall outside the control of the key stakeholders in the construction industry. Such risks are classified as environmental risks which specifically affect the surrounding properties; while the other risks may generally be seen as statutory risks. These are shown on Table 3 below:

**Table 3: MANAGEMENT OF ENVIRONMENTAL RISKS**

S/N	TYPE OF RISK	NATURE OF RISK	CONSEQUENCES OF RISK	MANAGEMENT STRATEGY
1	Environmental Risk	i. Land Degradation ii. Soil Erosion iii. Flooding iv. Environmental Pollution	i. Building Collapse ii. Project abandonment	i. Adherence to Development Control. ii. Waste Management
2	Neighbourhood Risk	i. Youth Restiveness ii. Illegal Taxation iii. Kidnapping of workers	Insecurity at Project Site	Compliance to Community Norms and Ethics
3	Planning Risk	Prosecution of Developer by Planning Authority	i. Stoppage of Project ii. Destruction of Project	Adherence to Town Planning Regulations
4	Financial Risk	Inability to meet Loans Repayment	i. Abandonment of Project. ii. Forfeiture of Project	Repayment of Loan Granted

Author’s Fieldwork (2020)

Environmental risk has been identified as one of the serious problems confronting real estate development. They range from environmental pollution, land degradation, flooding, and soil erosion to atmospheric contamination. The neighbourhood risks are associated with lifestyle of members of the host community, particularly the youths as they levy different types of illegal fees on project developers. To successfully embark on the project, the developer has to comply by paying the legitimate levies and contributions as needs arise. Planning risks are statutory and require strict compliance by real estate developers. Those that built their houses through borrowed capital should endeavour to pay back the loans as agreed upon with the financial institution.

**RATIONALE FOR RISK MANAGEMENT**

One fundamental problem of real estate investment is how project can be embarked upon without determining the extent of risk involved in the envisaged project. This is because many investors embark on project without a careful examination, identification and assessment of the expected risk elements. The risk elements had been identified to include the risk of being dupe by fake property agents, non-compliance to planning and building regulations, lack of basic infrastructure at many project sites, inaccessibility to project finance, non-usage of

durable building materials and competent contractors, lack of building maintenance and default in rent payment by occupiers of the property. The influence of these risk elements on real estate investment changes in the course of project development and in the life of many projects, especially as a consequence of site topography, planning policies, fiscal policies, building materials and technology, and the state of national economy. This is why observed risk elements need to be evaluated as an aid to investment decision making. Some of these risks are avoidable if the real estate developer carried out a proper pre-investment appraisal to determine the appropriateness of the site for the chosen project. In case of any occurrence, the strategies that should be adopted to curtail the disaster are through developing means of avoiding or reducing risk, diversifying or transferring risk, providing contingency funds and/or arranging insurance coverage.

Risk is fundamental and a major factor that must be considered in the choice of investment types. An ideal real estate investor considers price certainty as an important economic variable since every risk element has direct or indirect effects on the financial budget of the project from conception to delivery or occupation. According to Creedy, Skitmore and Wong (2010), risk assessment is critical for establishing an efficient cost estimating improvement system that can be used to benchmark areas of potential problems thereby checkmating cost overrun. Risks in construction projects cannot be averted due to the involvement of diverse skills and people in the coordination of a vast amount of complex and interrelated activities (Ogwueleke and Udoudoh, 2017). Most construction projects fail due to the inability of the construction team to identify involved risks and also assess their impact on project performance (Luka and Muhammad, 2014). This is why risk management should commence with identifying and recording the risk elements at different stages of project construction; then assessing the likelihood of their occurrence and what the consequences would be. Where the project risk appraisal is properly carried out, it would help in achieving the set goal with minimal risk within the lifespan of the project.

Another reason behind risk management is to proffer solution to risk encountered by members of the construction team at the different stages of the project. This is aimed at determining the probable events and maximizes the probability or impact of opportunities and minimizes the probabilities or the impact of both. It has shifted to facilitating cordial working relation towards achieving the goal of the project and successful management of the firm's operations amidst unstable economic and political environment. Taking a holistic approach does not only require identifying the types of risks but getting the stakeholders involve in risks management process. Thus, when the project owner, project engineer/manager, workers on site recognizes and

evaluates the risks to which it is exposed, it behooves on the policy makers to formulate policies; design, implement and evaluate strategies; and adopt appropriate interventions measures aimed at reducing or controlling existing risks and avoiding new ones.

Risk management can be achieved in two ways: formal and informal. The informal management strategy is done without following any laid down or specific process. In this case, the contractor allows some contingency or sinking funds either of a fixed amount or a percentage to cater for any unforeseen risks during construction. The formal risks management strategy requires following a specific processes which vary from project to project. PMI (2017) identified six processes to include planning risk management, risk identification, qualitative risk assessment, quantitative risk assessment, plan risk response, and monitor risk. These processes are iterative which requires repeating it several times as the project goes on. Risk management enables the project team to plan ahead of the occurrence and develop mitigation approaches to address the attendant risks.

On the whole, risk management leads to achieving the target performance level of the investment. A well-articulated risk management strategy helps a potential investor to cultivate a better understanding of the risks and the returns profile associated with the investment option of his choice. While considering the need to improve operational performance and delivering of the proposed project, it is pertinent to provide useful empirical insight into those factors that may likely provide threat to realization of the expected performance level. In managing financial risks for instance, the investor needs to applied best practice techniques to curtail wastage of materials and other resources by ensuring strict compliance to the bill of quantity provided. Also, those skilled and unskilled workers that their services are no longer relevant at some stages of the project should be laid off. Equally of note is the fact that project maintenance costs are largely uncontrollable and inflexible sources with higher impact on performance of the investment. This being the case, where variations are to be made, it should be done where absolutely necessary and with cushion.

## **CONCLUSION**

Risk is fundamental and a major factor to be managed at every stage of real estate development. The perception of real estate investors on management of risk associated with project development changes continuously during and after construction of the project. This may be as a consequence of site topography, planning policies, fiscal policies, building materials and technology, management strategy and the state of location economy. An ideal real estate

investor considers price certainty as an important economic variable since every risk element has direct or indirect effects on the financial budget of the project from conception to delivery or occupation. Even though many property investors consider risks, they do so intuitively amidst difficulty of predicting the effects of such risks on future performance of their investment. Therefore, real estate investors, project or site engineers and managers require effective and efficient knowledge of attendant risks and their sources in order to determine the appropriate management strategy to control or mitigate the identified risks.

A proper and analytical study of risk elements and management strategies of projects is necessary as this determines the success of on-going projects. This gives the investment appraiser, funding institutions and investor a pre-knowledge of how to address the risk factors that contribute to the sustainable real estate development. Every investment has two principal components: risk and expected return. For any investor to earn returns, he has to bear some risk. This is so as risk and return are central to all investment decisions.

This research has shown that the prevailing risk sources depends on the project site, planning policies, building materials and workers on site, experience of site manager/engineer and the expected returns from the investment. It is pertinent to emphasize that the problems associated with investment risk cannot be totally eliminated, therefore the need to adopt appropriate management strategies to eliminate or at least reduce it effects of real estate development.

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