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SUSTAINABLE REAL ESTATE INVESTMENT DECISION MODEL: A REVIEW OF LITERATURE

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ABSTRACT

Nigerian property market has long battled with the question "why do real estate investments fail". Therefore, this study probes into the theoretical concept of decision-making process adopts in developed economies for property investment. The primary aim is to develop a model that could provide support for real estate investment decision making in Nigeria contest. The study adopted content analyses approach to cross-examine relevant literature on decision theories. The study found that, decision making process relating to real estate investment project takes the form of sequential or cyclical. The phases that are common to all the reviewed studies include envisioning, planning, dealing, executing, watching and optimizing in that order. Hence, the study recommended the decision theory model developed by Parker (2010) as a sustainable model that could accommodate the Nigerian property market parameters and can fit in any purpose geared towards real estate investment purpose.

Keywords: Decision Theory, Real Estate, Property Development, Investment, Model

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1. Introduction

Real estate denotes land and its appurtenances. As a property, it is the interests, benefits and rights pertaining to ownership of real estate (land and buildings). The real estate sector has shown significant growth over the years and has been recognized as one of the larger contributors to nation's wealth. Oreagba (2010) revealed that, the real estate sector accounts for about 54% of global financial wealth. The forms of investing in real estate are categorized into two namely direct and indirect investment vehicles. Direct real estate (un-securitized) investment involves investing in the physical structure – the bricks and mortar of a building and the land it is built on (Hirvonen, 2014; Hoesli and Oikarinen, 2012)

The physical development of any direct real estate projects carried out either by private individuals or institutional bodies for investment purpose always aims at securing optimum returns. Generally, investing in real estate assets involves the commitment of huge capital (lump sum) with the expectation of obtaining desirable return at a particular time in future. Ogunba (2013) posited that commitment of funds in the purchase, ownership, management, rental and/or sale into real estate assets is geared towards earning profit among others.

However, in real estate investment, investors/developers are faced with the decision of 'what property type(s) to invest on' and 'How much fund should be allocated'. Because of the limited available resource and the inevitable risk associated with the financing and timing factors, rational investor will prefers to take an informed decision among a set of alternatives (i.e. identifying the best alternative investment). A good investment decision is the one that identifies an option(s) among a set of alternative which gives the investor an optimum returns (Onyema, 2017; Olanrele, Said and Daud, 2014; Olaleye and Ekemode, 2014).

Decision theory therefore helps to analyze the risk associated with each investment media and provides the invertor with better information on the uncertainty inherent in real estate investment decision. However, strong indications from relevant work have shown that, the success of any real estate property investment depends largely on the validity of information that the investor/developer rely upon when choosing investment action (Newell, Graeme and Ross, 2006; Frank and Keith, 2003). Therefore, decision theory equips decision maker with relevant statistical information on the viability of real estate property investment alternatives. Also, this theoretical analysis helps investors to be fully informed on any alternative he or she has identified.

2. Decision Making in Real Estate Investment

Real estate investment decision-making process entails the act of identifying alternative (i.e. investment property types) that will yield the desirable returns. The act of selecting viable real estate investment medium amidst other sometimes may be looks simple on surface approach but complex in details owing to the complexity nature and inherent uncertainty feature attributed to real estate property market. Dabara et al (2014) summarized the nature of property market into four (4) categories. They include; multidisciplinary characteristics emanated due to interrelated activities involves in actualizing

its physical development. The product uniqueness in term of its locational attribute; the longer duration i.e. the period between the commencement and completion time and lastly, the flexibility of real estate market indices to change overtime. The delicate nature of property market requires the need for the action(s) of decision-maker to be guided appropriately in identifying viable investment option(s) that will ensure security of capital invested and guarantee the expected future return.

In the work of Tiainen (2013), five key analyses were encouraged to be done whin thinking of investing in real estate project. They are economic, strategic, risk, location attractiveness and other analyses such as economic outlook, segmentation and relationships. The author explained the economic analysis to include net present value, internal rate of return, profitability index, return on investment and payback time. Strategic analysis contains the holistic view of the industry, firm's competitive hedge, market share and position in a broader perception of the market. While the prominent risk analyses if management puzzle, analyses of locational attractiveness while expose the locational attributes for the investment practicability and profitability.

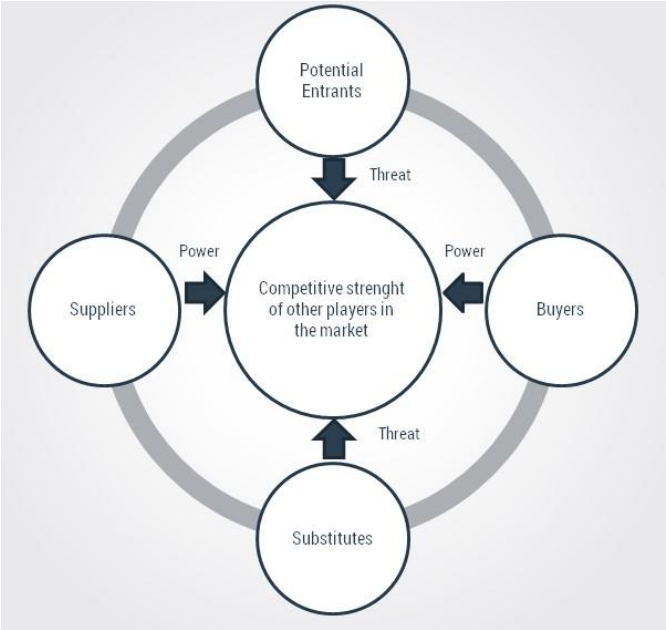


Fig. 1: Porter's Five Forces (source: Vliet, 2013)

3. Real Estate Investment Decision: Theory and Application

Decision theory simply studies how people identify their choice. It is a theoretical analysis that provides guidance to people's decision behaviour. Daniel (2002) classified investors' decision behavior into three major groups. The *Risk Preference* (risk taker investors); the *Risk Aversion* investors (risk avoidance type) and the *Risk Neutrality* investors i.e. those that are neither risk takers nor risk avoidance but maintain balance between the other two groups. In decision theory, decision making can be normative, descriptive or prescriptive. Normative talks about how decision should be made, prescriptive explain how decisions are made while prescriptive employed both decision rules to guide decision maker in practice (Jennifer, 2009; Dabara *et al.* 2014).

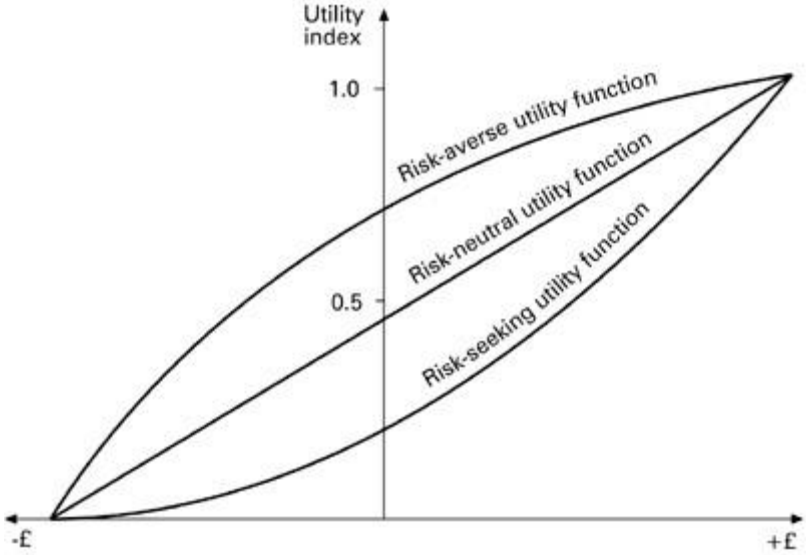


Fig. 1: Classification of Risk
Source (Risk Paper; 2005)

In real estate investment, investors encounter many risks which are non-frequent in nature and in some case their probability is uncertain. Some that are risk takers are more interested in risk gain and give lesser consideration on risk loses while risk aversion investors prefer investment though with lesser return but with minimal possible risk losses. However, the basic objectives for risk decision are either on how to maximize risk gain or to minimize risk losses as much as possible. Therefore weather to maximize gain or to minimize risk, the intrinsic uncertain associated with real estate property development decision needs to be well analyzed (Phhrr et al 1989; Jeff and Sirmans 2001; Roberts and Henneberry, 2007).

Decision making process in real estate investment according to Baum (2002) are in phases They are; i) determination of ideal portfolio structure; ii) identification of target sub-sectors; iii) sourcing new stock from the market; iv) appraisal; v) modeling of portfolio impact and vi) acquisition process. While Farragher and Savage (2008) expresses a good informed decision in nine (9) steps. They include i)setting strategy; ii) establishing risk return goals; iii) searching for investment opportunities; iv) forecasting expected returns; v) evaluating forecast returns; vi) assessing and adjusting for risk; vii) decision making viii) implementing accepted proposals; and ix) auditing operating performance.

Some authors agreed with the sequential nature of real estate development decision making process to be sequential and linear in nature, other authors such as Pagliari 1995 and Hartigay and Yu (1993) opined that such decision making process can also be in circular form. However, whether the decision making process is sequential and linear in nature or in circular form, a rational real estate investors need to understand the risk-return consequences of any alternative or combination of property types he or she may considered at early stage (planning) of the physical developmental real estate project. This can be done by employing some decision analytical models. Therefore, decision theory serves as a mental window in which potential real estate investors/developers view the future world of property investment.

Examining different models developed, Roberts and Henneberry (2007) noted that, textbook and journal paper authors generally approach the property investment decision making process as a normative model. For instance, Pyhrr *et al* (1989) highlighted ten steps. They are
i) determine the investment strategy; ii) generate alternatives; iii) analyse property using basic financial feasibility models; iv) negotiate basic terms with sellers; v)do detailed feasibility research; vi) complete financial and tax structuring; vii) perform a DCF analysis; viii) final negotiations and closing; ix) manage the property; and x) Terminate the property. Jaffe and Sirmans (2001) reduced the step into five to include i) identify goals, objectives and constraints; ii) analyse the overall investment environment; iii) forecast expected future benefits and costs; iv) apply appropriate decision making criteria; and v) accept or reject the investment.

Baum (2002) proposes six steps comprising i) determination of ideal portfolio structure; ii) identification of target sub-sectors; iii) sourcing new stock from the market; iv) appraisal; v) modeling of portfolio impact; and vi) acquisition process. Farragher and Savage (2008) noted nine steps i) setting strategy; ii) establishing risk/return goals; iii) searching for investment opportunities; iv) forecasting expected returns; v) evaluating forecast returns; vi) assessing and adjusting for risk; vii) decision making; viii) implementing accepted proposals; and ix) auditing operating performance.

Similarly, Roberts and Hennebery (2007) propose a ten step composite model of the property investment decision making process: i) setting of initial (property) investment goals and decision criteria; ii) formulation of a fully defined decision making strategy (relating to portfolio structure and performance); iii) search (for suitable properties); iv) information input (including analysis of market conditions); v) prediction of outcomes (return and risk at portfolio and property levels); vi) application of decision criteria; vii) trade off (between properties); viii) project screening (of properties); ix) investment selection; and x) negotiation, deal resolution and post investment activity.

The more prominent and relevant model was developed by **Parker (2010).** The model reflects the earlier developed models by authors and summarized it into one conceptual framework. The model has six phases which comprises of:

i) Envisioning – identifying the purpose and rationale for the portfolio ii) Planning - describing how it will be implemented in practice iii) Dealing – seeking to bring planning phase to reality iv) Executing – converting planning phase to reality
v) Watching and - monitoring the reality i.e. the portfolio
vi) Optimization- linking the watching phase back to envisioning phase through an active process.

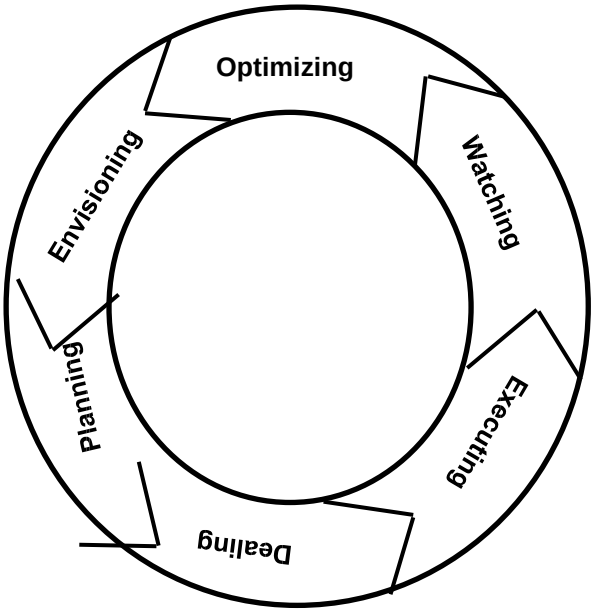
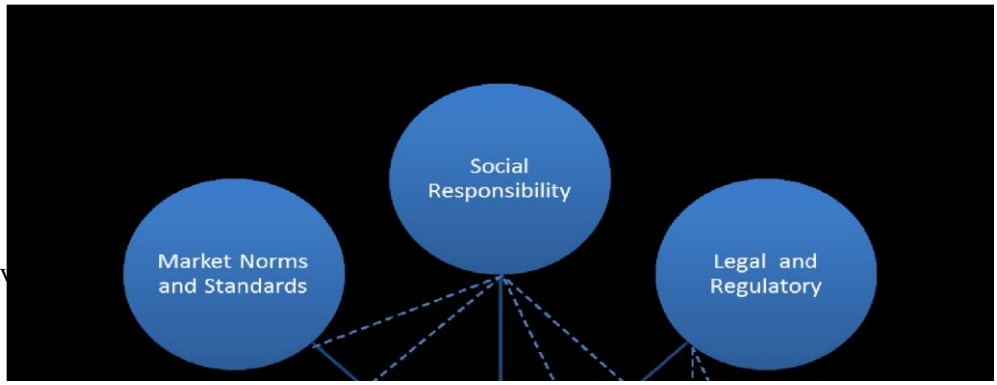


Fig2: Cyclical Decision Making Model in Real estate Investment
Source: Parker (2010)

The phases of decision theories purported authors were summarized in Table 1. The tabular analysis also showed that Parker's decision theory captured all the phases earlier proposed by relevant work. This therefore suggests that Parker decision theory is a comprehensive one that encompasses the decision theory models and simplify it into six phases i.e. envisioning, planning, dealing, executing watching and optimizing.

Table1: Summary of Literature with respect to Parker's Decision Making Model

Literature	Phases					
	Envisioning	Planning	Dealing	Executing	Watching	Optimising
Pyhrr et al (1989)	1	2	3,4,5,6,7	8	9	10
Jaffe and Sirmans (2001)	1	2	3,4	5		
Pagliari (1995)	1	2,3	3,4		5,6	
Roulac (1994)		1	2,3	4		
Baum (2002)	1	2	3	4,5,6		
Brown and Matysiak (2000)	1		2	3	4	
Hartigay and Yu (1993)	1	2	3,4			5
Roberts and Henneberry (2007)	1	2	3,4,5,6,7,8	9	10	



Farragher and Savage (2008)	1	2	3,4,5,6	7,8	9	
Farragher and Kleiman (1996)	1	2	3,4,5	6		7

Source: Parker , (2010)

4. Sustainable Real Estate Decision Making

Sustainability concept has occupied the central discussion of all sphere of life in the literature, Banuri and Weyant, (2001) expressed that the concept with reference to decision making in real estate industry started gaining prominent notice 15years ago. Studies such as and Eichholtz, Kok and Quigley (2010b); Banuri and Weyant, (2001); Pivo (2008) and Lele, (2009; 1991) have worked extensively on sustainable real estate decision making with their key concept revolves round four pillars of sustainability recommended by UNEP (2009) i.e. social equity and progress, environmental responsibility, economic development with cooperate governance at the centre.

Christensen (2012) examined the key strategies of sustainable real estate decision making in the United States. The study deployed Delphi study of stakeholders submissions to the developed as framework for decision-making influencing factor of real estate industry (Fig. 3). The study identified factors such as social responsibility, legal and regulatory, risks, climate change issue, physical attributes of real estate, economic cost and performance, performances reporting, markets norms and standard. The Study concluded that, a direct relationship exist between the influencing factors and real estate decision making process.

Fig. 3 Influencing Factors of Sustainable Real Estate Decision Making Process. Source: Christensen (2012)

5. Conclusion and Recommendations

This study explores the previous works on decision making models relevant to real estate investment. The primary aim of the paper is expose decision making theories that could enhance real estate investment decision making process. The result of the content analysis showed that, the pattern of decision making in real estate investment fluctuate between sequential form (linear) and cyclical (circular). The cross-examination of the decision model analyses revealed that the model proposed by Parker (10) could provide good guidance for informed real estate decision making. The Parker's model comprises of six (6) ranging from envisioning, planning, dealing, executing, watching and optimizing in that order of steps. The model is recommended because the phases in the model summarize and accommodates all phases highlighted in the literature. However, to achieve sustainable quality decisions in real estate property investment, some factors have to be considered. According Christensen (2012), influencing factors such as social responsibility, legal and regulatory, risks, climate change issue, physical attributes of real estate, economic cost and performance, performances reporting, markets norms and standard were identified to be a prominent ones.

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