



Respondents' perception of Risk Factors on Residential Property Development in Abuja, Nigeria

O. T. Ogunbayo¹

¹ Department of Estate Management, Obafemi Awolowo University, Nigeria.

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Abstract

Significant risk factors such as social, technological, economic, environmental and political in the timing development, minimization of cost and expected return as they influence the successful delivery process of residential property development were investigated in this study towards enhancing real estate development decisions. This is expedient because it has been argued that the link between project success criteria determines a successful project delivery. Data were obtained from members of Real Estate Developers Association (REDAN) in Abuja through the use of a self-administered questionnaire. The respondents were asked to rate the influence of risk factors on residential property development parameters, and the data were computed using logistic regression analysis. The study revealed that real estate developers were more concerned with the influence of economic and technological risk than other sources of risk. Also, the statistical effects were computed through logistic regression analysis. It was explained by significant value ($p < 0.05$) which depicts the likelihood of the risk factor which could either be positive or negative, as explained by beta (β). The findings revealed the effect of economic risk factors in timing development to be ($\beta = 1.833$, $p < 0.05$). Also, the effect of technological risk factors to influence development cost were found to be ($\beta = -.187$, $p < 0.05$) while the effect of economic risk factors on return was found to be ($\beta = 1.026$, $p < 0.05$). The main contribution of the study to the body of knowledge is developing a risk factors assessment technique for practitioners and academia to assess the residential property development performance as related to timely completion, cost and returns to enhance the need to develop competence in managing and minimizing the effect of risk factors on the residential investment appraisal.

Keywords: Development appraisal, Expected return, Profit maximization, Residential property, Risk analysis, Time.

1. Introduction

Risk is a part of everyday life. The distinction between financially successful and unsuccessful people is the early awareness of risk in their businesses operations. Tularam and Attili (2012) opined that decision makers successfully manage situation subject to uncertainty by awareness of risks inherent in the project. The real estate industry comprised an extensive range of organizations and individuals in the developing and operating property to meet housing needs in the country (UDIA 2003). Property development as a whole is risky, and it has been asserted that every part of a project is fraught with risk which could result in deviation from the expectation. It is expected that the higher the complexities of the project, the higher the risks involved in such projects (Belo and Agbatekwe, 2002; Newell and Steglick, 2006).

However, the basic parameter has been identified as critical factors to achieve project success. For instance, Bowen et al. (2012), Michell et al. (2007) established the link between time, profit and total value for money in the literature. Rwelamila and Hall (1995) argued that poor handling of the three parameters is detrimental in achieving project objectives. The study likened cost, time and quality as three points of the triangle that neglecting one parameter would have an adverse effect in attaining a successful project. This explained that in the long run, timely completion of a project would secure profit and upon completion guarantee a return on investment. Moreover, the three basic parameters have been considered as one that determines the feasibility of a project objective to guarantee a successful and profitable development. All these measures are inevitable in

¹Corresponding Author

Email address: ogunbayoot@gmail.com

property development and are usually affected by the consequences of risk.

Meanwhile, Khumpaisal (2007); Otegbulu, et al., (2011) posited that property development is subject to risks that are related to social, technological, environmental, economic and political factors which could hinder timely completion of project, expected income, use and general orientation of the proposed project. During the past, research has concentrated more on the real estate development process and the risks evident throughout the property development process (Ogunbayo et al. 2018, Muka et al. 2015, Khumpaisal, 2007, Newell and Steglick 2006) but research into the investigation of risk analysis in the real estate development period, the project cost flow and the total value which could have an impact on the investment decision making has received little attention, hence the need for the study. Also, with the current economic trends both in developed and emerging countries, rational investors will only be interested in developing a project that could be completed within a defined period as well as being able to predict the likely anticipated returns and profit on investment. Thus, real estate investors need to understand the effect of the significant risk factors on the project criterion to enhance profit over the total value of the project.

Also, this study will be limited to residential property development in Abuja. Fisher and Robson (2006), Windapo and Martin (2010) opined that property development is a multifaceted process that comprises features which fluctuate with time and place that could affect development given that real estate market is localized. Thus, it has been justified that real estate developers are keen towards residential property development due to the commercial activities in the state which has encouraged migration of people from different countries across the world and these are a strong indication that influence residential property development opportunities in Abuja, hence, the need for the study. The main aim of this study is assessing the social, technological, economic, environmental and political risk factors in residential property development as related to the timely completion, expected returns via the quality of the project and the overall cost of an investment in order to tap into the potential of real estate sector. This is because it has been revealed that proper handling of these parameters guarantees a successful investment decision making.

2. Literature Review

2.1 Project Time, cost and quality

Numerous researchers have conducted studies on the criteria to measure a successful project delivery that enhances property decision-making process. Meanwhile, Lui et al. (2015), suggested that there is need to develop the concept of operational excellence in construction and management consulting industries because of the complexity of the project so as to enable team members to perform the specified tasks in the right manner, at the right time as to ensure a desirable outcome. Thus, the criterion is seen as a determiner to enable successful project performance (Bowen et al.2012, Michell et al.2007).

2.1.1 Time

The clients, contractors, real estate developers have seen time as one of the critical factors in arriving at a successful project development. Completion of projects within the specified timeframe or schedules is a major problem confronting real estate development projects; thus it is worthwhile to carry out a survey investigating how the risk factors could impact the timely project delivery. Studies such as Divakar and Subramanian (2009) examined the concept of time in a construction project. The study argued that scheduling of project is faced with uncertainties which could result in project time overrun ranging from days to week and weeks to months depending on the project condition. The study identified critical factors as cash flow of the budget, preparation of bill of quantities, coordination between agencies parties that could cause project time overrun if not adequately monitored. Dissanayaka and Kumaraswamy (1999) evaluated the factors that could affect time performance in Hong Kong construction industry. The data were analyzed with the use of multiple linear regression and artificial neural network. The finding revealed that non-procurement related factors such as clients, project characteristics and client representative characteristics are the main factors that could influence the timely completion of a project. While Chan and Kumaraswamy (1996) asserted that risk is an unavoidable element in construction projects and identified that contractor-related" factor category has a high impact on time performance than a client-related factor. Nevertheless, all these studies examined the construction time performance in building projects, but the scope did not cover the influence of risk on the timely completion of residential property development.

2.1.2 Cost

Rational investors or clients are concerned with the overall profitability of a project generally. Charles and Andrew (1990), Saidu and Shakantu (2017) presented cost overrun in relation to the timely completion of a project as a principal factor that could result in high construction cost of building projects. Chimwaso (2000) examined the cost performance of a public project in Botswana and factors that influence construction cost overruns. The study used a questionnaire survey to elicit information among professionals in the construction industry. Thus, the study ranked variations, re-measurement of provisional works, fluctuations in the cost of labor and materials, contractual claims, that is, claims for extension of time with cost as the critical factors that could influence cost performance of public projects in the study area. Whilst Kaming, et al., (1997), Cox, et al., (1999) identified design changes, inadequate planning, unpredictable weather conditions; and fluctuations in the cost of building materials, inaccurate experience of project location and type as main factors that could influence cost performance of a project. Thus, these studies examined the factors influencing cost performance of building projects, but the scope did not cover the entire basic project criterion for achieving successful delivery of a project which is the focal point of the present study.

2.1.3 Quality

It has been observed that to determine the quality performance of building projects there is a need to consider the service received by the owner and the end user of the developed project as to improve the quality performance. Vincent and Joel (1995) presented total quality management as "the integration of strategy and structure, technical component and culture within an organization to achieve continuous improvement of the quality of goods and services. Thus, the project will start to realize important, quantifiable, and noticeable improvements if the three elements have been put in place.

A study conducted by Sanni and Windapo (2008) investigated the quality control practices on construction site in Lagos to establish the contractor's alignment with the implementation of the quality control plan in the study area. The study analyzed data with the use of descriptive and inferential statistics, and the results revealed that most of the contractors do take quality control plan. The study further details that there is a significant relationship between having an effective quality control plan and delivering a high-quality project in the construction industry. In the same manner, Firuzan et al. (2010) identified the elements that could influence contractors' quality performance in the construction industry with the view to developing an effective construction process and improving the levels of satisfaction derived by the customers. The study identified the elements as related to the construction product, service, and the corporate quality culture. The study further recommended that a quality control plan should be implemented to guide the contractors to enhance the quality of their operations and high-quality building projects. However, the scope of these studies did not examine the influence of quality performance on residential property development that could improve real estate development decisions in accruing maximum returns.

Jazayeri and Dadi (2017) investigated the indicators that could guarantee safety management system in construction industries in the United States of America. The study further explained that researches drawn elements of safety management by analysis of accidents, the structure of the highly reliable organization among others as this could enable owners, contractors, and decision makers to choose and implement methods to improving the performance of construction safety management system. In the same manner, Alsulamy et al. (2012) reviewed the key performance indicators on the cost, quality and time through the use of construction process model that spanned through the initiative to execution stage as to ensure delivery of projects and meet the needs and expectation of the stakeholders. The study concluded that performance measurement in the construction sector and corporate level differs. This is because the construction cost, time and quality are relied upon in determining the extent of project success while the corporate level is evaluated based on the financial and non-financial measures. The study implied that the performance measurement indicators should be considered as marketing tools to achieve a desirable outcome.

Nevertheless, these studies were a theoretical investigation of significant metrics in the measurement of project performance but did not investigate the influence of risk on the successful delivery of the building projects. Contrary, an empirical study conducted by Jazayeri et al. (2018) examined the perception of the subcontractor on the influential factors to the project's cost, schedule, quality, and safety outcomes to assess management safety policies. The study developed a safety rating system that could enable clients and contractors to evaluate subcontractor management procedures and policies for improving safety performance. However, the scope of the study did not examine the influence of risk on the project success criterion which is the focus of this study.

However, successful project delivery could be attained with the integration of the basic parameter to realize the feasible objective of the project. A study by Olaku et al., (2015) investigated the perception of stakeholder on the parameters for successful project delivery. The study used descriptive statistics such as a mean and ranking method which revealed time, under budget and precise specification as the main criterion in enhancing a successful building project in Niger Delta, Nigeria. Also, Chandr et al., (2012) posited that project success could be measured by time, cost, quality, profitability and customer satisfaction. The study used the project indicators to predict the function of stakeholders on project success in East Java. The findings revealed the role of stakeholders' influence which regarded as stakeholder impact, stakeholder engagement, and stakeholder psychological empowerment was correlated to project success. The studies were conducted in African countries, but the scope did not cover the respondent's perception of the analysis of risk factors on the three criterions for a successful project delivery which is the focus of this paper.

In summary, the manner in which the clients, contractors and real estate developers engaged in housing development projects will exert a significant influence on the project outcome. However, all these studies did not examine time, cost and quality in relation to the influencing risk factors in determining the most optimal value of the project. Therefore, there is a need to understand the critical risk factors that could affect the project success criterion in other to generate well-planned strategies for improving the performance of future building projects.

2.2 Risks in Real Estate Development

Risk is unavoidable in property development process. Its influence can easily be discerned from the inception of the idea, project feasibility, design and planning, construction and disposal stage (Khumpaisal and Chen, 2010; Sotoni et al., 2010). Risk connotes different meaning depending on the exposure to difficulty or loss. The US-based Project Management Institute (PMI) (2008) defined risk as "an uncertain event or condition that, if it occurs will have either a positive or negative effect on one or more of the project's objectives", which could be project cost, time, scope and quality.

In addition, risks in real estate development have been related to the "separation of design from construction, lack of integration, poor communication, uncertainty,

changing environment and increasing project complexity and economic changes such as inflation and deflation, and regional economic crisis including greater competition” which could be understood as the risk that could cause adverse effect on the property development (Gehner, et al., 2006). Several authors such as (Muka et al. (2015), Otegbulu et al. (2011), Chen and Khumpaisal (2009), identified property development risk factors as social, technological, economic, environmental and political because of the overall impact on the project management processes with respect to project delay, project cost, overrun, the usage and management of the property which could result in the variation of the total value of the project whilst Akintoye and MacLeod (1997) identified different risk factors with respect to construction project under

extensive group of physical, environmental, design, logistics, financial, legal, political, construction and operation risks. All these risk factors depend on their sources and nature of the project been considered by the developers or investors within a given environment.

However, for this study, the analysis of social, technological, economic, environmental and political (STEEP) risk factors in residential property development are considered while other sources of risk were neglected since it has been established in the literature that STEEP risks are peculiar with the real estate development. These risk assessment criteria or indicators used in the design of the questionnaire survey are briefly summarized as follows.

Table 1: Risks assessment criteria for the real estate development

Risk criteria	Risk assessment
Workforce availability	This risk measures the level of developer’s satisfaction in relation to the workforce availability in the project trade area (Danter, 2007)
Community acceptability	This is measured by the degree of benefit of the project to the local communities
Cultural compatibility	This is measured by the perception of the developers toward the lifestyle harmony in the local market area
Public hygiene	The degree of impacts on local public health and safety due to the development of the specific project
Language barrier	This is measured by the degree of satisfaction of the developers towards the influence of language in the project area.
Location	The risk is measured by the degree of the location concentration on properties values
Site condition	This is measured by the degree of difficulties in selection of site or preparation of the site for a project.
Designers and constructors	It is measured by the developers’ satisfaction with the professional experience with regards to the requirement of the development plan
Multiple functionalities	It is measured by the degree of technical difficulties in construction which could affect the project construction cost (Lam <i>et al.</i> 2006)
Duration	It is measured by the total duration of the design and construction which has been specified in the project development plan
Amendments	It is measured by using the possibility of amendments in design and construction for each specific development plan
Accessibility and evacuation	It is measured by the access degree and quick emergency depending on the design of the project (Moss et al., 2007).
Inclement weather condition	It is measured by the perception of the developers on the influence of weather condition on the project
Adverse environmental impact	It is measured by the overall impact of the environment in the project area.
Pollution	It is measured by the perception of developers towards the degree of land pollution in relation to the specific development
Work hour restriction	It is measured by the rate of work hour restriction during the developmental stage of a project.
Accident related loss	It is measured by the level of the risk impact on the financial aspect of the development project.
Demand and supply	It is measured by the degree of estimation of demand and supply of similar property.
Cash flow liquidity	It is measured by the degree of ability to pay the contractual sum
Lifecycle valuation	It is measured over five years for properties in the area
Area accessibility	measured by using the degree of regional infrastructures usability associated with a specific development
Fluctuation in material price	It is measured by the degree of impacts of variation in the prices of materials on projects
Interest rate	This is assessed by the degree of impact change in interest rate on project investment.
Marketing liquidity	It is measured by the sale of property at the same rate in terms of unit price and transaction time of similar properties in the trade area
Investment returns	to measure the expected investment returns are internal rate of return, net present value or return on investment in real estate development

Political group or activists	This is measured by the degree of protest of the urban communities in relation to real estate development in the trade area.
Rigid bureaucracy or corruption	This is measured by the perception of the developers' satisfaction towards project administration of the same kind of real estate development project
Local tax/council approval	This is measured by the total days of construction design approval process by Abuja Metropolitan Management Council (AMMC) and the rate of the local tax impact on a specific project.

Source: Chen and Khumpaisal (2009)

3. Methodology

Primary data was used for this study. The data were elicited through the use of questionnaire administration and sourced from the member of Real Estate Developers Association (REDAN) Abuja Chapter, Nigeria. It was observed that there were 65 active members in Abuja, the study adopted a total enumeration survey. Out of 65 members, about 90% questionnaire was accurately filled and returned. There is a consensus among housing experts on the need for a paradigm shift from government provision to partnerships between the public and private sectors because the government lacks enough resources to address growing housing challenges in many developing countries (Odebo & Oladokun, 2010) and hence the choice of REDAN members for this study. The study selected project time, cost, and profitability as the criteria for project success. This is principally because of the cost, time, and profitability metrics are objective. Consequently, our dependent variable, "Residential property development success", is binary, with 1 indicating that a project finishes within budget, scheduled time frame and makes a profit whilst the criteria for our independent variables are based on an extensive review of literature in real estate development risks because it has been explained that risks and uncertainties occurred in all real estate development projects which could have impact on overall project development processes as relates to project delay, project cost overrun and the usage of the property that causes a considerable loss in project income (Khumpaisal 2007, Otegbulu et al. 2011).

Therefore, to evaluate the effect of development risk factors (social, technological, environmental, economic and political) in project success, respondents were asked to rate their perception on the relative influence of the risks in project criteria in order to arrive at risk factors that could influence a successful residential property development decision. Also, the respondents were asked to rate on a Likert scale from 1-No effect to 5-Very high,

and the results were used to compute logistic regression analysis. The data were analyzed through the use of statistical package for social sciences (SPSS). The Logistic regression (LR) explores the predictive ability of sets or blocks of variables, and it specified the entry of variables. In logistic regression, instead of predicting the value of a variable Y from a predictor variable X1 or several predictor variables (Xs), it predicts the probability of Y occurring given known values of X1 (or Xs).

The logistic formulas are stated in terms of the probability that Y = 1, which is referred to as \hat{p} . The probability that Y is 0 is 1 - \hat{p} .

$$P(y) = \frac{1}{1 + e^{-(b_0 + b_1x_1 + \dots + b_nx_n)}}$$

Where $P(Y)$ is the probability of Y occurring, e is the base of natural logarithms, and the other coefficients form a linear combination much the same as in simple regression.

The efficiency of LR models was established. As 81.8 per cent of the total cases were found to be correctly predicted for timely completion of the project, 61.8 per cent were correctly predicted for cost overrun rate of the project while 65.5 per cent was predicted for the expected return on the project. Hence the established LR models can be used to examine the relationship between the risk factors in residential project success criterion. Thus, this paper presents the logistic regression analysis on the residential property development in the study area. It was used to determine the level of contribution and the level of significance of the independent variables (social, economic, technology, political and environmental risk factors) on the dependent variables to achieve a possible delivery process.

4. Discussion and Findings

Presented below are the significant findings of the study discussed under various subheadings.

Table 1: 1. Demographic information

Variables	Levels	Frequency	Percentage
Ownership	Private(Individual)	46	83.6
	Corporate (Limited Liability)	9	16.4
Years of experience	1-10yrs	31	56.4
	11-20yrs	15	27.2
	21-30yrs	7	12.7
	31yrs above	2	3.6
Job Position of the respondent	Project manager	23	41.8
	Director	1	1.8
	managing director	3	5.5
	senior manager	1	1.8

	Manager	15	27.3
	Architect	2	3.6
	Estate surveyors	6	10.9
	Advisory Valuer	1	1.8
	Quantity Surveyors	3	5.5
Risk Acceptability	Optimistic (risk-loving)	19	34.5
	Pessimistic (risk averse)	29	52.7
	Midway between optimistic and pessimistic (risk neutral)	7	12.7
Total		55	100.0

Table 1 shows that 46(83.6%) of the real estate organization is privately owned while 9(16.4%) are corporately owned. This can be inferred that private real estate developers participate more in real estate development in the study area. Also, it is observed that 56.4% of the organizations have 1-10 years of experience in real estate development, 27.2% fell within the range of 11-20 years of experience; while 12.7% and 3.6% have 21-30 years and above 31years' experience respectively. This showed that a reasonable number (43.5%) of the companies had obtained above ten years' experience and suggested that there has been rapid progress in real estate sector over the years in the Federal Capital Territory, Abuja. Further examination of Table 1 also showed the job position of the respondents in the organization with 23(41.8%) of total respondents being project managers, director of project 1(1.8%), managing director accounts for 3(5.5%), senior managers 1(1.8%), manager 15(27.3%), architect 2(3.6%), estate surveyors 6(10.9%), advisory valuers 1(1.8%) and quantity surveyor accounts for 3(5.5%). The outcome of the results implied that the respondents are competent, experienced and qualified them in exercising sound judgment in providing answers to the questions. Hence, the responses provided by them

could be relied upon for this study. Besides, it can be established from Table 1 that 29(52.7%) of the real estate developers accounted for risk-averse, 19(34.5%) accounted for risk-loving while 7(12.7%) accounted for risk neutral (i.e. midway). It can be implied that due to the fact the property development is fraught with risk, the respondents still geared by the expected return to be accrued from building projects.

4.1 Risk factors for timely delivery, cost and return (value for money) on residential property development

The LR analysis begins with the selection of statistically significant independent variables to be included in the analysis. The outputs given in Table 2.1-2.3 showed the stepwise LR result indicating the estimated coefficients and related statistics of the developed models for time, cost and value for money of the residential property development. Thus, among the five factors, economic factor is found to be significant as regards the timely completion and return of the project while technological factors play the most significant role in explaining the effect in cost performance of the residential property development.

Table 3: The effect of risk factors on the timely delivery of residential property development

	B	S.E.	Wald	Df	Sig.	Exp(B)
Social factor	.261	.852	.094	1	.759	1.298
Technological factor	.250	1.191	.044	1	.834	1.284
Environmental factor	-.677	.602	1.265	1	.261	.508
Economic factor	1.833	.758	5.854	1	.016	6.253
Political factor	.188	.433	.188	1	.665	1.206
Constant	-3.925	2.781	1.992	1	.158	.020

Cox & Snell R Square= .270, Nagelkerke R Square=.441

Table 2.1 showed the influence of risk factors on residential property development timely completion and the significant value is set at .05. From the analysis, it is found that the variables in the equation explained between 27.0% and 44.1% variability in the dependent variable (timely completion) as suggested by (Cox & Snell R Square= .270, Nagelkerke R Square=.441). It is evident from the analysis that economic risk factor is statistically significant to timely delivery of residential property development. The significant value is at .016, and the wald level that is the contribution of the factors in timely completion is 5.854. Furthermore, from the table, the likely effect of economic risk factors on timely delivery in residential property development is accounted as 1.833. This implied that a decrease in the effect of economic risk

factors would lead to the successful, timely delivery of the development and vice versa. The outcome of the result is in agreement with the study conducted in Ghana (Chileshe and Yirenkyi-Fianko 2012), Malaysia (Alaghbari et al., 2007), Cambodia (Durdyev et al. (2017) and Nigeria (Owolabi et al.,2014) that revealed that changes in the economic risk variables such as fluctuation in the cost of materials, lack of payment for completed works, changes in interest rate among others could impact project in terms of the speed of construction resulting into the delay in the progression of development through unworkable project scheduling and late delivery of material.

Table 4: The effect of risk factors on the cost of residential property development

	B	S.E.	Wald	Df	Sig.	Exp(B)
Social factor	-.298	.647	.211	1	.646	.743
Technological factor	-1.925	.711	7.319	1	.007	.146
Environmental factor	-.187	.388	.232	1	.630	.830
Economic factor	.489	.718	.464	1	.496	1.631
Political factor	.120	.277	.186	1	.666	1.127
Constant	7.035	2.656	7.018	1	.008	1135.974

Cox & Snell R Square= .273, Nagelkerke R Square=.371

Table 2.2 shows the effect of risk factors in cost that will lead to profit maximization. In this case, the risk factors in the equation explained between 27.3% and 37.1% variability in the dependent variable. Also, the significant column provided information on the variables that contributed significantly to the predictive ability of the dependent variables. The technological risk factor is statistically significant to profit maximization at a p-value of 0.007. The beta (B) value in the second column explained the probability or likelihood of the predictor variables on the dependent variables and also showed the direction of the relationship. The outcome of the result indicated that an increase in the effect of the technological risk factor in residential property development would affect the likelihood of achieving maximum profit. This

outcome is in agreement with Subramani et al. (2014), Durdjev et al. (2017), asserted that inclement weather, the high cost of skilled labor and project managers, change orders, reworks and additional works could serve as indicators to cost overruns in the residential building projects. In contrary to this, Dokata (2017) pointed out that fluctuation in the price of construction materials, the size of a project, the rate of human capital expenses and project cost were the main influencing factors likely to impact cost performance of a real estate projects. The difference might be because the scope of the study was limited to commercial buildings cost performance and the difference in the business environment.

Table 5: The effect of risk factors on returns(value for money) in residential property development

	B	S.E.	Wald	Df	Sig.	Exp(B)
Social factor	-.144	.523	.076	1	.782	.866
Technological factor	.264	.871	.092	1	.762	1.302
Environmental factor	-.651	.531	1.500	1	.221	.522
Economic factor	1.026	.490	4.391	1	.036	2.790
Political factor	-.434	.331	1.722	1	.189	.648
Constant	-.691	2.443	.080	1	.777	.501

Cox & Snell R Square= .187, Nagelkerke R Square=.258

Table 2.3 provides information on the influence of risk factors on residential property development expected return at the significant value of 0.05. From the analysis, it was found that the variables in the equation explained between 18.7% and 25.8% of the variability in the dependent variable as suggested by (Cox & Snell R Square= .187, Nagelkerke R Square=.258). Furthermore, it is evident from the analysis that the economic risk factor is statistically significant to residential property development expected return. The significant value is .036 at the level of contribution of 1.026. It was revealed that the probability of the effect of economic risk factors on residential property development expected return is 1.833. The outcome of the result is in consonance with the studies by Fereidouni and Bazrafshan (2012), Klimczak (2012), Anule and Umeh (2016) that changes in interest rate, selling price and volume rate of the same kind of properties in the local market, marketing strategy as related to housing projects returns might affect the real estate investors to take

effective and rational investment decisions that constitute the total value of the projects. This implied that a decrease in the effect of economic factors would lead to a higher expected return that would be generated on the developed residential property.

5. Conclusion

The study investigated the respondent's perception of residential property development in Nigeria. From the outcome of the survey, significant prioritized risk factors that could influence the time, cost and the expected return of a residential project were identified. The data were analyzed using mean and logistic regression analysis of which are critical in knowing the most influencing risk factors in residential property investment appraisal. The findings revealed that technological risk factor such as accessibility and evacuation, condition of the site, designers and constructors, inclement weather, reworks/amendment among others are statistically

significant in assessing the cost performance whilst economic risk factor such as fluctuation in cost of building materials, demand and supply, cash flow liquidity, location among others are statistically significant in examining timely completion and value for money (return) of the residential property development which could cause variation between the actual and estimated outcomes. This implied that if consequences of risk factors are not adequately understood and managed or monitored it could affect the successful property development appraisal. Hence, there is a need for the real estate investors both the local and international to develop risk factors assessment technique for practitioners and academia to assess the residential property development performance as related to timely completion, cost and returns elements to improve competence to manage and minimize the effect of risk factors on the residential investment appraisal.

Also, the study contributed to the empirical investigations related to the analysis of risk factors

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- regarding the residential project success which will strengthen the existing theories. This study provided information into the phenomenon of how risks could impact the residential property development performance and could guide real estate developers to improve real estate investment decision making given the negative effects of project's time and cost overrun on investors profit expectation. However, the limitation to the findings of the study is that the analysis was conducted on residential property development and the respondents involved were only the registered property developers while others actors in the development industry were left out of the sample. Therefore, the paper may serve as a guide on which further detailed analysis could be examined to establish significant contributors to improving the time, cost and value for money performance in the real estate development industry.
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