Readings in

ENVIRONMENTAL ECONOMICS AND CONFLICT RESOLUTION

Editors | Timothy Gbenga Nubi and Modupe Moronke Omirin
with Segun Yakubu Adisa and Hikmot Adunola Koleoso and John Uyi Osagie

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Published in Nigeria by
Transworld Times Press (Africa) Ltd,
334/336, Agege Motor Road,
Mushin, Lagos,
Nigeria.

First Published 2009

The views expressed in this volume are entirely
Those of the individual authors and do not
Necessarily reflect the official position of
the Department or the University.

ISBN 978-978-902-958-7

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An Evaluation of Risk Factors in Real Estate Development in Lagos, Nigeria

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Introduction

A recent estimate puts the world's wealth at $48 trillion, of which approximately half is in real estate. Property provides space for living and recreation. Production and other economic activities also take place on real property. Property also constitutes a major part of assets value in companies' balance sheets and is extensively used as collateral for corporate debt. Furthermore, real property is the commonest form of asset held by corporate bodies and individual investors. Real estate development also makes important contribution to economic development by reasons of its multiplier advantages. The place of real property in the economic development and overall well being of any nation cannot be overemphasized, therefore.

As it can contribute significant to economic development, property development industry can also cripple local and international economies if not well managed. The collapse of property market in UK in early 1970s, and at the end of the 1980s; the Thailand property crash in 1997; and the current global recession triggered by the sub-prime lending in US are attributed largely to imprudent property investment and inappropriate financing.

The Real Estate Development Process

The term real estate development evokes different meanings depending on individual's view point (Byrne, 1996). To some, property development simply implies the construction of buildings, a physical process of production. To others, it is a part of a social and political process, involving the distribution and control of resources. Whichever way it is viewed, real estate development is a multifaceted business which process invariably include a combination of the followings: coming up with an idea, refining it, testing its feasibility, negotiating contracts, making a formal commitment, constructing the project, completing and opening it, and, finally managing the new project. In the context of commercial and industrial property, development normally implies the creation of new buildings, either as a result of a bare site being built on for the first time (new development), or as result of the replacement of existing buildings by new structures (redevelopment), or even through structural conversion, alteration and modernization of existing buildings (Frazer, 1984). In each of these cases development would invariably involve site identification, site acquisition, planning permission, financing, design and construction and eventual letting/sale of completed development.

The developer is the party that motivates, co-ordinates, makes crucial decisions and bears the main financial risks of the project. The six components of the development process listed above are the ultimately the responsibility of the developer, even though the bulk of the work may be undertaken by professional agents (Frazer, 1984). The developer therefore takes risks, manage risks, and try to eliminate or minimize risks or at least, get it down to an acceptable level. .

The development process describes the series sequential activities from the conception of a development project through to actual construction and to eventual disposal of the development. Property development can therefore simply be likened to an industrial production process that involves the combination of various inputs in order to achieve an output or product. There is no universally accepted model of

the property development process (Byrne, 1996; Newell & Steglick, 2004). Cadman and Topping (1995) identified eight stages in the development process including initiation, evaluation, acquisition, design and costing, permissions, commitment, and implementation, let/manage/disposal. Byrne (1996) identified three stages which are: acquisition, production and disposal. Newell and Steglick (2004) recognized five processes including pre-construction stage, contract negotiation stage, formal commitment stage, construction stage and post-construction stage. Newell and Steglick's the pre-construction stage involves the decision to undertake a property development project and a site being selected. It also involves site appraisal and feasibility studies include a detailed design upon which planning permission is obtained. The contract negotiation stage is when the parties discuss the terms and conditions of the contract. At the formal commitment stage, the developer signs all necessary contracts and is given the permission to start the actual construction. The construction stage is the stage where actual execution of the development takes place. The post-construction stage is where the completed development is disposed through outright sale or letting. These five stages constitute the various links in the property supply chain. The distortions or malfunctioning of any of these stages renders the construction process ineffective, especially in terms of maximizing associated employment and income potentials.

Frazer (1984) put forward a six-stage development process as depicted in Figure 1.

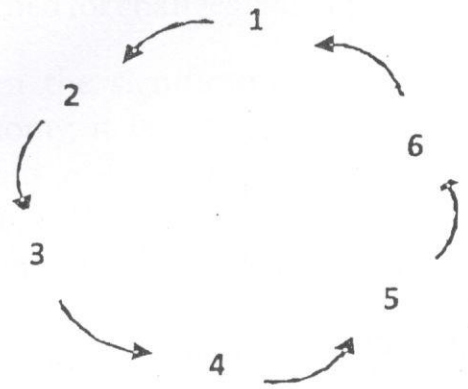

Figure 1: Six-Stage Development Process

Source: Adopted from Frazer1984)

1. The perception and estimation of demand for new building of different types.
2. The identification and securing of sites on which building might be constructed to meet that demand.
3. The design of accommodation to meet the demand on the site identified.
4. The arrangement of short and long term finance to find site acquisition and construction.
5. The management of design and construction.
6. The letting and management of the completed buildings.

Figure 1, property development process resembles the construction of a building (Miles et al., 2007). The foundation must be level for the walls to be straight. The frame must be square if the finish is to be attractive. That is, each stage in the process depends on the quality of previous steps. Thus, a badly negotiated or written agreements with funds providers, contractors, tenants or professional agents, will back fire on the developer by increasing the risk profile of the development. Because each stage depends on the preceding one and other people are involved in the process, the type of investigation carried out in this study is required by the developer effective monitoring that is required for effective management, thus, investigating the risk element, there relative impact and how each member of the development theme is affected allows the developer to chart the critical; part for a project showing not only the events that must occur before others can be accomplished, but also how critical certain risk elements are to the overall success of the development scheme. This places the risk element clearly before the decision makers

(the developer and his consultants) in their right perspectives, so that as the development proceeds, these critical variables can be particularly watched for changes which may affect overall viability.

Given the significance of the real estate development sector in any economy, it is therefore important to evaluate the significance of the various real estate development risks at each stages of development process. This study examines and evaluates the various risk factors in the property development process in Lagos State, Nigeria.

Risk Elements in Property Development Process

Since the real estate development has to do with making a product available for the future; it is a process fraught with risk and uncertainty (Byrne, 1996). Many schemes fail because unforeseen factors impact negatively on the initial calculations (Balchin et al., 1995). The risks factors are related to land, labour, time, finance, environment, building materials, management and manpower risks. Byrne (1996) opines that as the process of property development progresses, the developer's knowledge of the likely outcome increases but, at the same time, the room for maneuver decreases. Thus, while at the commencement process, developers have maximum uncertainty and maneuverability, at the end of the process they know and can do nothing to change their product, which has been manufactured on an essentially once and for all basis. The process is therefore susceptible to risk and uncertainty because, once started, it is relatively fixed in time and place and also because it aims at a very narrow consumer market.

Byrne (1996) warned that the risks associated with the property development must be considered and should not be underestimated. The direct and indirect consequences of these include: increase of interests, change in design and postponement of construction commencement leading to delay of completion, as well as effect to the property marketing process, and the project revenue in the decrease rental/sale price, decsrease velocity of sales, cause a higher vacancy rate and lower investment value (Gehner *et al.*, 2006). Such risks could be prevented or

mitigated if they developers accord them due consideration, including understanding their proper assessment and careful evaluation of their consequences such that the developer is able to mitigate and manage them effectively.

Studies have identified several risk factors in the real estate development process. Morrison (2007) identified social, technological, economical, environmental and political factors (or "STEEP"), occurring in both quantitative and subjective terms. The Dutch Real Estate Development Business survey, identified policy change, the resistance/opposition of administrative machinery, the objection against the building plan by a citizen and change in environmental legislation as factors largely responsible for the risk associated with real estate development (Gehner *et al.*, 2006). Newell and Steglick (2004) identified thirty-four real estate development risk factors and the effects on various stages of the development process.

This study is based on survey of real estate developers in Lagos, Nigeria. The outcome of this study is significant as it would help real estate developers in Lagos, Nigeria to mitigate risks and execute projects more effectively in terms of time, cost and quality. For purpose of analysis, the study adopts Newell and Steglick (2004)'s five-stage process involving thirty-four risk factors (See Table 1).

Table 1: Five-stage Property Development Process

Real Estate Development Stages	Risk Factors
Pre-construction	Environmental: heritage, ecology, contamination. Approvals: zoning, compliance, conditions, developer contributions. Political: lack of support from local community, council, government. Experience: Experience with type of development, ability to manage development Market: research, location, portfolio diversification. Title : land title problems and encumbrances. Consultants: design quality, reliability of consultant's report. Physical: difficult land form and existing improvements. Feasibility: assumptions, financial performance benchmarks, risk analysis Infrastructure: availability of services, water, traffic, social infrastructure
Contract negotiation	Land cost (allowing for reasonable profit margin) Acquisition terms (fair, provide flexibility) Building contract terms (allow control of costs) Financial terms (not onerous)
Formal commitment	Scope and adequacy of insurance coverage All legal documentation executed Binding pre-commitments to lease and/or purchase
Construction	Time delays ; weather, force majeure, strikes Cost increases and unanticipated variations Engineering problems (unexpected, poor design) Solvency of builder Quality of project management Builder's experience in similar projects Environmental (dust, noise, surface water etc. during construction) Non-payment of sub-contractors

Post-construction	Timing of delivering development (cycle risk) Changes in market value and capitalisation rates Unfavourable changes in demand and supply Leases/sales pre-commitments fail to complete Project commerce materially alters Incorrect branding and image, market positioning image Changes in interest rates, time cost of money Financial : leverage, debt service, solvency, default, repayment Political/economic : tax, inflation, regulations, laws

Source : Adapted from Newell & Steglick (2004).

Methodology

The descriptive survey method was used, which consisted of both qualitative data gathering using unstructured interviews and quantitative data gathering using structured questionnaires. The investigations were limited to the views expressed by Real Estate Developers in Lagos State, Nigeria. Respondents were asked to rate each real estate development risk factor on a 5-point scale from 1 = very low risk; 2 = low risk; 3 = average risk; 4 = high risk and 5 = very high risk.

Out of the 50 self administered questionnaires by hand 38 were returned out of which 37 were considered usable, representing a response rate of 74% percent.

Results

The demographic profiles of the respondents showed they are largely educated and experienced decision makers in their respective organizations. Their input could therefore be relied upon. From Tables 2, 3 and 4 below, 95 percent of them are of senior management level, 85 percent have first or higher degrees, and 83 percent have over 10 years of experience in the property development businesses.

Table 2: Managerial Level

Management Level	Percent
Lower level	-
Middle Level	5
Senior Level	95
Total	100

Table 3: Educational Level

Education	Percent
Secondary School Certificate	1
Technical College/OND	14
HND/ BSc	85
Total	100

Table 4: Experience

Experience Level	Percent
Less than 5years	2
5-10years	15
Above 10years	83
Total	100

Pre-construction stage risk

Table 5 below presents the pre-construction stage risks ratings. As a result of the uncertainty in the pre-construction phase and certain factors beyond the developer's control, this phase is considered to have the highest overall risk. Land title problems and encumbrances risk are considered as the highest risk factor at this stage (4.15). Approval risk is second (3.92). Physical risk (3.91) and political risk (3.57) are third and fourth respectively. Infrastructural risk is fifth with a mean of 3.42.

Table 5: Pre-construction stage risk ratings

Risk factor	Mean risk rating
Title: land title problems and encumbrances	4.15
Approvals: zoning, compliance, conditions, developer contributions	3.92
Physical: difficult land form and existing improvements	3.91
Political: lack of support from local community, council, government	3.57
Infrastructure: availability of services, water, traffic, social infrastructure	3.42
Market: research, location, portfolio diversification	3.31
Consultants: design quality, reliability of consultant's report	2.68
Feasibility: assumptions, financial performance benchmarks, risk analysis	2.35
Experience with type of development, ability to manage development	2.30
Environmental: heritage, ecology, contamination	2.05
Mean pre-construction risk rating	**3.17**

Contract negotiation stage risk

The contract negotiation stage risks ratings are given in Table 6. This stage is regarded to have the second highest overall risk. Amongst its various risk elements, finance risk is the highest (4.56). Coincidentally, this factor (finance risk) also represents the highest risk factor in the entire real development process (See Table). Land cost risk (3.90) and acquisition terms risk (2.05) are rated the second and third in order of importance among the risk factors at this stage. The building contract term exhibits the least potential with a mean of 1.83.

Table 6: Contract negotiation stage risks rating

Risk factor	Mean risk rating
Financial terms	4.56
Land cost (allowing for reasonable profit margin)	3.90
Acquisition terms (fair, provide flexibility)	2.05
Building contract terms (allow control of costs)	1.83
Mean contract negotiation risk rating	3.09

Table 7 presents the formal commitment stage risks ratings by the respondents. At this stage, execution of legal documentation has the highest mean rating of 3.26, while the scope and adequacy of insurance coverage is second with a mean of 3.03 and binding pre-commitments to lease and/or purchase is least with 2.88 mean rating.

Table 7: Formal commitment stage risks rating

Risk factor	Mean risk rating
All legal documentation executed	3.26
Scope and adequacy of insurance coverage	3.03
Binding pre-commitments to lease and/or purchase	2.88
Mean formal commitment risk rating	3.06

Construction stage risks

The construction stage risk factors ratings are shown in Table 8. Cost increases and unanticipated variations is the most significant risk factor with a mean rate of 4.00. 'Builder's experiences in similar projects' and 'non-payment of sub-contractors' follow as second and third most significant factors with mean ratings of 3.31 and 3.12 respectively. These are followed by the 'engineering problems', 'time delays', 'solvency of builder', 'quality of project management' and 'environmental risk', in that order.

Table 8: Construction stage risks rating

Risk factor	Mean risk Rating
Cost increases and unanticipated variations	4.00
Builder's experience in similar projects	3.31
Non-payment of sub-contractors	3.12
Engineering problems (unexpected, poor design)	3.00
Time delays ; weather, force majeure, strikes	2.94
Solvency of builder	2.82
Quality of project management	2.66
Environmental (dust, noise, surface water etc. during construction)	2.58
Mean construction risk rating	3.05

Post-construction stage risks

Table 9 is the summary of post-construction stage risk factors ratings by the respondents. The post-construction phase is the overall least risky stage of property development process. Of the factors making up this stage, 'timing of delivering development' is assessed as the most critical factor with a mean risk rating of 2.95, while change in market value and capitalization rates is least with a mean of 1.67. In between are seven other factors of varying risk impacts.

Table 9: Post-construction stage risks rating

Risk factor	Mean risk rating
Timing of delivering development (cycle risk)	2.95
Financial : leverage, debt service, solvency, default, repayment	2.88
Political/economic : tax, inflation, regulations, laws	2.79
Unfavourable changes in demand and supply	2.68
Leases/sales pre-commitments fail to complete	2.50

Project commerce materially alters	2.41
Incorrect branding and image, market positioning image	2.39
Changes in interest rates, time cost of money	2.28
Changes in market value and capitalisation rates	1.67
Mean post-construction risk rating	2.51

Table 10 is a summary of five top risk factors (out of the total of 34) in property development as identified by respondents. Risks factors associated with the pre-construction, contract negotiation and construction stages clearly dominate this priority risks schedule.

Table 10: Top 5 property development risk elements

Risk factor	Mean risk rating
1st : Finance risk	4.56
2nd : Title and land encumbrances	4.15
3rd : Cost increases and unanticipated risk	4.00
4th : Approvals risk	3.92
5th: physical risk	3.91

Conclusion

Based on a survey of selected property developers in Lagos, Nigeria, this study identified 'financial risk', 'land risk', 'cost increases and unanticipated variation' and 'fluctuation risk', 'approval risk' and 'physical risk' as the five most significant risk factors that should be given extra attention in real estate development process in the study area if projects are to be successfully and profitably delivered. In Newell and Steglick (2004) study, the most important property development risk factors identified were 'environmental risk', 'time delay' and 'land cost'. The results suggest that the relative importance of risk factors in property development is likely to vary from one country to another. Secondly, this study revealed that the pre-construction phase have the highest overall risk which is followed by the contact negotiation stage, the formal

commitment stage, the construction and the post construction stage, in that order. This further suggests that overall risk vary from one stage of property development to another.

In all, this study has shed some light on risk factors in property development by identifying the risk elements in property development in the study area and also assessing their relative importance. The result of this study is expected to reposition real estate developers in Lagos, Nigeria for a more scientific approach to risk management that will lead invariably to overall improvement in property industry products delivery.

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