IMPACT OF THE PUBLIC PROCUREMENT REFORM ON PUBLIC BUILDING PROJECTS DELIVERY IN NIGERIA

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Reducing the cost of public projects' delivery is a major challenge of Governments worldwide and increasingly procurement reforms are considered as unique means of achieving lower costs for infrastructure delivery and value for money. Thus the Nigerian Public Procurement Reform is expected to result in significant improvement in public projects' performance which should impact the country's overall economic situation and foster the realisation of the Government developmental target of being among the top twenty economies of the world by the year 2020. This paper analyses the impact of the Public Procurement Reform on public building projects' delivery in Nigeria. The impact of the Public Procurement Reform is hypothesized to depend on crucial factors such as planning practices for public building projects, adoption of appropriate procurement options, contractor selection practices and the enthroning of best ethical standards by public building practitioners. Actual project performance data were compared on public building projects delivered prior and after the commencement the procurement reform. In addition, a sample survey comparing opinions of key practitioners on the impact of the reform on public building projects' delivery was carried out, and the result of the pilot study shows there is no significant difference between the mean response of contractors, consultants and construction professionals in Ministries, Departments and Agencies with regard to the reform's impact on irregularities associated with public building projects delivery in Nigeria. Inadequate project/budgeting plans by the client and the project team identified as the most constraining factors in the attainment of desired impact on public building projects delivery. The outcome of this study would provide empirical ground that assists in decisions on the sustainability of the procurement reform in Nigeria, whose experience might be applicable the rest of the developing world and may provide relevant clues to assist other countries.

Keywords: impact, building performance, procurement reform.

INTRODUCTION

All over the world, public procurement is being subjected to reforming, restructuring or to new rules and regulations in the bid to bring about substantial improvement in governance. According to Hunja (2001), effective and efficient procurement policies are important in assessing the performance of governments. However, Hunja (2001) pointed out that there is no sufficient evidence by which successful procurement reforms can be measured due to lack of analysis and available information on return on investment on procurement reforms which has made the formulation of proposals

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for new multilateral laws in procurement difficult. There is therefore need for research to shed light on the success or otherwise of public procurement reforms in a range of developing countries and to provide case evidence and national experience that will inform reform strategies and international rule making. In the same vein, Evennet and Hoekman (2005) observed that work on the performance of national public procurement systems have not been well documented, in the sense that focus tends to be primarily on legal compliance with required laws and implementation procedures, with little focus on quantifying performance on having applied the processes aimed at enhancing competition, transparency, and combating corruption (Evennet and Hoekman 2005). Evennet and Hoekman (2005) added that much tends to be claimed for the benefits of the procurement reforms, but there is little analysis whether these benefits were actually realized after the reform initiatives occurred.

Few Studies have been made on the Nigerian Public Procurement Reform. While Olatunji (2008) examined the Due Process Policy Model, Ayangede, Wahab and Alake (2009) investigated the Due Process as a procurement method and its legal and institutional framework. Aduda (2007) evaluated the levels of compliance with some of the provisions of the Budget Monitoring and Price Intelligence Unit. This study relates with aforementioned studies because the Due Process Policy and the Budget Monitoring and Price Intelligence Unit were the initial institutional arrangements of the Public Procurement Reform in Nigeria and were based on fundamental principles of the Public Procurement Act, 2007 even before the enactment of the Act. However, this study goes further as a pioneering study to evaluate actual impact of the Public Procurement Reform from the perspective of public building projects delivery.

The set objectives of Nigerian Public Procurement Reform and its provisions/procedures are considered to be sound and capable of achieving desired impact if well implemented (Transparency International 2008). These provisions have been implemented in Federal Ministries, Departments and Agencies procuring building projects in Nigeria for nearly a decade now. This duration is considered long enough for the impact of the reform to appear, and this is considered vital for either justifying or impugning the benefits of the Public Procurement Reform on public building projects delivery. This study therefore is an empirical analysis of real data of a representative sample, of projects performance statistics before and after the introduction of the Public Procurement Reform with the aim of identifying the difference the procurement reform has made.

Condition of Public Building Projects' Delivery in Nigeria Prior to the Procurement Reform

The challenges of the construction industry in Nigeria have not been different from that of many other developing nations. Most of these difficulties relate to lack of fiscal transparency and public accountability, in addition to the inadequacy of resources for providing public infrastructures. For example, in Nigeria, prior to the re-emergence of the democratic governance in 1999, public building projects delivery has been subject to several irregularities which resulted in frequent projects failure. These included poor project planning, insufficient budgeting plans, unnecessary project fragmentation, initial bids inflation and over invoicing, gross change orders during project execution, adoption of inappropriate procurement methods, contract allocation as opposed to competitive tendering, proliferation of incompetent contractors in projects' delivery, poor project documentation and a general lack of transparency in the tendering process and deteriorating ethical standards of public construction

practitioners. According to Ayangade, Wahab and Alake (2009), these anomalies resulted in high project time and cost overruns, job abandonment, improper contract determination, conflicts and litigations, defective job performances and building collapses. Olatunji (2008) stated that contractor selection was not based on value and merits of bid but on tender price and initial lowest bid. The consequence was that Nigeria ranked highest worldwide in the cost of public projects execution (Budget Monitoring and Price Intelligence Unit, 2005). This made the need for the procurement reform in Nigeria to become pertinent.

The continual inadequacy of infrastructural facilities to meet the needs of the Nigerian economy coupled with the poor fiscal realities necessitated the dire need for optimal utilization of scarce resources appropriated for the public building projects delivery. Furthermore, with globalization and advances in information technology, citizens began to demand for greater accountability and efficiency from government and the demands and expectations of the global economy on improving transparency and competition in government procurement added the need to align and harmonize Nigeria's procurement practices with that of the United Nations Commission for International Trade Law (UNCITRAL) model and the World Bank guidelines.

Thus the Public Procurement Reform was introduced to improve service delivery generally in the public sector through focussing on principles and procedures in procurement that would place the country firmly on the path of economic growth. In the public building sector, the reform is expected to promote a sustainable built environment through the application of competition in tendering, effective planning and budgeting for projects and the promotion of global best practices and ethical standards in order to achieve value for money on public building projects.

RESEARCH QUESTIONS

1. How has the Public Procurement reform impacted the factors that were responsible for frequent public building projects failure in Nigeria?
2. How has Public Procurement Reform impacted public building projects performance with regards to projects' completion within specified time and budget?
3. What are the constraints in the attainment of desired impact of the Public Procurement Reform on public building projects delivery?

METHODOLOGY

A sample survey research design that involves the comparison of available data on completed public building projects before and after the introduction of the Public Procurement Reform because the study seeks to establish the counterfactual. This method has been adopted by impact evaluation experts such as Baker (2000) and White (2009) to establish how indicators behave with a program compared with how they would have been without the intervention. The period 1995 to 2002 is used as the pre reform era, while the period 2003 to 2010 is used as the reform era. A total of forty public building projects in the Federal Capital Territory were used in the study. Twenty projects completed before the introduction of the public procurement reform and twenty similar projects completed after the inception of the reform. The purposive sampling method was adopted due to the difficulty in obtaining data on completed projects. Time, cost, and quality are considered crucial parameters to projects' value and as such variables on projects performance. Projects duration and cost performance were used to study the impact of procurement reform. In addition to comparisons of

actual project performance statistics, the study also compares opinions on the impact of the reform on public building projects delivery of key public building practitioners, namely contractors, consultants and construction professionals engaged with fifteen Ministries, Departments and Agencies selected through a simple random sampling in the FCT. The Likert type scale was employed in evaluating responses.

DISCUSSION OF RESULTS

Table1: Performance Data of Public Building Projects Pre Reform Era (1995-2002).

Projects	I.D. in weeks	F.D in weeks	I. Sum in billions Naira	F. Sum in billions Naira	Cost over-run Naira	Delay in weeks	% cost over-run	% time over-run
PFMB 04 Ph.1 Fed.Sec.	130	517	0.84	4.06	3.22	387	298	383
NTA, Area 11, Garki	130	783	0.63	2.99	2.36	653	375	502
Foreign Affairs HQTRS.	130	592	13.18	15.14	1.96	462	14.8	355
Karshi General Hospital	24	36	2.9^{-2}	3.1^{-2}	1.0^{-3}	12	3.62	50
Sch/orphanage, Karu	24	25	1.7^{-2}	1.7^{-2}	0	1	0	4
P.Fencing, Gwagwalada	12	76	1.97^{-3}	2.38^{-3}	4.08^{-4}	64	20.7	53
2No.1BR 3No. 2BR, Kubwa Ph. 1	12	44	3.04^{-3}	3.04^{-3}	0	32	0	267
1 No.1BR, 1No 2BR Life camp	12	51	3.19^{-3}	3.19^{-3}	0	49	0	408
1No 2BR S/D& 1No.3BR Gwagwalada	12	19	4.14^{-3}	4.14^{-3}	0	7	0	58.33
2BR Karshi Hospital	12	15	2.58^{-3}	2.58^{-3}	0	3	0	25
3BR Karshi	12	16	$4.\ 28^{-3}$	$4.\ 28^{-3}$	0	4	0	33.33
1No. 4BR S/D Duplex, Area 11, Garki.	24	111	7.84^{-3}	7.84^{-3}	0	99	0	825
1No 3BR.S/D Apo.	12	72	5.37^{-3}	5.37^{-3}	0	60	0	500
4BRS/D Duplex Gwarinpa Badagry	24	208	$1.5\ 3^{-2}$	2.15^{-2}	6.2^{-3}	184	40.6	1533
3BRS/D Duplex at Gwarimpa Master	24	206	1.22^{-2}	1.71^{-2}	4.91^{-3}	184	40.2	1533
1 Blk of 4units of 3BR duplex, Wuse II (OAU)	12	35	2.96^{-2}	2.96^{-2}	0	23	0	192
Chief's Palace, Abaji	12	77	4.6^{-3}	6.2^{-3}	1.6	65	34.8	542
4No. 2 BR terrace flats at Karu	4	15	3.5^{-4}	3.5^{-4}	0	11	0	275
2BR S/D Kado	18	29	4.85^{-3}	5.11^{-3}	2.6^{-4}	11	5.4	6.11
4No 1BR Security Qtrs. Asokoro	12	104	2.12^{-2}	2.12^{-2}	0	92	0	767

Table 2: Performance Data of Public Building Projects Post Reform Era (2003-2010).

Projects	I.D. in weeks	F.D in weeks	I. Sum in billions Naira	F. Sum in billions Naira	Cost over-run Naira	Delay in weeks	% cost over-run	% time over-run
Completion of Shagari Complex Asokoro								
NASS, Ph.III, Part II	130	520	20.0	22.98	2.98	390	14.9	300
PFMB Plot 4 Phase II at Federal Secretariat	130	425	4.06	6.34	2.28	295	56.20	227
225 bed G. Hospital karu	84	260	1.41	1.95	0.534	166	38	198
6blks of classrooms, JSS Wuse, zone 6	24	78	5.9^{-2}	6.4^{-2}	5.02^{-3}	54	8.52	225
Fencing Orphanage Homes Gwagwalada	12	124	4.11^{-2}	4.11^{-2}	0	112	0	933
13 No. 2BR Shere-Galuyi	12	179	4.30^{-2}	4.30^{-2}	0	169	0	1408
10 No. 2BR Shere Galuyi	12	119	3.25^{-2}	3.25^{-2}	0	107	0	892
9 No. 2BR at Shere Galuyi	12	130	2.89^{-2}	2.89^{-2}	0	118	0	983
8No. 1BR,1 No.3BR Apo	12	121	2.50^{-2}	2.50^{-2}	0	109	0	908
6No.2BR Apo	12	130	2.26^{-2}	2.55^{-2}	2.82^{-3}	118	13	983
4No.1BR, 5No. 2BR and 1No. 3BR, Apo.	12	117	4.13^{-2}	4.14^{-2}	4.44^{-5}	105	0.11	875
1No. 4BR, 2No.3BR, 4No. 2BR 3No.1BR Wasa	12	116	3.36^{-2}	3.36^{-2}	0	104	0	866.67
4No. 1BR, 3No. 3BR 3 No. 3BR Wasa	12	120	3.30^{-2}	3.30^{-2}	0	108	0	900
4 BR duplex Gwarimpa II	24	82	2.39^{-2}	2.39^{-2}	0	58	0	242
4No. 2 BR terrace flats Karu	4	6	3.02^{-3}	3.02^{-3}	0	2	0	50
6No 3BR flats of 2 storey at Wuse Zone 5	24	97	4.27^{-2}	4.49^{-2}	2.25^{-3}	73	5.3	304
Installation of 490 meters Kado Estate	4	16	2.55^{-2}	2.81^{-2}	2.59^{-3}	12	10.2	300
2 No.Rms, old parade ground Area 10 Garki	4	32	2.78^{-3}	2.78^{-3}	0	28	0	700
Police Stn. Kubwa	12	36	1.1^{-2}	1.1^{-2}	0	24	0	50

Table 3 presents the means of data collected on both cost overruns in billions of naira and time overruns in weeks.

Table 3: Group Statistics

	Projects' Performance	N	Mean	Std. Deviation	Std. Error Mean
Cost Overruns	Pre reform	20	4.281	1.0554	2.3600
	Post reform	20	1.480	5.1396	1.1492
Time Overruns	Pre reform	20	89.50	156.755	35.052
	Post reform	20	114.75	86.448	19.330

To establish if the difference in these means are statistically significant at $\alpha = 0.05$; the Levene's test presented in table 4 is employed. In table 4, the column F shows the value calculated by the ratio of two sample variances, the column Sig. shows the calculated significance or probability P-value used in interpreting the results. Where Sig. value is less than or equal to 0.05, it means that there is no more than a 5%, probability the observations were solely due to chance and the association between the two study durations is considered statistically significant. The column T refers to the t-statistic values and the column Df shows the degrees of freedom.

Table 4: Independent Samples Test

		Lavene's test		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Cost Over run	Equal variances assumed	.582	.021	-1.07	38	.29	-2.80	2.63	-8.12	2.51
	Equal variances not assumed			-1.07	27.5	.295	-2.80	2.63	-8.18	2.58
Time Over run	Equal variances assumed	.486	.490	.631	38	.532	25.25	40.03	-55.78	106.28
	Equal variances not assumed			.631	29.6	,533	25.25	40.03	-56.6	107.05

Analysing the cost overruns, from the column sig. in the Levene's test (.021), the probability value is statistically significant ($0.021 < 0.05$) thus the variances are unequal and the row of data equal variances not assumed is used. The second row of column labelled sig. (2tailed) shows there is no statistically significant difference between the two eras because the significance level is 0.295, ($p > 0.05$), hence there is no statistically significant difference between the means of data on cost overruns in the two eras.

Similarly, to test if there is significant difference in the means of data collected on time overruns at $\alpha = 0.05$; the column sig. in the Lavene's test in table 4 is 0.490. The probability value is not statistically significant ($p > 0.05$), thus equal variances are

assumed. The column labelled sig. (2 tailed) shows the null hypothesis is also supported, p = *0.532* >0.05). Thus the mean scores on data on time overruns on public building projects in both the pre and post reform era are not statistically significantly different. This finding is not surprising as it is supported by a comparison of opinions of key public building practitioners on the impact of the procurement reform on curbing irregularities in public building projects' delivery. Table 5 presents the mean responses on the reform impact on projects' irregularities. From table 5, it can be seen that there is disagreement that the public procurement reform has had an impact on delayed payments for executed works, frequent fragmentation/phasing of projects, over invoicing/initial bids inflation, gross contract variations/cost overruns and project delays/time overruns. However, it has had an impact on use of incompetent contractors and unprofessional personnel in projects' execution, poor project documentation, and poor works quality performances and the rash/improper abandonments and determination of contracts.

Table 5: Reform's Impact on curbing Irregularities on Public Building Projects Delivery

S/N	Item	$\bar{x}$	Remark
1	Impact on delayed payments for executed works	3.0	Disagree
2	Impact on frequent fragmentation/phasing of projects	3.2	Disagree
3	Impact on use of incompetent contractors and unprofessional personnel in projects' execution	4.0	Agree
4	Impact on poor project documentation	3.5	Agree
5	Impact on over invoicing/initial bids inflation	3.4	Disagree
6	Impact on poor works quality performances	3.8	Agree
7	Impact on gross contract variations/cost overruns	3.2	Disagree
8	Impact on project delays/time overruns	2.7	Disagree
9	Impact on rash/improper abandonments and determination of contracts	3.7	Agree
10	Impact on incessant collapse of public buildings	3.5	Disagree
	Grand Mean	3.4	

Table 6: Analysis of Variance on Irregularities associated with Public Building Projects' Delivery

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.76	2	.882	.807	.447
Within Groups	488.51	447	1.09		
Total	490.28	449			

From table 6, the Pvalue is 0.447 which is greater than the significance level α 0.05and the calculated F ratio 0.807 is less than the Critical value 3, therefore we accept the Null hypothesis that there is no statistically significant difference in the means of Contractors, Consultants and MDAs in response to the impact of the reform on irregularities in projects' delivery. To further confirm that there is no difference in the means, the Scheffe post hoc test was employed and the analysis is presented in table 7.

Table 7: Scheffe Post Hoc Test of Multiple Comparisons on Irregularities

(I) Target Groups	(J) TargetGroups	Mean Difference	Std, Error	Sig.	Lower Bound	Upper Bound
Contractors	Consultants	.153	.121	.447	-.14	.45
	MDAs'	.080	.121	.803	-.22	.38
Consultants	Contractors	-.153	.121	.447	-.45	.14
	MDAs	-.073	.121	.832	-.37	.22
MDAs'	Contractors	-.080	.121	.803	-.38	.22
	Consultants	.073	.121	.832	-.22	.37

The Scheffe post hoc test of multiple comparisons also showed that there is no significant mean difference at the 0.05 level.

The Study also evaluated why the impact of the public procurement reform has been undermined on public building projects delivery in Nigeria with the aim of suggesting how constraints can be reduced. Table 8 presents the mean opinion on the analysis of responses on constraints in the attainment of desired impact of the public procurement reform.

Table 8 Constraints to PPR's impact

S/N	Items	$\bar{x}$	Remark
1	Weak monitoring/enforcement to ensure compliance by ministries, departments and agencies.	3.6	Agree
2	Inadequate project planning by the project team/insufficient budgeting plans by the Client	4.3	Agree
3	Lack of committed leadership within the procuring entities with political will to support the Reform.	3.9	Agree
4	Resistance to change faulty contractor selection criteria	3.6	Agree
5	General lack of Project Management competencies and a lack of multidisciplinary teams by public building contractors	3.5	Agree
6	Poor ethical practices of public building practitioners	3.8	Agree
7	Lack of prosecution of defaulters that contravene the provisions of the Public Procurement Act.	4.2	Agree
8	Adoption of inappropriate procurement methods	3.1	Disagree
9	Selection of lowest tender	2.9	Disagree
10	Inadequate usages of ICT for project communication, documentation and monitoring, including e-tendering and e-payment payment	3.3	Disagree
	Grand Mean	3.5	

CONCLUSION/RECOMMENDATION

Public Procurement Reforms as pointed earlier are introduced to provide a strong base to improve service delivery and foster economic growth. However, the findings of this Study revealed that the procurement reform has not been efficacious in redressing cost and durations overruns and other irregularities public building projects in Nigeria as there is no statistically significant difference from the situation that existed before the

procurement reform. The implication of this finding is that if focus is not placed on improving procedures that improve performance outcome, the reform would end like other past government policies with limited success. The Study also shows a greater consensus agreement that inadequate project/budgeting plans by the client and the project team is the most constraining factors in the attainment of desired impact on public building projects delivery. This implies that the Ministries Departments and Agencies circumvent provisions of the Procurement Act which relate to proper project planning. Public building procuring entities must improve in identifying procurement needs by competent staff that is capable of making realistic estimates. Contributory factors are the slow decision making process by the client and fiscal constraints attributed to lack of full implementation of the capital component of the budget in the past years. The use of open competitive methods of tendering must be complimented with incentive/disincentive forms of contracts to solve the problem of delays in projects execution. To ensure the sustainability of public procurement reforms, there must be full implementation of provisions of the Public Procurement Act to institute prudence at all levels of government and establishment of a more effective institutional framework for fighting and sanctioning corrupt practices

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