Cost Benefit Analysis and Public Projects Execution in Lagos State Nigeria

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ABSTRACT

Government of nations faces the projects selection task, a situation where the main problem is to choose the project among others in certain needs and terms. In this context, project appraisal, which assesses a project's net contribution to overall social welfare, becomes particularly difficult. This is because traditional appraisal methods are inadequate, as they cannot accurately measure the value of the utility or benefits the society will gain from the project in quantifiable monetary terms. This paper examined effect of cost benefit analysis on public projects execution in Lagos State, Nigeria. The paper employed survey research design by distributing questionnaires to the target population. The study adopted sampling technique. The data was collected using a five scale structured questionnaires. The results show that Cost Benefit Analysis has an effect on Quality Strategic Decision in Nigeria, (Adj. $R^2 = 0.302$, $F = 20.801$, $P < 0.000$). The result show that cost benefit analysis has an effect on quality and durability of the projects in Nigeria; (Adj. $R^2 = 0.398$, $F = 31.199$, $P < 0.000$). Arising from the findings, the paper concluded that cost benefit analysis has a significant influence on public projects execution in Lagos State, Nigeria. The study recommended that the government, policymakers, and the general public in Nigeria should demonstrate patriotism and ethical responsibility in fulfilling their respective duties.

Keywords: Cost benefit analysis, Cost effectiveness analysis, Expected economic contribution, Potential benefit analysis, Public project execution.

Introduction

One of the major tasks of public sector projects execution is to choose the best project among the other contending ones, especially when the quantitative and standard appraisal method of some the projects is not applicable considering the intangibility nature of the public projects (Holstvolden, 2019). Government of nations faces the projects selection task, a situation where the main problem is to choose the project among others in certain needs and terms. In this view, project appraisal as a measure of the net contribution of a project to overall social welfare become a great challenge, since the known and recognized appraisal method cannot be used considering the inability to measure the value of utility the society is going to derive from such project in quantifiable monetary form (Hjelmbrekke, et al., 2017).

Studies had shown that globally, there are myriad challenges of public sector projects execution due to intrinsic subjectivity inherent in social and economic welfare goods and services decisions (Volden & Andersen, 2018). There are great concerns of public investment funds limitations through budget restrictions, there are misplacements of skills and human intellectuals in application of the government limited resource, disregards to consultations in exploring and weighing various options available with the process of project appraisal mechanisms and choice that would stand test of time (Volden & Samset, 2017). Chan (2014) documented that cost benefit analysis is favourably disposed in enhancing quality decisions, minimizing risk and maximizing gains for the public sector projects execution, most often they are ignored.

In Nigeria, there are problems of incessant failure and abandonment of projects, poor monitoring during execution, and many built contrary to specification, using poor quality materials, sadly, people collect mobilization fees and in most case complete sum with anything to show for it (Ewa, 2013). There are problems of inefficient management, delay decisions, lack of innovations, excessive political party interferences, underutilization of resources, and problems of time management. In the midst of these problems and the concern of decisions of precision definition of the framework and projects analyses, coupled with identification of major problems and dangers of each project, this study is directly concerned with the problems

of non-quality strategic decisions, inefficient and durability of projects when executed, and inadequate expected economic contributions of public sector projects execution in Nigeria.
To address the issue of government project execution, an efficient project investment decision is required, which includes sound investment selection, Active management of asset portfolios, including the disposal of assets, alongside a budgeting process that allocates ongoing funds for the operation and maintenance of existing assets, is essential. This is particularly important for donor-funded programs that create assets, which can be significant in many low-income countries, while the government bears the expenses of management and upkeep. A more formal review procedure employing appraisal method such as cost-benefit analysis through the budget committee or equivalent of the legislature, supported by high levels of public openness, might help to reinforce the evaluation criteria and gateways set in place (Pulmanis, 2017).

Some studies suggest that there are three tires of government in Nigeria hardly appraise projects before embarking on them and when it is done, appropriate and suitable appraisal methods are not used. There are mismatched positions placements in Nigeria, the competent and skilled personnel are scarified for less qualified personnel for zoning system, political patronage, ethnic and religious considerations, corruptions and public fund embezzlements and clear recklessness in handling public project funds (Omoniyi, 2011).

Though there are vast studies that had studied, cost benefit analysis from different perspective (Newness et al., 2018; Askim et al., 2018; Niels & Van-Dijk, 2018). Nevertheless, far few of them had considered the effect of cost benefit on public sector project decision using the variables identified this store intends to explore, creating gaps in literature. Addressing the problems of this study as identified, this study proposes to investigate the effect of cost benefit analysis on public Projects execution in Lagos State, Nigeria.

The main objective of this study was to evaluate the effect of cost benefit analysis on public projects execution in Lagos State, Nigeria. The specific objectives are to:

1. evaluate the effect of cost benefit analysis on quality of strategic projects execution in Lagos State, Nigeria.

2. investigate the effect of cost benefit analysis on quality and durability of the projects in Lagos State, Nigeria.

The following hypotheses were formulated:

$H_0$1: Cost benefit analysis has no significant effect on quality of strategic project executions in Lagos State, Nigeria.

$H_0$2: There is no significant effect of cost benefit analysis on quality and durability of projects in Lagos State, Nigeria.

Literature Review/Theoretical Review

Conceptual Review

Public Projects Execution

The public sector is defined as a portion of the national economy whose economic and noneconomic activities are controlled and directed by the government. The public sector is the part of the economy that produces products and services with the goal of maximizing the welfare of the population (Amade et al., 2015). Public Sector projects execution and conceived ideas and pragmatically executed towards building a public goods or services for the general benefit of the citizens, in line within the constraints of the budgets. The durability and benefits derivable from projects largely depends on the quality of decision inputs before committing funds into such projects. Public Sector project decisions according to Daniel and Eze (2016) are the decisions made by the people before embarking on public sector goods or services meant for the generality of the society by the government (Engel et al., 2014).

According to Serpell (2014), cost-benefit analysis takes into account the public sector's monopoly influence over the prioritization of critical public projects. Furthermore, it takes into account not only financial commitments to projects, but also the likely positive and negative impacts of project execution on society, and failure to consider these impacts in project execution may jeopardize the lofty goals of the projects in question, regardless of the size of the financial commitment. Omoniyi and Jiboye (2011) had earlier in a studies of the effective

housing policy and sustainability development in Nigeria, documented that since Public Sector projects execution are sensitive and require investing the limited resources at the disposal of the public treasury in the best way possible, therefore, an expertise knowledge is needed to take quality decision in handling public sector projects in order to achieve recurring success and meeting the expectations of the public.

Quality of Strategic Decision

Heald and Georgiou (2016) posited that taking quality strategic decision is required in deciding projects that last the test of time. While prior studies have debated on the various tools and best practice process in making a rational decision for public sector projects and investments, only few empirical studies focused on distinctive aspect of quality decision making in public sectors in Nigeria, as this is quite different from other profit oriented investment ventures such as the private businesses firms. Makowsky and Wagner (2019) documented that going into any project, requires an appraisal directed at finding out the least possible costs of the project, the alternatives and the likely maximum economic benefits accruable from such project before the commitment of government resources into them.

In the public sector, there must be projects that need to be executed and often somethings that are critical to the success of the national social economic benefit. Because of the high stakes, good public office holders do not just make decisions based on guts and instinct rather should be based on quality rational decisions, and as a product of a thorough technical appraisal methods. It requires pragmatic, rational and quality decision-making aimed at minimizing risks and maximizing benefits to the best least ability of the decision makers and acting when there is more certainty than uncertainty (Ciraci & Polat, 2019).

Quality and Durability of Projects

One of the various methods to determine project worth and quality is through its quality and longevity. According to Hjelmbrekke et al., (2017), because the economic value of some projects cannot be accurately estimated due to the nature and welfare goal of the government, the quality and durability of such projects can provide economic reassurance that the public

sector fund was spent judiciously and wisely. Quality and durability are the long-term worth of projects since they provide greater economic benefits to residents. Cost benefit analysis is a method that is commonly used to assess the prospective costs and advantages of a specific investment or project, such as a significant rail, road, or bridge investment, to ensure the quality and durability of such projects (Klakegg et al., 2016). The cost benefit analysis approach, which is founded on early welfare economic theory, reflects the quality and durability of projects.

Quality and durability of projects provide a veritable basis for the evaluation of effect of various projects and policy changes, particularly the completed infrastructure investments in a wide variety of the appraisal work. Instead, several economists have proposed the use of quality and durable projects as criteria of positive effect of cost benefit analysis on Public project sectors execution in a study of moving beyond traditional valuation of vaccination by (Bloom et al., 2017). The concept of quality and durability in projects, as a measure within cost-benefit analysis, is often used informally to describe any decision-making analysis that compares the expected costs and benefits of an investment in monetary terms. In principle, for a cost-benefit analysis to be considered comprehensive, it must capture all benefits resulting from an intervention, valuing them either at their market value, based on quality and durability, or by the level of consumption individuals are willing to sacrifice to obtain them. This concept has its roots in welfare economics, which quantifies social welfare by assessing society's willingness to endorse the quality and durability of a project after extended use (Le et al., 2019).

Cost Benefit Analysis

Historically, cost benefit analysis was initially employed in the United States of America during the great depression (Khadaroo, 2014). Under Franklin Roosevelt, large public works program was conducted in an attempt to boost economic development. The then national planning board employed economists to research the economics of planning public works and these economists proposed that the economic benefits given by public works projects be assessed in monetary terms whenever practicable (Jaldell, 2013). The question then emerged on how to quantify the value of social worth or the value of each of the various projects and cost benefit analysis

presented a more adequate test of economic worth than had prior methodologies (Jena & Philipson, 2013).

The concept of cost benefit analysis has been viewed from different viewpoints by different studies. While some opined that cost benefits analysis are basically for public sector projects, others considered it one of projects and investment appraisal techniques, and not necessarily for the public sectors alone. From the public sector perspective, Klakegg et al., (2016) defined cost benefit analysis as a systematic approach to estimate the short and long term consequences of projects, especially the public projects. Egbunike et al., (2017) defined cost benefit analysis attempts to evaluate the proposals from the perspective of citizens by placing all the costs and benefits on a comparative monetary scale. From the general projects or investment perspective, cost benefit analysis is a qualitative investment appraisal technique to enable potential investors weighs the benefits and implications of such actions (Liu et al., 2015).

Cost-benefit analysis assists public decision-makers in identifying projects that will maximize social benefits. It thus helps prioritize infrastructure-related projects by determining the order in which work should begin (Love, Liu, Matthews, Sing & Smith, 2015). In the public sector structure, there are ranges of resources and the efficient use of these resources has significant effect on the welfare and living standards of the citizens of the country or states in the country. As resources are limited, a decision on how to spend them is greatly important (Meunier et al., 2015).

Cost Effectiveness Analysis

The concept of cost effectiveness is a process of picking among alternatives line of actions in the public sector with regards to making effectiveness in attaining specific goals or objective (Lawani & Moore, 2016). According to Khan et al., (2019), cost effectiveness analysis is worried essentially on cost implication of the projects and not so much on the benefit. Cost effectiveness analysis does not aim to offer information on the benefit of reaching the specified target of a public sector initiative. In affordability analysis, the primary goal of cost efficiency

for public expenditures funded with public resources is to assess how well a project aligns with government development policies. It also examines the extent to which the project contributes to achieving the key objectives for which the funds were allocated. Additionally, affordability analysis evaluates whether the project is delivering value for money, especially if subjected to an audit (Chen, et al, 2018).

Al-Janabi (2018) established that the results of cost effectiveness analysis do not require representation in financial terms, but rather can be applied to public sector expenditures projects, where there's huge numbers of compatible quantitative schemes indicators that are not quantifiable monetarily, while being comparable with the suitable quantitative indicators of other comparable projects (Okpala, 2013). Kazanovski (2014) suggested that cost effectiveness involves the fulfilment of three basic situations: A situation of determining a shared aim or application that must be fulfilled for the common benefit of the stakeholders. The existence of alternatives for achieving established objectives, along with limiting factors in problemsolving, is essential.

Hernandez et al., (2018) highlighted that alternative method for project completion must be available for comparison. Furthermore, the limiting factors, such as time, cost, or project effectiveness, must remain within reasonable limits to ensure that the potential solutions being evaluated can be assessed in the most optimal way. Certain steps are important to cost effective analysis: The necessity to clearly outline objectives, purpose and relevance of the projects. The cost effectiveness analysis will determine the best potential strategy for their achievement; defining the conditions essential for the achievement of defined objectives. This implies to first give the basic criteria for the achievement of the objectives or specified goals, followed by the others; In order to establish alternatives for reaching the goals, each goal must have a minimum of two possible approaches; identify appropriate verification measures for the suggested alternatives (Kazanovski, 2014). Additionally, a list of potential value criteria can include sustainability, availability, dependability, and feasibility; pick a method for figuring out fixed success, fixed, and overhead costs (Fan & Luo, 2019). When using predetermined criteria, the

option that has the lowest cost of reaching various success levels may be the most advantageous one.

Potential Benefit Analysis

Klakegg, et al., (2016) further submitted that potential benefit analysis overrides the cost implication in cost benefit analysis. Potential benefit is synonymous with commercial investment appraisal technique, suggesting that what the society tend to benefit from a potential project is most pivotal in decision taking. In addition, McGrath and Whitty (2015) stated that potential benefit in most cases ignores the cost implication of some project, but the derivable project, since some projects are not executed for profit purposes, but for the conveniences of the society and incidentally, those conveniences and social goods are unquantifiable in nature. The potential benefits the society will derive from such projects like healthcare centers, public schools, good roads, recreational centers are inestimable (Musawir, et al., 2017). Accordingly, the study of Liu et al., (2018) defined potential benefits analysis as the evaluation of usefulness and benefits of government projects.

Projects execution is taken after due feasibility and viability analysis of the projects have been considered, likewise, the societal benefits accruable from the specific projects when completed. Projects decision-making in the public sector setting is managerial and strategic in nature, as it demand experts input and the desirability of the projects by the masses. When deciding on a project, it is expected that lots of key decision indexes are put into consideration, since projects execution in public sector can be complex and could have wide-ranging implications on the public interests and executable projects, as a result, the decision-making processes in public sector merit an evaluation and empirical analysis for an optimal benefit of the projects when completed for the citizens (Samset & Christensen, 2017).

Expected Economic Contribution

Kind, et al., (2017) defined expected economic contribution from the perspective of the society, the economic benefit of the projects now, and in the future. It considers the expected economic contribution from the point of the society, quantifying benefits from the environmental

usefulness of the projects. At the same time, being a welfare perspective, it does not provide any clear monetary quantifiable mechanism nor information on the impact of the investment project on the economy, the gross domestic product per capita and employment (Iossa & Martimort, 2015). In making decision on projects selection, the expected economic contribution is important, decision-makers face with competing alternatives often need to answer the question whether it is worth investing taxpayers' money considering the likely expected economic contributions of the prospective project now and in the most near or long time period (Jupe, 2012). Bert and Sebastian (2018) defined expected economic contribution as the immediate and future benefits derivable from projects by the citizens in the public sector.

The economic value and its long time sustainability aimed at sustainable development and welfare of the citizens. Consequently, presenting the costs and benefits of a project, including identifying the primary cost and benefit components and their monetary assessment, is necessary when making decisions, particularly when those decisions involve trade-offs. Costbenefit analysis allows decision makers to compare costs and benefits to society as a whole, as well as to individual entities, in comparable monetary units. In order to do this, decision makers must allocate resources as efficiently as possible while keeping in mind the expected economic contribution from the projects (Khan et al., 2019).

Theoretical Review

Transaction Cost Economic Theory

Transaction cost theory was developed by Williamson in the 1979 (Williamson, 1979). The theory is well known in the transactional and theoretical public sector projects, stating that every economic exchange has a cost. The theory states that economic activities are associated with cost and establishments act in any way possible to minimize these costs. The theory of transaction economic theory has some resemblance with agency theory as both seek to curtail the opportunism and self-interest through government mechanisms (Iossa & Martimort, 2015). Transaction cost economic theory emphasizes on individual transaction whereas the focus of agency theory is on the principal-agent relationship. Contextually, transaction cost economic

is applied to define the process of a forgone alternative and opportunity cost associated with the process of selecting projects, contracts and supplies (Pessali, 2006).

Some of the early supporters of transaction cost economic theory include Kochhar (1996); Winch (2001); Carter and Hodgson (2006). However, some flaws had been found in the transaction cost economic theory by some studies. Ahola et al., (2014) submitted that transactional cost theory omitted what type of cost that is associated with exchange in transactions.

The transaction cost economic theory is relevant and suitable for this study because theoretically, a choice of one project among contending projects has some forgone alternative cost implication, and that opportunity cost is quantifiable.

Managerial Opportunity Theory

Managerial Opportunity Theory was developed by Desai and Dharmapala in 2006. The managerial opportunity theory is concerned with the planning activities and agency problems inherent in public sector governance. The managerial opportunity theory argues that the tax revenue planning activities in the hands of few government officials can create a shield for managerial opportunism and the tendencies of diversion of public funds meant for developmental projects for the common good of all citizens. The theory of managerial opportunity posited that straightforward diversion and subtle forms of government funds manipulation can be facilitated when managers undertake tax avoidance activity in case of private establishments and manipulation and diversionary of public sector funds by few government officials.

Some of the studies that had written in support of managerial opportunity theory include Hutton et al., (2017); Foster (2013) posited that managerial opportunity theory is the opportunity of government and its agencies to exhibit managerial opportunity in demonstration of trust and social contract benefits.

In contrast, Granlund (2010) stated that the proponents failed to distinguish between manipulative for personal reasons and creative actions like tax avoidance activities. Gafni and Birch (2006) opined that tax planning has the direct effect of increasing corporate profitability and firm value for firms with strong governance institutions, whereas there are weak governance institutions, which increases opportunities for managerial fund diversions.

The theory is highly pertinent to this study as it posits that the successful execution of public sector projects is contingent upon the managerial competence and capabilities of the project managers, and the quality of decisions made directly affects the overall quality of the projects.

Empirical Review

Several prior studies on the effect of cost benefit analysis on public projects execution in Lagos State, Nigeria. Some of the studies incorporated various cost benefit analysis tools in analyzing the impacts and effects on public projects execution in Lagos State.

Wolff et al., (2022) conducted a comprehensive evaluation and summary of the costeffectiveness of artificial intelligence in healthcare, as well as an assessment of whether the products fulfil established quality standards. The study's objectives were to apply cost effectiveness analysis and look at the financial impact of artificial intelligence. Utilizing both qualitative and qualitative inclusion and exclusion criteria, the study conducted a systematic literature review to find pertinent papers for a thorough examination of the economic impact of assessment. The study discovered that the quality of the evaluated publications on artificial intelligence had methodological flaws and that very few publications had a favorable influence on artificial intelligence and that had fully addressed economic effect evaluation. That according to the inclusion criteria, only 6 of the 66 papers could be included in the analysis's second stage. Not one of the six studies included a methodologically thorough cost impact study. The study came to the conclusion that there are two areas that need to be improved in subsequent research: first, the initial investment and operating costs; and second, alternatives

that can have a comparable effect should be assessed in order to provide a thorough comparison.

With the goal of addressing the question of whether using cost benefit analysis instead of the more common cost effectiveness analysis would be an improvement, specifically in appraising health and health-related investments in low- and middle-income countries, Culyer and Chalkido (2019) studied economic evaluation for health investments effect on universal health coverage. The study used a selective literature review that traces the origins of both approaches in welfare economic welfarism and extra-welfarism. The primary characteristic that set the two studies apart was the financial assessment of health outcomes through cost-benefit analysis, as opposed to the utilization of health constructs like the quality-adjusted life year or the disability-adjusted year.

Deficits in project governance and program analysis for infrastructure development were examined by Asadullah et al. in 2019. The study quantified the three aspects of project governance—portfolio direction, sponsorship, effectiveness, and efficiency—as well as disclosure and reporting using the relative importance index method. It also used a latent construct of project governance validation through second-order confirmatory factor analysis. The study found that deficiencies in projects had a negative effect on infrastructure development. The study concluded and found that disclosure reporting is among the least practicing dimension, project portfolio direction is relevant, and sponsorship, effectiveness and efficient had a significant effect on projects execution in Pakistan. The study also found that there is low completion of project due to multilayered bureaucratic system in the public sector. The study recommended that since most practicing project program involves the alignment of portfolio with objectives and strategy are required for project program, policy maker should explore the use of project program as an appropriate measure to enhance effectiveness of projects execution.

Seungman et al., (2018) investigated the costs and advantages of using hand pumps for borehole rehabilitation or drilling in resource-poor and difficult-to-reach locations. Based on the

empirical results from a cluster randomized controlled trial, the study population was determined. The intervention costs in the study were calculated by accounting for the total investment and estimated annual operating expenses. Direct financial benefits were estimated from the prevention of diarrheal illness in children, while indirect financial benefits were linked to improved health. Additionally, non-health benefits, such as enhanced water quality, were also considered for their connection to better health outcomes. Both one-way and multiway sensitivity analyses were performed to evaluate the reliability of the results. The analysis shows that borehole repair is less expensive than borehole drilling. One of the biggest contributions to the two programs was the time savings, which was followed by the financial gains from preventing child deaths. The sensitivity analysis results indicated that borehole rehabilitation proved to be more effective than drilling new boreholes, and that upgrading water sources consistently yields significant returns. According to the study, there was a mixed effect of positive and negative effects on project funding depending on the cost and utility of drilling or restoration of boreholes. This highlights the substantial returns from borehole rehabilitation, supporting the case for increased funding for water improvements in rural areas. The study recommended using these findings as evidence to assist governments or international organizations in making policy decisions regarding additional funding for enhanced rural water coverage and selecting appropriate design interventions.

Ye et al., (2018) looked at the empirical examination of businesses' propensity to take part in PPP projects for infrastructure. This study sought to investigate the variables influencing private participation in private participation projects (PPPs), taking into account the willingness to participate as a function of both external (government behaviour, institutions, and project characteristics) and internal factors (firm nature). Nine variables profitability, political connections, government intervention, government support, project complexity, and project experience in particular had a negative significant coefficient effect, according to the study, which used a logistics regression model and data from a questionnaire survey. Businesses that are more profitable, have more clout in politics, and have completed more projects are more likely to be open to working on PPP initiatives. The study suggested that it can be used as a

guide to influence the private sector's incentive to take part in initiatives involving private participation (PPP).

Methodology

The paper covered all the active management staff of government parastatals and others who are in managerial positions agencies particularly, Assets Management Office (A.M.O) and the Public Procurement Office (P.P.O) in Lagos State using survey research design by distributing questionnaires to the target population. The data was collected using a five scale structured questionnaires. ***Model Specification***

Y = f(X) ---------- (1)

Y= Dependent Variables

X = Independent Variables

Where: Y = Public Projects Execution (P.P.E)

X = Cost Benefits Analysis (C.B.A)

Y= (y_1) y_1 = Quality of Strategic Decision y_2 = Quality and Durability of Projects

While,

X= (x_1, x_2, x_3) x_1 = Cost Effectiveness Analysis x_2 = Potential Benefit Analysis x_3 = Expected Economic Contribution

$QSDi = \beta0 + \beta1CEAi + \beta2PBAi + \beta3BCi + \mu i$ Model 1

$QDPi = \beta0 + \beta1CEAi + \beta2PBAi + \beta3BCi + \mu i$ Model 2

Where

β1-β3= the coefficient of the explanatory variables

QSD = Quality Strategic Decisions

QDP = Quality and Durable Projects

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CEA = Cost Effectiveness Analysis

PBA = Potential Benefits Analysis BC = Budget Constraints β0 = regression intercept which is constant i = Cross sectional

μi = Error term of the model

Sample Size and Sampling Technique

In this study, the researcher adopted the convenience sampling technique. This technique was chosen because it allowed for the selection of participants that have expertise in public sector administration and have experience on issues relating to public Projects execution. Furthermore, the public sector senior staff was the recognized government officers who are saddled with the responsibility of deciding, monitoring and supervision of contractors handling some of the government projects in Lagos State using Taro Yamani's (1967) and Robinson et al., (2013) formula. This is similar and consistent with the study of Heald and Georgiou (2016).

Where; n = sample size
N = Population size α = level of significance

Furthermore, according to Robinson et al., (2013), 30% and above of the total sample size will be expected to be added to ensure every form of uncertainty will be covered, to ensure a more robust study, the study proposes increase to 40% of the calculated sample size (131.09 + 40%) = 184 respondents.

Results and Discussion of Findings

Table 1: Descriptive

	N	Minimum	Maximum	Mean	Std. Deviation
QSD	184	3.2	5.0	4.3620	0.40498

QDP	184	1.6	5.0	4.0848	0.64527
CEA	184	2.4	5.0	4.3217	0.5061
PBA	184	1.2	5.0	4.2054	0.68343
BC	184	1.6	5.0	3.9804	0.78458

Source: **Authors Field Survey (2024)**

Note: QSD = Quality Strategic Decisions, QDP = Quality and Durable Projects, TDP = Time Delivery of Projects, CEA = Cost Effectiveness Analysis, PBA = Potential Benefits Analysis, BC = Budget Constraints.

From the descriptive results, Table 4.1 shows that the average values and the corresponding statistics for Quality Strategic Decisions (QSD), Quality and Durable Projects (QDP), Expected Economic Contribution (EEC), Cost Effectiveness Analysis (CEA), Potential Benefits Analysis (PBA), Budget Constraints (BC) are gained from 184 observations. Besides, it is obvious that the scores hover around 1 and 5 signifying that the scores are composite score of a 5-point rating scale category. Again, the standard deviations indicate that the response widely varies among the sampled respondents. Overall, all the indicators have average values that range between take value between 3.98 and 4.36. Also, the standard deviation ranges between 0.40 and 0.78.

Test of Hypothesis One

Table 2: Cost Benefit Analysis and Quality Strategic Decisions - Model 1

Regression Model					Collinearity Statistics	
	B	**Std. Error**	**T**	**Sig.**	**Tolerance**	**VIF**
(Constant)	2.216**	0.279	7.937	0.000		
CEA	-0.020	0.062	-0.322	0.747	0.643	1.556
PBA	0.113*	0.049	2.303	0.022	0.552	1.812
BC	0.035	0.041	0.874	0.384	0.617	1.622

R-squared	0.317
Adjusted R-squared	0.302
F-stat.	20.801
P>F-stat.	0.000

Source: Authors Computation (2024)

$QSD_i = \beta_0 + \beta_1 CEA_i + \beta_2 PBA_i + \beta_3 BC_i + \beta_4 MC_i + \mu_i$ Model 1

$QSD_i = 2.216 - 0.020 CEA_i + 0.113 PBA_i + 0.035 BC_i + 0.374 MC_i + \mu_i$ Model 1

In Model 1, cost effective analysis (CEA) negatively affects quality strategic decisions (QSD) of projects in Nigeria. Based on the probability of t-statistics (-0.322) of (P-value of 0.747) i.e.

74.7% which is higher than 5% level of the chosen level of significant of 5%, implies that CEA do not significantly affect quality strategic decisions (QSD). The coefficient of CEA (-0.020) means that a Naira increase in CEA would yield 0.020 Naira decrease in quality of strategic decision of projects in Nigeria.

In addition, potential benefit analysis (PBA) positively affects quality strategic decisions. Since the probability of t-statistics (2.303) of p-value (0.022) i.e. 2% which is lower than 5% level of the chosen level of significant. It therefore means that PBA significantly affect quality strategic decisions (QSD). Also, the coefficient of PBA (0.113) implies that a Naira increase in PBA would yield 0.113 Naira increase in quality of strategic decisions of projects in Nigeria.

Also, budget constrains (BC) positively affects quality strategic decisions (QSD) of projects in Nigeria. The probability of t-statistics (0.874) is p-value 0.384 i.e. 38.4% which is higher than the chosen level of significant of 5%. This means that BC do not significant affect quality strategic decisions (QSD). In addition, the coefficient of BC (0.035) means that a Naira increase in BC would yield 0.035 increase in quality strategic decisions (QSD) of projects in Nigeria

Decision: From the outcome of the regression results in Table 4.2 the computed F-statistic = 20.801 (P - value = 0.000) and Adjusted R – squared = 0.302; the study failed to accept the null hypothesis one (H_{01}): Based on the estimated parameters, at a level significance of 0.05, *FStatistic* is 20.801, while the *P-value of the F-Statistics is (*0.000), which is less than 0.05. The study rejected the null hypothesis and accepted the alternate, which implies that cost benefit analysis had a positive significant effect on quality strategic decision of project execution in Nigeria.

Test of Hypothesis Two

Table 3: Cost Benefit Analysis and Quality and Durable Projects – Model 2

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Regression Model					Collinearity Statistics	
	B	**Std. Error**	**T**	**Sig.**	**Tolerance**	**VIF**
(Constant)	0.196	0.413	0.475	0.636		
CEA	0.341**	0.091	3.739	0.000	0.643	1.556
PBA	0.292**	0.073	4.007	0.000	0.552	1.812
BC	0.106	0.060	1.771	0.078	0.617	1.622

R-squared	0.411
Adjusted R-squared	0.398
F-stat.	31.199
P>F-stat.	0.000

Source: Authors Computation (2024)

$QPD_i = \beta_0 + \beta_1 CEA_i + \beta_2 PBA_i + \beta_3 BC_i + \beta_4 MC_i + \mu_i$ Model 2

$QPD_i = 0.0.196 + 0.341 CEA_i + 0.292 PBA_i + 0.106 BC_i + 0.176 MC_i + \mu_i$ Model 2

In Model 2, cost effective analysis (CEA) negatively affects quality and durable project (QDP) of projects in Nigeria. Based on the probability of t-statistics (3.739) of (P-value of 0.000) i.e. which is higher than 5% level of the chosen level of significant of 5%, implies that CEA significantly affect quality and durable project (QDP). The coefficient of CEA (0.341) means that a Naira increase in CEA would yield 0.0.341 Naira decrease in quality and durable projects in Nigeria.

In addition, potential benefit analysis (PBA) positively affects quality and durable projects. Since the probability of t-statistics (4.007) of p-value (0.000) lower than 5% level of the chosen level of significant. It therefore means that PBA significantly affect quality and durable projects (QDP). Also, the coefficient of PBA (0.292) implies that a Naira increase in PBA would yield

0.292 Naira increase in quality and durable projects in Nigeria.

More so, budget constrains (BC) positively affects quality and durable projects (QDP) in Nigeria. The probability of t-statistics (1.771) is p-value 0.078 i.e. 7.8 which is higher than the

chosen level of significant of 5%. This means that BC do not significant affect quality and durable projects (QDP). In addition, the coefficient of BC (0.106) means that a Naira increase in BC would yield 0.106 increase in quality and durable projects (QDP) in Nigeria

In addition, as in Table 4.2, the F-statistics value computed is 31.20 [P – value = 0.000]. What this means is that Cost Effectiveness Analysis (CEA), Potential Benefits Analysis (PBA), Budget Constraints (BC), Managerial Competence (MC) jointly and significantly explain variants in Quality and Durable Projects (QDP). Likewise, the adjusted R-square is 0.40 (approximately) signifying that percentage of the variances in QDP explained by Cost Effectiveness Analysis (CEA), Potential Benefits Analysis (PBA), Budget Constraints (BC), Managerial Competence (MC) is about 40.0%. Again, the VIF is used to check whether the model is free from multicollinearity. From the result, it is obvious that the VIFs scores are below 3.0 indicating that the model is free from multicollinearity problem.

Decision: From the outcome of the regression results in Table 4.2 the computed F-statistic = 31.20 (P - value = 0.000) and Adjusted R – squared = 0.398; the study failed to accept the null hypothesis one (H_{01}): Based on the estimated parameters, at a level significance of 0.05, *FStatistic* is 31.20, while the *P-value of the F-Statistics is (*0.000), which is less than 0.05. The study rejected the null hypothesis and accepted the alternate, which implies that cost benefit analysis had a positive significant effect on quality and durable projects in Nigeria.

Discussion of Findings

In model 1, each of potential benefit analysis (PBA) exhibited positive significant effect on quality strategic decisions (QSD). These results are consistent with some previous studies of Risako and Chris (2014); Olateju et al., (2011); Seungman et al., 2018). Also, Florio et al., (2018) investigated the role of cost benefit analysis in the context of European Union cohesion policy and the study revealed that on average cost benefit analysis had a positive association on average with the difference across sectors in some European Union countries. On the contrary the results obtained were not consistent with the results obtained in the studies of Ye

et al., 2018 and Hockley (2014). Ye et al., (2018) examined the empirical analysis of firms' willingness to participate in infrastructure PPP projects and the study revealed that firms' willingness to project evaluation and private participating projects had a negative significant effective project completion.

Model 2, in this model, the study investigated the effect of cost benefit analysis on quality and durable projects. The result revealed that cost effective analysis and budget constraints and managerial competence exhibited positive significant effect on quality and durability of projects. These results were in tandem with the studies of Riaz and Noor (2014); Ghassan (2015); Culyer and Chalkido (2019). While Riaz and Noor (2014) studied the challenges and issues in the development of social sector mainly in education, health, energy, security and the and the environmental due to lack of policy framework, lack of government, lack of technological advancement, unstable strategies, lack of leadership, poor project management, lack of innovations and inefficient utilization of resources, the study revealed that cost benefit analysis had a positive significant effect on public health projects.

Conclusion and Recommendations

The study concluded that cost benefit analysis had a positive significant effect on public projects execution in Lagos State, Nigeria.

Following the results of the analyses, the following were recommended;

i. The government is advised to ensure strict compliance of project execution laid procedures, and those found to contravene any of these policies be made be prosecuted accordingly.

ii. The public officeholders in Nigeria should be patriotic and be ethically responsive in carrying out their assigned responsibilities. Based on one of the result, the budget constraints had a positive effect on quality and durable projects.

iii. The general public should learn to use public executed projects carefully to ensure long lasting and durability. The reckless and vandalizing public property should be

discouraged, this is because the property and its maintenance is from the merger taxpayers money, as money used in repairing vandalized and misused government property can be channeled into executing new projects for the common good of the citizens.

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