

Procurement planning and cost effectiveness of lower Benue River basin development authority Makurdi, Benue State, Nigeria

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Abstract. The paper examined the effect of procurement planning on cost effectiveness of Lower Benue River Basin Development Authority Makurdi, Benue State, Nigeria. Specifically, the study sought to: examine the effect of regulatory compliance on cost effectiveness of Lower Benue River Basin Development Authority, Nigeria and determine the effect of contract management on cost effectiveness of Lower Benue River Basin Development Authority, Nigeria. This study adopted survey research design, made use of (150) staff of Lower Benue River Basin Development Authority in Makurdi Benue state Nigeria with 109 sample size which shows that 109 employees represent 100% of the population. Data were collected using a self-mixed questionnaire with response rate of 109 percent. The analysis of data was done using simple frequency distribution and percentages. Multiple regression analysis *t*-test was used alongside with Ordinary Least Squares (OLS) technique in estimation. The Findings revealed that regulatory compliance and contract management has a significant effect on cost effectiveness in Lower Benue River Basin Development Authority Nigeria. The paper concludes that procurement planning has a significant effect on cost effectiveness in Lower Benue River Basin Development Authority Nigeria. The paper recommends among others that; management in Lower Benue River Basin Development Authority Nigeria should ensure regulatory compliance all through their procurement processes to ensure cost effectiveness in the organization.

Keywords. Procurement planning, regulatory compliance, contract management and cost-effectiveness.

1. Introduction

Procurement planning has played a vital part in the achievement of cost effectiveness in organizations around the world. The public sector procurement entails intricate decision-making processes that affect not only individual organizations but also the broader socio-economic landscape World Bank, [1]. Allocation of public funds requires careful consideration of factors like cost-effectiveness, transparency, fairness, and accountability, influencing the quality of services, taxpayers' money utilization, and overall trust in public institutions European Commission, [2]

Given its critical nature public sector procurement operates within various legal and regulatory frameworks designed to ensure fair competition, prevent corruption, and uphold ethical practices. Adherence to these regulations is vital for maintaining integrity and public trust PPA [3]. The relevance of procurement planning in achieving cost effectiveness in the Nigerian public sector is underscored Adeyemi and Ojo, [4]. Cost effectiveness is crucial for optimizing resource allocation, enhancing public services, ensuring fiscal responsibility, promoting fair competition, aligning with organizational objectives, mitigating risks, and complying with legal and ethical standards (National Bureau of Statistics, 2020).

The current state of procurement planning in Nigeria reveals a mixed landscape with strengths and challenges Transparency International, [5]. Challenges include issues with the implementation and enforcement of regulations, the balance between centralization and decentralization, capacity and skills gaps, transparency concerns, varying technology adoption, timeliness issues, alignment with organizational goals, stakeholder engagement, corruption risks, and barriers to Small and Medium Enterprises (SME) participation World Bank, [6].

The study emphasizes the multifaceted impact of procurement planning on organizational performance, influencing aspects like cost efficiency, resource allocation, risk management, quality standards, innovation, supplier relationships, compliance, timely project execution, strategic alignment, and financial management Olayinka and Adesuyi, [7].

The legal and regulatory framework in Nigeria, primarily governed by the Public Procurement Act of 2007, is crucial. It establishes regulatory bodies such as the Bureau of Public Procurement (BPP) and the National Council on Public Procurement (NCP), defines thresholds, promotes competitive bidding, mandates pre-qualification and registration, emphasizes procurement planning and approval, enforces ethics and integrity, and establishes mechanisms for dispute resolution. Understanding and adhering to this legal framework is essential for public sector entities in Nigeria to conduct procurement activities transparently, ethically, and in compliance with established standards.

In Germany for instance, the BMWI and EU, [8] has implemented procurement planning program to improve procurement practices. These initiatives aim to ensure transparency, fairness and competition, preventing corruption and favouritism. By procurement planning procurement officer are trained to compliance with EU the regulation and best practices, UK procurement directive provide a comprehensive framework that member state must emphasizing open competition and equal treatment of supplier. Similarly, in France, the National institute of public procurement offer a specialized procurement planning programs for public procurement official. This program focusses on sustainability and ethical consideration on ethical issues, ensuring that employee is well versed in the complexities of procurement planning where environmental and social factor are integrated into procurement decision. The UK for instance has implemented polices that required public procurement consider the carbon foot print of purchased good a service promoting green procurement practices NIPP, [9].

In Nigeria procurement planning system has undergone significant reform in recent years, particularly following the enactment of the public procurement Act (PPA) in 2007. The public procurement Act of 2007 is the cornerstone of Nigeria procurement Act system. The law establishes the Bureau of Public Procurement (BPP) which oversee all Federal Procurement process and align with national priorities. The BPP also provide guideline for procurement planning emphasizing the need for efficiency, Transparency and cost effectiveness.

The Nigeria Content Development and Monitoring Board NCDMB [10] ensure that Nigeria procurement planning increasingly emphasizing local content particularly in sector like oil and Gas. The Nigeria government established programmed by Technological adaption such as e- procurement in Nigeria has been gradual. The introduction of the Nigeria Government Integrated Financial Management Information System (NIGFMIS) and the e-Government procurement (e-GP) which ensure planning through integrating technology into procurement processes. It is against this background that the paper seeks to examine the effect of procurement planning on cost effectiveness of Lower Benue River Basin Development Authority Makurdi, Benue State, Nigeria.

1.1 Statement of the Problem

The idea of procurement planning is gaining prominence in many organizations globally. According to Jones and Brown, [11-13], maximizing cost effectiveness in public sector procurement entails efficiency, service delivery and cost reduction in the procurement process. In the public sector procurement planning plays a pivotal role in resource allocation and service delivery, aiming to achieve cost effectiveness. In Nigeria procurement planning system has undergone significant reform in recent years, particularly following the enactment of the public procurement Act (PPA) in 2007. The public procurement Act of 2007 is the cornerstone of Nigeria procurement Act system. The law establishes the Bureau of Public Procurement (BPP) which oversee all Federal Procurement process and align with national priorities. The BPP also provide guideline for procurement planning emphasizing the need for efficiency, Transparency and cost effectiveness.

Despite the significant policies the government have put in place including the procurement Act in 2007 to eliminate procurement corrupted practices and to enhance procurement processes, cost effectiveness remains an issue of concern in Nigeria. Procurement planning is also, still faced with lack of regulatory compliance, contract management, training and capacity building, electronic procurement among organizational stakeholders regarding effective procurement planning, lack of accountability and transparency in the procurement decision making process and the absence of comprehensive procurement plans often resulting in project delays and cost overrun. Several studies have been carried out such as the studies of Thai, Ambe and Badenhorst-Weiss, [14] and NCDMB [15], but none of the studies used the dimensions that the current study used in measuring procurement planning and cost effectiveness in Nigeria. This paper seeks to fill the gap by examining the current procurement planning and the ideal situation. However, the paper seeks to examine the effect of procurement planning on cost effectiveness of Lower Benue River Basin Development Authority Makurdi, Benue State, Nigeria.

1.2 Objectives to the Study

The main objective of the paper is to examine the effect of procurement planning on cost effectiveness of Lower Benue River Basin Development Authority Makurdi, Benue State, Nigeria. Specifically, the paper sought to:

1. Examine the effect of regulatory compliance on cost effectiveness of Lower Benue River Basin Development Authority, Nigeria.
2. Determine the effect of contract management on cost effectiveness of Lower Benue River Basin Development Authority, Nigeria.

2. Literature Reviewed

2.1 Conceptual Framework

This sub-section provides conceptualization of key concepts such as procurement planning and cost-effectiveness.

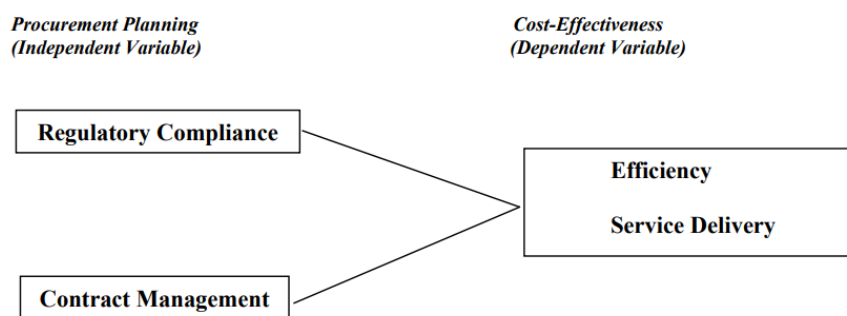


Figure 1. Conceptual framework on the relationship between Procurement Planning and Cost-Effectiveness. Source: Researcher's model [16].

2.1.1 Concept of Procurement Planning

Different researchers have given different definitions for procurement planning. According to Alexandra-Ioana [17] procurement plans are prepared as part of the annual budget preparation process as they are necessary to inform the cash flow preparation. The annual procurement planning is an integral part of the budget processes. Therefore, it is important to appropriately plan multiyear procurement and to integrate them into the medium-term budgetary frameworks.

Procurement basically implies the acquisition of products, administrations and works by an obtaining entity, while public procurement is the utilization of public assets by the public authority through its ministries, departments and agencies, for the benefit of its residents, for the procurement of merchandise, administrations and works with the best quality, and additionally right amount, at the most ideal cost, from the perfect spot or source, contractors, providers, and service providers, and for the right reason utilizing the right method(s) and in accordance with laid down rules and guidelines, following due process World Bank Public Procurement Reforms, [18].

Procurement planning is an activity that sets the entire process of the procurement function in motion for delivering services to the county governments. According to Basheka [19], planning is a process that takes place in phases and emphasizes how decisions made today affect current activities rather than future actions. Brown and Hyer [20] opined that these arrangements in procurement entail spelled out the purpose, definition of scope, and needs required by customers and pointing out the procurement activities, times, and schedules that are involved. However, Ogubala and Kiarie [21] opined that lack of required expertise for procurement staff, absence of top management support, and inadequate budget influence procurement planning, which in turn affects the performance and success of an organization.

According to Basheka [22], procurement planning is the primary function that sets the stage for subsequent procurement activities. A mistake in procurement planning has wide implications for the organization. While Ambe and Badenhorst-Weiss [23] opined that a good procurement plan will go one step further by describing the process one will go through to appoint those suppliers contractually. Whether you are embarking on a project procurement or organizational procurement planning exercise, the steps will be the same. Procurement is thus one part of the commissioning process. It refers to a specific method of purchasing services that involves tendering for a contract.

According to Smith and Johnson, [24], procurement planning will identify and define realistic product expectations, such as fulfilment time, cost, and quality of products. The contribution of procurement planning is perceived in terms of quality, timely delivery, cost and flexibility, which has an impact on the competitive capability of the firm to meet customer requirements. The preparation of a realistic procurement plan for an organizational operations and projects is critical for its successful monitoring and implementation. According to Lynch [25] procurement planning is the process of deciding what to buy, when and from what source. During the procurement planning process, the procurement method is assigned and the expectation for fulfilment of procurement requirement is determined. The study also specifies the process to be important as it allows partners in trade to determine if expectations are realistic, particularly the expectations of the requesting entities, which usually expect their requirements met on short notice and over a shorter period than the application of the corresponding procurement method allows. Therefore, this seminar paper adopts the definition given by Smith and Johnson [26], which stated that procurement planning will identify and define realistic product expectations, such as fulfilment time, cost, and quality of products by selecting vendors, contractors, establishing payment terms, strategic vetting, and the negotiation of contracts and actual purchasing of goods on time to avoid delay in supply.

2.1.2 Dimension of Procurement Planning

i. Regulatory Compliances

Regulatory compliances refer to the adherence of an organization to laws. Regulations. Guideline and specification relevant to it business processes violation of regulatory compliance often result in legal punishment including federal fines. Regulatory compliances refer to an organization adherence to laws, regulation guideline and specification relevant to it business processes. failure to comply can lead to legal penalties including fine and sanction. it covers various aspects such as financial regulation data protection health and safety and environmental regulation. Regulatory Compliance in procurement involved ensuring that all purchasing activities and process within an organization adhere to relevant regulation and ethical standard which encompasses a wide range of requirement such as anti-corruption and anti-bribery laws. Ensuring that procurement activities do not involve any form of bribery or corruption .in line with laws like the foreign corrupt practices Act (FCPA) in the UK Bribery Act Ama et al., [27].

Regulatory compliances in procurement refer to the system process that involved the adherence of all regulatory that is required to be followed by when carrying out purchasing processes in an organization such as regulation for goods, services and work must be compliance with the norms for the purchase or for the services of such process must be compliance with, if not a fine will be paid when the process is neglected and encompasses requirement such as contract law. Ensuring that all procurement contract is legally binding and comply with relevant legal standard (Aluonzi et al., [28]. Regulatory compliances in procurement often involved the implementation of robust policies and procedure, regular, audit, training for procurement staff and the use of compliance management system to track and to manage compliance related activities Aluonzi, [29].

The relevance's of regulatory compliances to procurement planning on cost effectiveness in lower Benue River Basin Development Authority is the transparency and accountability, in procurement process transparent processes can lead to more competitive bidding in Lower Benue River Basin Development Authority which can drive down cost and improve

the quality of goods and services procured. Regulatory Compliance with the Lower Benue River Basin Development Authority aid supplier vetting and selection compliances standard typically involve stringent criteria for supplier are engaged. This led to higher quality supplier fewer project delay and reduce cost association with poor performances or rework. Lower Benue River Basin Development Authority using regulatory compliances boost unsustainable procurement which often included the environmental and social criteria. Sustainable procurement practice can lead to long -term cost saving through energy efficiency reduce waste and improved, resources management aligning with broader sustainable development goal.

Lower Benue River Basin Development Authority using the regulatory compliance in effecting cost often requires through documentation and clear procedural guild line which may lead to more efficient resource allocation, reducing, wastage and ensuring that fund ae used effectively and efficiently via efficient resource allocation. Budget Management of Lower Benue River Basin Development Authority is by adherence to regulatory standard the LBRBDA can endure better budget management and financial planning, predicable procurement process enables more accurate budgeting and forecasting, leading to better cost control.

ii. Contract Management

According to Yegon and Mbeche [30] contract management is the process of managing contracts throughout the contract life cycle while ensuring customer satisfaction. It includes managing contract elements such as negotiations, changes, requirements interpretations, deliverables, contract terms and conditions, and risk management. Thus, contract management involves all the activities related to contract creation, execution, and performance analysis after the procurement agency selects one or more suppliers. Successful and efficient contract management practices are those that meet the needs of the company’s stakeholders, achieve optimum conditions and value regarding the allocation of scarce tax payers’ resources (cost effectiveness), ensure rational and efficient of funds available, stimulate valuable competition and manage the risk and potential liabilities to the buyer thus improving service delivery Yegon and Mbeche, [30].

Contract management is a critical component of procurement process of public bodies. Contract management enhances the procurement process in diverse ways including anticipating future needs of users, reacting to arising challenges, and achievement of product and services quality. Other aspects include lead times in service delivery, budget considerations in procurement aspects, optimization of the efficiency, effectiveness and economy of service in contractual relationship, balancing costs against risks and actively managing the relationship between procurement parties. However, the importance of contract management is often pushed aside by procurement agencies, and it is commonly associated with bureaucracy, disputes, litigation, and penalties related to failed contractual obligations. The combination of simplified perceptions, the limited availability of the procurement workforce, and the administrative complexities of contract management has created the perfect storm in many public organizations. For them, following public contracting policies and adopting best practices has not always been feasible. In practice, contract management does not always get the same attention and resources as other supply chain processes. This exposes organizations to risks that can cause undesired consequences from supply quality deterioration to supply interruption Ochola and Kitheka, [31].

2.1.3 Cost Effectiveness

Cost effectiveness in public procurement refers to the strategic approach of obtaining goods and services for public sector needs in a manner that ensures the cost effectiveness. This involves not only minimizing costs but also considering the quality, efficiency, and long-term benefits of procurement decisions. Public procurement must align with broader governmental objectives, including sustainability, transparency, and equitable access. Cost effectiveness: This principle goes beyond simply choosing the lowest bid. It encompasses the total cost of ownership, quality, and the ability to meet public service requirements effectively. Cost effectiveness ensures that public funds are used efficiently and for the maximum public benefit. Transparency and Accountability: Public procurement processes must be transparent to prevent corruption and ensure accountability. Transparent practices build public trust and ensure that procurement decisions are made based on merit and fairness.

Furthermore, cost effectiveness, according to Aimable et al [32], is also often described in terms of the ‘three Es’ economy, efficiency and effectiveness: this involves acquiring goods and services at the lowest possible cost without compromising quality. It focuses on cost-saving measures and efficient use of resources (doing things at a low price); efficiency performing is about optimizing processes to achieve the best outcomes with the least waste of time and resources. It ensures that procurement activities are streamlined and effective (doing things the right way); effectiveness means achieving the desired outcomes and objectives of the procurement process. It ensures that the procurement meets the organization’s needs and requirements (doing the right things) and equity ensures fairness and transparency in the procurement process. It involves providing equal opportunities to all suppliers and adhering to ethical standards and legal requirements.

2.1.3.1 Measures of Cost-Effectiveness

i. Efficiency

Efficiency refers to a stage where the business reaches the point for survival and seeks out for additional options to generate more profit Giacomo, [33]. Efficiency is the survival of a business procurement processes that aims at increasing

the enterprise scale of operations to generate more profit and other benefits for the venture. Different forms of efficiency include opening in another location, adding sales employees, increased marketing, and adding franchisees, forming an alliance by procuring entities, offering new products or services, entering new markets, merging with or acquiring another business, expanding globally and expanding through the internet Ahmad, [34].

ii Service Delivery

The rate of service delivered with the minimal errors that, enhance accuracy, efficiency and effectiveness. Quality of Service Delivery (QoS) refers to the measurement and management of how effectively services are provided to customers or end-users. It is a crucial aspect for businesses, particularly in service-oriented industries, as it directly impacts customer satisfaction, loyalty, and overall business performance. Understanding what customers expect from the service is fundamental. This involves identifying their needs, preferences, and expectations to tailor services accordingly Adoga, [35].

2.2 Theoretical Framework

2.2.1 The Resource-Based View (RBV)

The resource-based view (RBV) is a strategic management theory propounded by Jay Barney in the 1980s; that suggests that a firm's competitive advantage and performance are primarily determined by the unique resources and capabilities it possesses. When applied to procurement planning, the RBV emphasizes the importance of strategically managing the resources involved in the procurement process to enhance organizational performance. Procurement planning refers to the process of identifying, acquiring, and managing the resources needed for an organization's operations Daft, [36,37]. By adopting an RBV approach to procurement planning, the public sector can leverage their unique resources and capabilities to gain a competitive edge in the marketplace.

One key aspect of the RBV in procurement planning is the identification of valuable, rare, and difficult-to-imitate resources that can provide a sustainable competitive advantage. In the context of procurement, this may involve developing relationships with key suppliers who offer unique products or services, securing access to scarce resources, or investing in technology that enhances efficiency in the procurement process. By focusing on acquiring and developing these valuable resources, organizations can improve their procurement effectiveness and ultimately enhance their overall performance Teece, Pisano and Shuen, [38].

Furthermore, Barney [39] highlighted the importance of aligning procurement planning with public sector goals and objectives. By integrating procurement planning with overall cost effectiveness in the public sector can ensure that their procurement activities support broader public sector objectives such as cost reduction, quality improvement, or innovation. This alignment helps to maximize the impact of procurement on public sector performance by ensuring that resources are allocated efficiently and effectively.

2.3 Review of Related Empirical Studies

Nsiah-Asare and Prempeh [40] examined measures of ensuring cost effectiveness in public procurement, a case of selected polytechnics in Ghana. The aim of the study is to find out ways of ensuring cost effectiveness in public procurement. The objectives of the study among others include; identify the challenges in ensuring cost effectiveness and measures to ensure cost effectiveness in the procurement of goods and services. The main data collection instrument employed in this study is the structured questionnaire. The study employed the purposive and stratified sampling technique. The finding revealed that inadequate skilled personnel in the procurement sector and inadequate measures for monitoring and evaluation of the procurement policy to ensure cost effectiveness are major challenges in the public procurement. It was recommended that to ensure cost effectiveness, Management supports for cost effectiveness programme at all levels of administration should be encouraged and procurement regulatory authorities in collaboration with public entities (Polytechnics) must ensure compliance through rigorous monitoring and evaluation of the procurement policy to ensure cost effectiveness. The finding in this study is limited to Ghana and embarking on similar topic using data from Nigeria may produce a different result.

Ogubala and Kiarie [41], conducted a study on the factors that affect procurement planning in County Governments in Kenya a case study of Nairobi City County with an aim of making recommendations on proper procurement planning. A census was conducted where all the 103 staff in procurement department was issued with questionnaires. Data was collected using self-administered questionnaires to collect data. The data collected was analyzed using quantitative and qualitative techniques. The study found out that, inadequate competencies of procurement staff, lack of management support, ICT tools and budgeting procedures affect procurement planning. The methodology used for this study is inadequate and using a different methodology is advisable. Mchopa et al. [42] Conducted a study on contracts management and cost effectiveness in public procurement of works in Muccobs Company. The study was undertaken by using a case study design whereby purposive and random sampling techniques were used to pick a sample of 60 respondents while questionnaires, interviews and documentary review were used to collect data. The findings showed that contracts contained all the necessary required terms and conditions to guarantee cost effectiveness and it was established that contracts managed adequately when compared to the terms. Also, it was determined that management of time, quality and costs resulted into effective contract management which contributes highly to 32 the achievement of

cost effectiveness. This study is however limited to a few variables as proxies for procurement planning and including many variables may make the work more robust.

Reference Higirow [43] Studied the effect of procurement planning on performance of public institutions in Rwanda, a case of Kicukiro District. The study adopted explanatory research design while the study population constituted 258 employees. The findings indicated that the identification of needs is a key indicator in enhancing the performance of public institutions. As evidenced from the findings, the researcher concluded were effectively executed and that there is a strong positive relationship between the identification of needs and tendering methods on the performance of public institutions. The study recommends that tendering methods is not static and that preparation of tendering methods should be done by identifying needs, establishing tendering method, estimate the budget and participation of user department to improve Kicukiro District's performance.

3. Methodology

3.1 Population of the Study

The population of the study is made up of (150) staff of Lower Benue River Basin Development Authority in Makurdi Benue state Nigeria. These staff cut across several departments of the organization such as the Management team, procurement, Agricultural Service department planning and Design Department, Engineering department and Administrative Department, since organizational work done is carry out in various department. The element of the study will be staff of the organization.

3.2 Sample Sources and Sampling Technique

This study will make use of the following formula to determine actual sample size. The sample size for the research will be determined quantitatively using the 1969 Taro Yamane formula:

$$n = \frac{N}{1 + N(e^2)}$$

where N =population

n =sample size

e =error

Therefore: $N=150$, $e=5$

$$n = \frac{150}{1 + 150(0.05^2)}$$

$$n = \frac{150}{1 + 150(0.0025)}$$

$$n = \frac{150}{1 + 0.375}$$

$$n = \frac{150}{1.375}$$

$$n = 109$$

The study distribution shows that 109 employees represent 100% of the population. The study will make use of simple random sampling technique to select the element of the population. Simple random sampling is the basic sampling technique where we select a group of subjects (a sample) for study from larger groups (a population). Everyone is chosen entirely by chance and each member of the population has an equal chance of being included in the sample.

3.3 Model Specification

Guided by the nexus between the variables of the study, a functional relationship is established between them. As shown below, the implicit form of the model is shown as:

$$CE=f(PP) \tag{1}$$

CE=Cost Effectiveness

PP=Procurement Planning

F=functional relationship

$$CE=f(RC, CM) \quad (2)$$

RC=regulatory compliance

CM=contract management

The explicit form of the model is stated as shown below:

$$CE=b_0+b_1RC+b_2CM+U_t \quad (3)$$

b_0 =regression intercept

b_1 - b_2 =regression coefficients

U_t =error terms

A priori expectation $\beta_1 > 0$, $\beta_2 > 0$ a priori is expectation to be positive

4. Data Presentation and Analysis

This section of the paper deals with the presentation of the results obtained from the field. It is made up of four subsections namely; data presentation, regression analysis, test of hypotheses and discussion of findings.

The result in Table 1 above shows a positive relationship that existed between procurement planning and cost effectiveness in Lower Benue River Basin Development Authority Nigeria. 784 or 78.4%. Majority of the respondents strongly agreed that, regulatory compliance, contract management, training capacity and building and electronic procurement system as measures of procurement planning have positive effect on cost effectiveness. The result reveals a good degree of dependency of cost effectiveness on procurement planning. The coefficient of determination (r^2) shows the procurement planning scored of 96% in cost effectiveness from procurement planning dimensions effect. The adjusted r-square (r^2) which shows the actual variation in cost effectiveness attributable to the variations in procurement planning measures reveals the actual variation of 0.602 as against the 0.67 suggested by r^2 . The standard error of 9.3244 suggests that the independent variable (procurement planning) is significant in explaining the variation in dependent variable (cost effectiveness).

Table 1. Model Summary.

Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate
1	0.784	0.906	0.602	9.3244
a. Dependent Variable: CE				
b. Predictors: (Constant), RC, CM				
Source: Author's computation using SPSS version 24.0 (2024)				

The F value from Table 2 is 54.648 and is significant because the significance level=0.000 is less than 0.005 ($p > 0.05$). This implies that the regression model is statistically significant, valid and fit. The validity implies that all independent variable (proxies of procurement planning) can explain a positive and significant relationship with the dependent variable (cost effectiveness).

Table 2. Analysis of Variance (ANOVA).

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	33.935	4	8.484	54.648	.000b
Residual	1.144	33	.035		
Total	35.079	37			
a. Dependent Variable: CE					
b. Predictors: (Constant), RC, CM					
Source: Author's computation using SPSS version 24.0 (2024).					

Estimated equation

$$CE=\beta_0+\beta_1 0.984+\beta_2 0.900+U \quad (4)$$

The regression coefficient in Table 3 above for regulatory compliance is (b_1)=0.974 which means that, one percent increase in regulatory compliance will result in 97% increase in the level of cost effectiveness, if other variables are kept constant. The t-value of 7.113 is significant at 0.000 because the significance level is less than the p value, ($p < 0.05$). The regression coefficient for contract management is (b_2)=900 which means that one percent decrease in contract management will lead to 90% increase in the level of cost effectiveness, if other variables are kept constant. The t-value of 4.200 is significant at .000 because the significant level is less than the p value, ($p < 0.05$).

Table 3. Regression Results.

Variable	B	Std. Error	Beta	t-value	p-value
(Constant)	12.013	0.060	7.211	0.834	0.001
RC	0.745	0.077	0.974	7.113	0.000
CM	0.796	0.118	0.900	7.200	0.000

R=0.889
R²=0.806
Std. Error of the Est.=8.3244
Adjusted R²=0.602
F(3, 258)=54.648
P=0.000
Durbin-Watson=1.897

a. Dependent Variable: CE
b. Predictors: (Constant), RC, CM
Source: Author's computation using SPSS version 24.0 (2024)

4.1 Test of Hypotheses

Hypothesis 1: Regulatory compliance has no significant effect on cost effectiveness in Lower Benue River Basin Development Authority Nigeria

To test the effect of regulatory compliance on cost effectiveness in Lower Benue River Basin Development Authority Nigeria, it was measured by the calculated p -value=0.000 at a significant level (α) 0.05. Since the computed p -value is less than the significance level (α) of 0.05 (p -value 0.000 < α 0.05), the null hypothesis was rejected and the alternative hypotheses accepted. Therefore, we conclude that, regulatory compliance has significant effects on cost effectiveness in Lower Benue River Basin Development Authority Nigeria.

Hypothesis 2: Contract management has no significant effect on cost effectiveness in Lower Benue River Basin Development Authority Nigeria

To test the effect of Contract management on cost effectiveness in Lower Benue River Basin Development Authority Nigeria, it was measured by the calculated p -value=0.000 at a significant level (α) 0.05. Since the computed p -value is less than the significance level (α) of 0.05 (p -value 0.000 < α 0.05), the null hypothesis was rejected and the alternative hypothesis accepted. Therefore, we conclude that, contract management have significant effect cost effectiveness in Lower Benue River Basin Development Authority Nigeria.

4.2 Discussion of Findings

Findings of the study were discussed based on the objectives of the study and hypotheses as follows:

4.2.1 Effect of Regulatory Compliance on Cost Effectiveness in Lower Benue River Basin Development Authority Nigeria

The study was able to establish the effect of regulatory compliance on cost effectiveness in Lower Benue River Basin Development Authority Nigeria. Regression was used to test the hypothesis at 5% level of significance and the p -value (0.000) was lower than the significance level. This can be statistically given as p -value 0.000 < α = 0.05. Implying that regulatory compliance significantly affected cost effectiveness in Lower Benue River Basin Development Authority Nigeria.

4.2.2 Effect of Contract Management on Cost Effectiveness in Lower Benue River Basin Development Authority Nigeria

Regression was used to test the hypothesis at 5% level of significance and the p -value (0.000) was lower than the significance level. This can be statistically given as p -value 0.000 < α = 0.05. Implying that contract management significantly affected cost effectiveness in Lower Benue River Basin Development Authority Nigeria.

5. Conclusion

The study focused on the effect of procurement planning on cost effectiveness in Lower Benue River Basin Development Authority Nigeria. The study was able to establish that regulatory compliance, contract management, training capacity building and electronic procurement system of procurement planning have significant effect cost effectiveness in Lower Benue River Basin Development Authority Nigeria. Thus, the study concludes that procurement planning has a significant effect on cost effectiveness in Lower Benue River Basin Development Authority Nigeria.

6. Recommendations

Based on the finding, the study hereby makes the following recommendations:

- i. Management in Lower Benue River Basin Development Authority Nigeria should ensure regulatory compliance all through their procurement processes to benefit cost effectiveness in the organization.
- ii. Management in Lower Benue River Basin Development Authority Nigeria should continue to ensure that procurement principles are effectively followed to monitor and managed contract to ensure cost effectiveness in the organization.

References

- [1] T.A Abioro, Public procurement corruption and service delivery in Nigeria and South Africa in Dorasamy, N. and Fagbadebo, O. (Eds), *Public Procurement, Corruption and the Crisis of Governance in Africa*, 1st edition. Cham: Palgrave Macmillan, 249-267. 2024
- [2] J. A, Adesina, T.C. Ogwueleka, and A.O. Adewuyi, Public procurement and good governance in Nigeria: Challenges and prospects. *Journal of Public Procurement*, 19(4), 473-496. 2019.
- [3] A.A. Adeyemi, & O.O. Ojo, Public procurement and sustainable development in Nigeria: Issues and prospects. *Journal of Public Procurement*, 18(4), 425-447.
- [4] E.R Aiyede, Corruption and public procurement in Nigeria: Understanding the paradox. *Nigerian Journal of Economic History*, 22(1), 79-98. 2019.
- [5] Alchian and Demsetz (1972) An exploration of public sector supply chains with specific reference to the South African situation. *Journal of Public Administration*, 46 (3), 10-25
- [6] I. M. Alexander-Ioana, Towards efficient public procurement in Romania: A practical risk management approach. *International Journal for Research in Applied Science and Engineering Technology (IJRASET)*, 8(7), 773-782. 2020.
- [7] I.M. Ambe, and J. A. Badenhorst-Weiss, An exploration of public sector supply chains with specific reference to the South African situation. *Journal of Public Administration*, 46 (3), 10-25. 2014.
- [8] Anane, V. Adoma, and G. Awuah, The effect of procurement practices on service delivery: A case study of VRA, Ghana. *Asian Journal of Economics, Business and Accounting*, 13(1), 1-23. 2019.
- [9] R.O. Apiyo, and D.K. Mburu, Factors affecting procurement planning in county governments in Kenya, case study of Nairobi City County. *International Journal of Economics, Commerce and Management*, 2(11), 1-34. 2014.
- [10] D, Arjaan, and M. Van, Challenges Enhancing Value for Money Procurement and Supply in Tanzania. A Presentation at the Procurement and Supplies Professionals' Annual Conference (pp. 1-32). Arusha: PSPTB. 2010
- [11] J. O Asande, E.S Kwendo, and F.N. Kiongera, Effect of procurement planning on procurement function performance in kakamega county government. *African Journal of Empirical Research*, 4(2), 772-777. 2023.
- [12] Atkin, B., and Brooks, A. (2009). *Total Facilities Management* (3rd ed.). Chichester: Wiley Blackwell.
- [13] J. Barnett, H. Walker, and S. Brammer, Sustainable procurement in the United Kingdom public sector. *Supply Chain Management: An International Journal*, 14(2), 128-137. 2019.
- [14] J. Barney, Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120. 1991
- [15] B. C. Basheka, Procurement planning and local governance in Uganda: A factor analysis approach. *International journal of procurement management*, 2(2), 191-209. 2009.
- [16] B.C. Basheka, (2024). Public procurement governance: toward an anti-corruption framework for public procurement in Uganda, in Dorasamy, N. and Fagbadebo, O. (Eds), *Public Procurement, Corruption and the Crisis of Governance in Africa*, 1st ed., Cham: Palgrave Macmillan, 113-141. 2019.
- [17] S. Benslimane, and G. Plainest. How does buyer-seller information share affect procurement quality performance? Insight from SMEs in a developing African economy. *International Journal of Quality and Service Sciences*, 13(1), 23-37. 2005.
- [18] Bhimani, Public procurement in the health services: Application, compliance and challenges. *Humanities and Social Sciences Letters*, 6(2), 41-50. 2018.
- [19] K. Blomqvist, K. Kyläheiko, K., & V.M. Virolainen, Filling a gap in traditional transaction cost economics: Towards transaction benefits-based analysis. *International Journal of Production Economics*, 79 (1): 1-14 2002.
- [20] R. Brealey, S. Myers, and F. Allen, *Principles of Corporate Finance* (Ed.). New York, McGraw-Hill Irwin. 2011.
- [21] B. Brown, and N. Hyer, *Managing Projects: A Team-Based Approach*, International Edition, Singapore, McGraw-Hill. 2010.
- [22] Bureau of Public Procurement (BPP). (n.d.). About BPP. Retrieved from <https://www.bpp.gov.ng/about-bpp/>
- [23] R.Carter, and G.M Hodgson, G. M. (2006). The impact of empirical tests of transaction cost economics on the debate on the nature of the firm. *Strategic Management Journal*, 27(5), 461-476
- [24] D. Mensah, & S. Antwi, Innovations in public procurement: Evidence from Ghanaian public utilities. *Journal of Public Sector Innovation*, 7(3), 12-25. 2020.
- [25] H. Mintzberg, *Strategy Safari: A Guided Tour Through the Wilds of Strategic Management* (3rd ed.). Free Press. 2020
- [26] Nair, J. Jayaram, A. Das, Strategic purchasing participation, supplier selection, supplier evaluation and purchasing performance. *International journal of production research*, 53(20), 6263-6278. 2015.

- [27] K. Sanneh, Strategic frameworks for improving public utility performance in The Gambia. *African Journal of Management*, 5(3), 30-40. 2018.
- [28] H. Schiele, Supplier development and innovation: The roots of innovation and future research directions. *Journal of Purchasing and Supply Management*, 26(1), 100618.
- [29] S. Sowe, B. Kinteh, & A. Ceesay, Adopting strategic models for improved utility services in The Gambia. *International Journal of Public Administration in Africa*, 11(2), 15-29. 2021.
- [30] State Owned Enterprise Operational & Financial Report, Fiscal Year, Final Report. 2022.
- [31] S. Tang, Robust strategies for mitigating supply chain disruptions. *International Journal of Logistics Research and Applications*, 9(1), 33-45. 2018.
- [32] D.J. Teece, Dynamic capabilities as (workable) management systems theory. *Journal of Management & Organization*, 24(3), 359-368. 2018.
- [33] D.J. Teece, Dynamic capabilities as (workable) management systems theory. *Journal of Management & Organization*, 24(3), 359-368. 2018.
- [34] K. Touray, Modernizing operational practices in Gambian public utilities. *Journal of African Infrastructure Studies*, 10(3), 45-59. 2021.
- [35] R.J. Trent, & R.M. Monczka, *Purchasing and Supply Chain Management* (7th ed.). Cengage Learning. 2021.
- [36] R. Duffy, An interview with Patricia Hanson: one on one. *Journal of Supply Chain Management*, 38(1): 2-3. 2002.
- [37] E.A. Drost, Validity and Reliability in Social Science Research. *Education Research and Perspectives*, 38, 105- 123. 2011.
- [38] K. Eisenhardt, (1989). Making fast strategic decisions in high-velocity environments. *Academy of Management Journal*, 32(3): 543-576. 2011.
- [39] R. M. Garfamy, A data envelopment analysis approach based on total cost of ownership for supplier selection. *Journal of Enterprise Information Management*, 19(6), 662678. 2006
- [40] Fagbemi, B. Afolabi, & O. Oyeleke, Factors influencing organizational effectiveness in Nigeria. *Journal of Management Research in Africa*, 6(1), 45-59. 2018.
- [41] A.S. Gutterman., Organizational performance and effectiveness. Available at SSRN 4532570. 2023.
- [42] R.M Grant, *Contemporary Strategy Analysis: Text and Cases Edition* (11th ed.). Wiley. 2021.
- [43] L. Jallow, & A. Njie, A. Analyzing the challenges facing NAWEC in providing reliable services. *Journal of Gambian Economic Studies*, 7(1), 11-19. 2019.