

## **Influence of Project Governance on Project Performance: Evidence from Nigerian Case Studies**

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### **ABSTRACT**

This study evaluated project governance in two mega projects and determined the influence of the related practices on performance. Data were collected using structured questionnaire and examination of project archives. The study data were analysed to determine the level of adherence to project governance essentials and the protracted implications on project performance. Respondents' assessment of the projects' performance using Kerzner's criteria, cost and time overrun were analysed using the mean score and the test of hypothesis involved Spearman Correlation test. The result indicated that project governance structure must be improved and such improvement will increase the performance of mega projects. To improve project governance in mega projects therefore, the study suggests the need for stakeholders to ensure effective implementation and selection of project governance structure using industry's established principles and based on prioritised needs. The study provides useful insight into the problem inhibiting mega project performance and efficient use of project governance in the public sector in developing countries.

### **KEYWORDS**

*Influence, Mega Projects, Project Governance, Project Management and Nigeria.*

### **1. INTRODUCTION**

Mega projects are both complex and risky in quantitative and qualitative terms (Garland, 2009). This understanding suggests that non-conventional governance systems are required for their implementation. Mega infrastructure projects have high degree of uncertainty, long duration and large number of stakeholders (Miller & Hobb, 2005). These project are also linked with significant impacts on the communities, the economy, technological development and the environment (Zhai, 2009). Project governance characteristically provides the best indication of who is involve in the project; and who in the project organisation is responsible for any course of action through its life cycle. The term project governance has attracted research attention considerably in the construction industry notably in the last decade. It is therefore immersed in definition uncertainty. Many institutions and industries have also applied the term to suit their application (Bekker & Steyn, 2008). However, the overriding application in the context of the

construction project is centred on three basic variables: organisation; management; and policies framework (Patel & Robinson, 2010). In mega project delivery, project governance involves the coordination, management and prompting the distribution of resources to attain agreed goals (Patel & Robinson, 2010).

In the last few years, the construction sector in Nigeria and notably South-South region, has witnessed numerous complex infrastructure projects in roads, housing, and tourism. The states of these infrastructures have attracted numerous recommendations at national and international levels. There are also a number of these projects straggling behind the baseline of defined objectives. In view of addressing problems affecting project performance, researchers in project management have moved from the construction related determinants to ‘front-end’ issues such as project governance (Dunovic, 2010). This significant departure stems from the emerging realisation that even well managed projects fail under the watch of the clients, consultants and the society (Klakegg *et al.*, 2007). However, while these studies are very few, the focus is mainly on joint venture projects and none is conducted in Nigeria public sector. Status quo prevails despite the enormous challenges facing the public sector of developing countries. While this research area has been widely explored in other parts of the world, a study that investigates this relationship in Nigeria is not apparent (Ogunsina & Ogunsemi, 2012).

To examine mechanics for improving the delivery of mega projects, this study assessed the influence of project governance on project performance using case studies. The objectives are to assess the level of adherence to essentials of effective project governance, and to evaluate their influence on project performance. The influence is hypothesized on whether actions and in-actions governing project implementation influence the attainment of project objectives. The determination of this objectives and their achievement is significant in a number of ways. First, the evaluation will enhance improved mega project delivery and overall realisation of project objectives. Second, it will facilitate stakeholders’ assessment of their level of effort towards the realisation of projects’ set objectives and how their actions and in-actions influence project performance notably at project organisation levels. Third, the outcome will improve the procurement option used and the projects procured with them amidst enhanced effective assessment of stakeholder’s input at the governance level.

## **Project Governance**

The basic obligation of project governance is to define how resources and risks are to be allocated to different participants in the project (Klakegg *et al.*, 2007). Project governance refers to ‘*an internal control framework established to help safeguard the interests of the owner and mitigate risks throughout the capital project lifecycle*’(Wallace *et al.*, 2004).The term has been used contextually to refer to ‘*a set of management systems, rules, protocols, relationships and structure that provide the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation*’ (Bekker & Steyn,

2009). Though, these definitions have demonstrated sufficient utility in the context of construction project delivery, needs however subsist that the concept must be defined to reflect specific industry context (Ogunsina & Ogunsemi, 2012). This is based on the need to portray the way in which successful projects are realised (Patel, 2007). However, it is noteworthy to emphasise that the origin and the application of the concept to project management, emanates from the generic principle of corporate governance system in business management. This perhaps informed the position of the Association of Project Management (2004) when it noted that, the concept relates to relevant premises of corporate governance which are notably linked to project undertakings. Other definitions are centred on the concept of governance in which project governance is linked strongly to accountability and responsibility (e.g. NAO, 2006; OGC, 2008). Nevertheless, irrespective of the application and meaning given to the concept, the key issues are not unconnected to how to accelerate progress and advance efficiently when delivering and supporting projects. According to Pratt (2011), teams are intensifying effort in demanding the inclusion of governing structure in project documents to ensure that participating organisations are able to clearly drive their roles, decision making, participation and accountability. This position, if realized, will be useful in mega projects delivery in developing countries where projects are championed and financed by the public sector.

### **Challenges in the Governance of Mega Projects in the Public Sector**

Project governance seeks to define control measures for meeting set goals, which is constrained by legal and regulatory frameworks with the aim of ensuring efficient use of public fund (Dunovic, 2010). The choice of appropriate project governance structure is significant to the delivery of mega projects (HM Treasury, 2007; Ho *et al.*, 2009). Wallace *et al.* (2004) emphasised that, the root cause of project failure originates from governance structure. Henisz *et al.* (2012) also observed that mega projects are confronted with governance challenges that could marred the project objectives. A study by Garland (2009) identified governance structure as the second most common problem associated with project failure in the UK public sector. In Nigeria, dubbing this finding may not differ significantly from obtainable results. Increasing numbers of studies have demonstrated strong relationship between project governance with project success. Regrettably, research interests have stopped short of examining project organisations in Nigeria (Awuzie & McDermott, 2012). Many mega projects in Nigeria are trailing behind set objectives not just in cost, time, quality but in other success parameter such as local content development (Awuzie & McDermott, 2012), empowerment, employment, technology transfer and other socio-economic pushes (NPC, 2004). Jooste (2009) maintained that the lack of proficiently govern mega projects are common place in developing countries.

Using the Agency theory, Ogunsina & Ogunsemi (2012) identified three basic challenges ('moral hazards') to the inherent project governance structure in Nigeria. These include the possession of hidden action and agenda; the agent as utility amplifier seeking first his own

interest, and the cost of monitoring agent's activity in the project web. Studies in other parts of the world OGC (2008), identified other challenges to include: the lack of clear links between the project and the organisation's key strategic priorities; including agreed measures of success; and lack of effective engagement with stakeholders. Others include lack of skills and proven approach to project management and risk management; and little attention development and implementation into manageable steps. Initial priced based evaluation of proposals rather life-cycle value for money and the lack of appropriate project team integration between project board and the supply chain also impedes the governance of projects. Heightened levels of uncertainties and risks also poses destructive barriers. The dimensions of social and political conflicts are also prevalent (Levitt, *et al.*, 2005).

### **Project Performance**

The performance of project remains a front-end issue because every project have defined expectation that must be met (Idoro, 2012). Prime project performance criteria remain an integral part of project management theory. The early definitions of project management encapsulated the popular 'iron triangle'. Project management may not have changed these measurement criteria in the last 50 years to meet the needs of modernization; Atkinson (1999) suggested the 'Square Route' measurement criteria. This divergent only witnessed the incorporation of qualitative parameters rather than quantitative as it was. The added dimension makes frontiers such as users' satisfaction popular in project management effectiveness evaluation. Two other perspectives emerge in Atkinson's performance evaluation: organisational and stakeholders' satisfaction. The implication is that, performing projects must emphasize project organizational needs and end users' satisfaction. Accordingly, several performance factors have been studied. Josephson and Lindstrom (2007) developed 250 factors, and Ling (2004) evaluated 70 potential factors for assessing project performance (Idoro, 2012). However, two broad measurement criteria are popular among project management literatures: objective and subjective. The objective criteria are quantitative in nature while subjective measurement depends on stakeholders' perception. Earlier classification by Pinto & Slevin (1998) adopted internal (schedule, cost and quality) and external (perceived project organisation effectiveness and stakeholders' satisfaction). Several other models lean towards the systems identified in this section. However, the iron triangle is popular and widely used among researchers in construction project management.

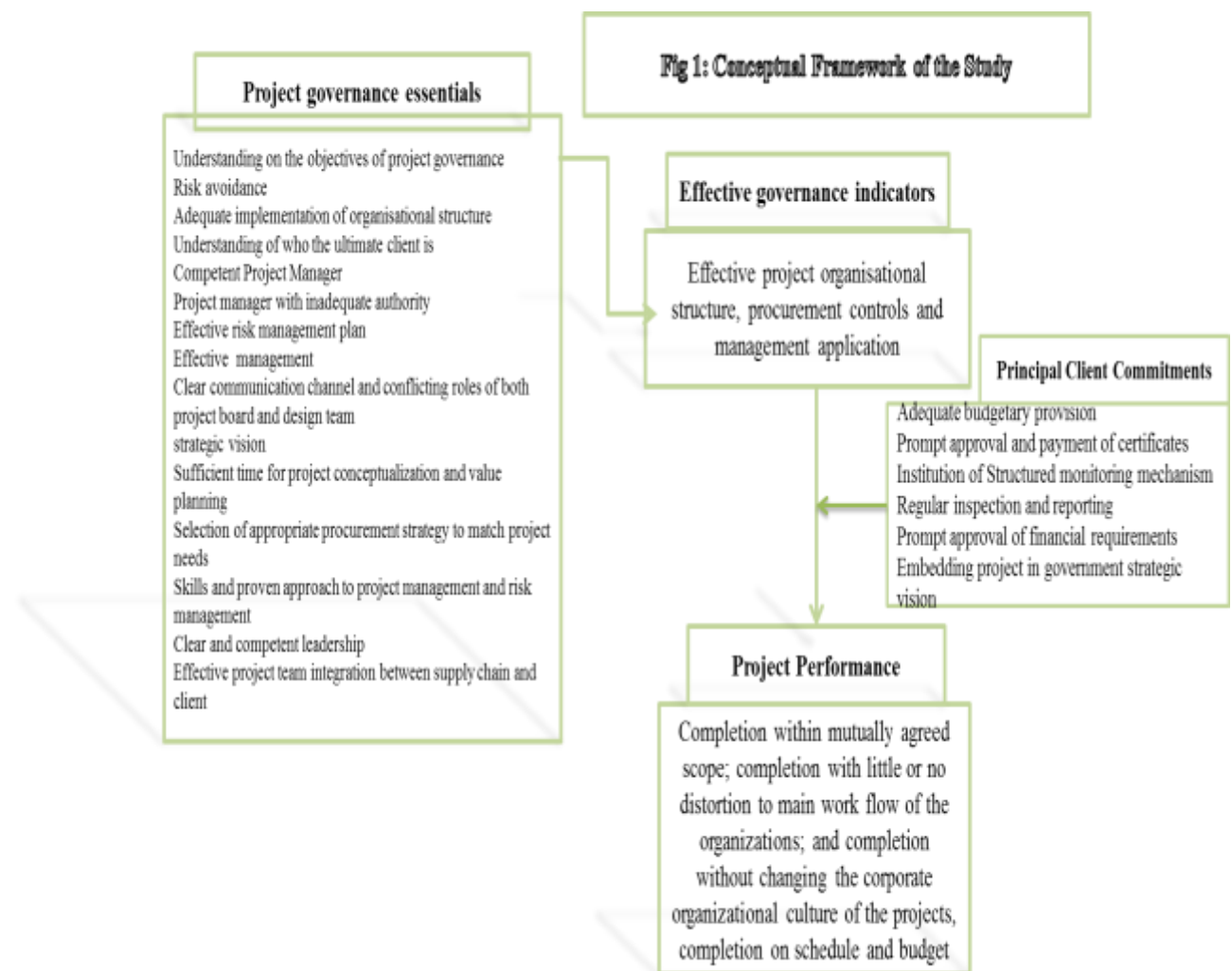
But due to the context of this study, Kerzner's typology will be studied. Kerzner (2001) suggested three parameters for evaluating project performance from the organizational perspective. These include completion within mutually agreed scope; completion with little or no distortion to main work flow of the organization; and completion without changing the corporate organisational culture of the projects. The nature of project organizations studied account for the use of these parameters. Performance in the context of this study is subject to adherence to the 'essentials' of project governance (Fig 1-conceptual framework of the study).

## **Research Methodology**

In order to achieve the objectives of the study, a two tier research design was adopted. First, literature review was conducted on a range of varying sources. The literature review established the need for this study based on extant gap in the literature. It also generates variables for hypothesizing the research problem. The second tier employed survey to examine the project governance structures of two mega projects based on the need to study specific projects of interest. The selection of the case studies were based on specific features that meet mega project criteria. These features include complexity, estimated initial project cost, involvement of multicultural teams, long period of completion, and uniqueness in scope and needs that has never be executed before in the research environment. Using a multiple case study approach, findings across two projects were compared thereby overcoming the limitations of single case study. The approach is suitable for related study (Meyer, 2001), and has been successfully used by researchers e.g. Patel and Robinson (2010). Yin (2009) maintained that case studies is suitable to investigate ‘why’ and ‘how’ using multiple evidence despite the misgiving from the academic about the suitability of the approach (Flyvberg, 2005). This approach is also suitable for cross-case studies comparison, enhances the determination of a particular event and enhance description of individual experiences of phenomena (Harwell, 2011).

The survey sample comprised of stakeholders in the two mega projects. A sample of 116 respondents was obtained through preliminary inquiry to the various stakeholders offices in Uyo Akwa Ibom State. The stakeholders includes, the project board (Bureau of Technical Matters, BTM, nominated personnel from the Ministry of Finance, Office of the Secretary to the State Government, Office of the State Governor and champion ministries- Ministry of Housing and Special Duties); project consultants (Architects, Project Managers, Engineers, Quantity Surveyors), 7 participating contractors’ organisations and designated personnel from the champion ministries (Housing and Special Duties) which are also relevant building team professionals. The 116 respondents identified from these populations were sampled randomly.

The data collection was carried-out in two phases. First, structured questionnaire was designed and used to collect data relating to respondent assessment of the project governance structure using 15 indicators and their assessment of the project’s performance in terms of delivery time and other criteria used by the study. The second phase of data gathering covered archive examination and solicitation by the researchers. Solicitation was used to collect data on the project cost. Project costs are held in high confidence and are known only by the first and second level board members. Solicitation involves application for the requested information and signing of necessary register to affirm the intended use of the data.



The questionnaire consists of two parts: part A and B. The first part collected data relating to respondents' functions in the project organisations. The second part elicited data relating to respondents' assessment of the level of satisfaction with 15 indicators of effective project governance in the projects. Respondents were also required to assess principal client level of commitment to the projects. This was aimed at substantiating that, the actions and in-actions of the stakeholders that hitherto influenced performance is not induced by principal client's action. Thirdly, they were required to assess the performance of the projects using defined performance criteria. Each question was ranked on a percentage scale 1 to 100; 1 being the least and 100, the highest level of satisfaction. The indicators of project governance's satisfaction were presented in the reverse order. For example item 12 in Table 2, 'Selection of appropriate procurement strategy to match project needs' was presented as 'wrong selection of procurement strategy to match client's needs'.

Information relating to reporting structure, decision making, accountability and level of responsibilities, project management systems and risk management were examined in each project organisation during archival data examination stage. Survey data was analysed using mean item score and Spearman correlation test was employed to test the hypothesis.



## **The Case Studies**

The case studies presented in this study are public sector projects procured with two of the most conventional systems for project delivery-design build and management contract. The projects are most prioritised mega projects of the Akwa Ibom State government, Nigeria 2009-2015.

### **Case Study I – Ibom Tropicana & Entertainment Centre**

The Ibom Tropicana Entertainment Centre is a mixed use tourism project. The project concept is akin to the Sun City of South Africa and the prestigious Disneyland (Akwaibomonline.org, 2013). The project comprised of: Cineplex with six screen cinema halls and a seat capacity of 1030 now completed and commissioned; a standard shopping mall with 59 standard shops and two banks service corridors; an ultra-modern convention centre with a multi-floor capacity of 5000; a 15-storey five star hotel with 250 rooms; and Theme Park with Dry and Wet Rides/Attractions covering an area of three hectares (Akwaibomonline.org, 2013).

The project which commenced in 2009 with a 3 years targeted completion date is only 60% complete at the time of the study. The project was procured using the management contract approach. Basically, in this kind of arrangement, the client contract separately and almost concurrently with the design organisations and with an organization whose primary knowledge is construction (Alberta Infrastructure, 2001). The owner only procures the management services of the management contractor who provide 'cost schedule, constructability, and serviceability input to the design as an additional member of the design team' (Alberta Infrastructure, 2001).

In this project, the Management Contractor (MC) - is a household name in the International Tourism and Entertainment industry with a number of cinemas spread across Nigeria. But little is known about its expertise in construction. This was not prioritised during the procurement selection and selection criteria was based solely on their presence in the entertainment industry. The government was determined to put to use these facilities at the scheduled completion date based on political interest and criticisms that welcomed the project at inception; and this approach is known to deliver on time. The MC contractor assumes too much power as delegated than necessary despite its lack of experience in construction. The MC superintends the project and appoints consultants including the project manager. The work was not led on trades' basis but as a unit contracts to six different contractors. Based on the MC inexperience; some of the 'sub contractors' were handpicked and not selected. Several months after take-off, some of the work packages couldn't commence. A project –the international convention site was abandon after piling because the plies failed load test. This project was abandoned for many months before re-awarding. Ineffective governance structure and allocation of authority and roles are some of the project management issues being tackled at the moment.

## **Case Study II - Ibom International Stadium (Nest of Champion)**

Akwa Ibom International stadium is a multi-faceted complex with facilities such as tennis courts, swimming pools, basketball courts, and tartan tracks. The main bowl consist of a 4-tier terrace seating arrangement, all covered, with a capacity for 30,000 spectators. This capacity is half the conceived size at inception. The work is now completed with training pitch equivalent in size with that in the main bowl, there are two parking lots and access; VIP and bus parking areas, VIP access and public access, coffee-shops, shops, restaurants, banquet-hall and many more.

The contract was awarded to a national contractor in the last quarter of 2010 selected from design competition with other firms on a design-build package. The project couldn't commence on schedule due to late completion and approval of designs. In principle, conceptual design is a prerequisite bidding document in design-build contracts; but the contractor was favoured based on its track record, capability to deliver on schedule and presence in the state. After award, the government imposed unnecessary bottleneck and layers of protocol on the project organisation structure by instituting a full design team comprising relevant professionals' for post contract services. Based on inexperience of the client's advisors, government incurred significant cost on consultancy fees. The project also witness 325% cost increases with no addition to the proposed capacity.

## **Hypothesis of the Study**

To determine the influence of project governance on project performance, a research hypothesis was formulated. The hypothesis states that, there is no significant correlation between adherence to project governance and project performance. The outcome of the hypothesis testing is aimed at determining the effectiveness of project governance in the delivery of mega projects. The result of the hypothesis is accepted when  $p\text{-value} > 0.05$  and rejected when  $p\text{-value} < 0.05$ . The result when accepted shall mean that the project governance essentials were efficient and where it is rejected, it shall imply non-adherence to effective project governance essentials.

## **Results**

The result of the study was analysed to achieve the objective of the study. The first analysis carried out was to determine the proportion of respondents and their organisations (Table 1). Fifty six (56) valid response which is equivalent to 65.1% response rate was obtained. The large percentage is due to the study of specific case studies, and was easy to identify and sample the participants. Thirty four (34) respondents participated from Case Study I while 22 respondents participated from the second Case Study. Respondents from consultant organisations represented 39% of the study's sample, 29% are client/project board members while 32% respondents are



from the contractors' organisations. This is fairly equitable and their opinions represent that of the entire participants.

**Table 1: Respondents' Proportion**

Category	N	%	Category	N	%
<b>Case Study I</b>			<b>Case Study II</b>		
Consultants	14	39	Consultants	8	40
Client/Project Board	10	28	Client/Project Board	6	30
Contractors	12	33	Contractors	6	30
<b>Total</b>	<b>36</b>	<b>100</b>	<b>Total</b>	<b>20</b>	<b>100</b>
<b>Gross Total = 56</b>					

In Table 2, respondents' assessment of project governance is presented. The assessment was based on percentage scale of 1 to 100. The average rating in case study I range between 13 to 100; and 7 to 81 in case studies II. The key factor in the governance of the two case studies is the selection and implementation of project procurement systems. The selection of procurement system for both cases was appropriate and this factor received the highest rating 87 and 80 respectively. The high rating signifies participants' satisfaction with the appropriateness of procurement systems used. But the procurement systems were wrongly implemented. The level of wrong implementation were rated 40 and 80 respectively in case studies I and II and worse implementation problem is case study I. Lack of understanding of project governance was severe in case study I and participants in case study II tends to have appropriate knowledge of the project implementation structure. The result is the same with every other indicator of project governance in Table 2. Table 3 summarizes the result of the archival examination of project data.

In order to determine the contribution of the principal client to the governance problems in the projects, client's level of commitment was assessed using 6 indicators (Table 4). The overall results demonstrates that the client have shown significant commitment to the projects through funding, approvals, policy and monitoring framework. The implication although not apparent from the survey, is that exogenous factors accounts for the problems faced in the projects. Accordingly, all indicators were rated above average (3.0)

**Table 2: Mean Assessment of Stakeholders on Project Governance Performance**

Essentials of Project Governance	Case Study I	Case Study II
1. Understanding on the objectives of project governance		
2. Risk avoidance	83	20
3. Appropriate implementation of organisational structure	80	40
4. Clear understanding of who the ultimate client is	100	80
5. Competent Project Manager	80	40
6. Project manager with inadequate authority	80	75
7. Effective risk management plan	60	20
8. Effective management	78	15

9. Clear communication channel and conflicting roles of both project board and design team	71	81
10. Lack of strategic vision	81	85
11. Sufficient time for project conceptualization and value planning	22	15
12. Selection of appropriate procurement strategy to match project needs	87	80
13. Skills and proven approach to project management and risk management	13	7
14. Clear and competent leadership		
15. Effective project team integration between supply chain and client	92	54
	84	72
	76	34

Table 5 presents respondents overall assessment of project performance based on five measurement criteria. The overall perception of performance based on respondents' assessment is low.

### **Table 3: Summary of Findings from the Case Studies**

<b>Case Study 1- Ibom Tropicana Complex</b>	<b>Case Study 2-Ibom International Stadium</b>
<p><b>Procurement Strategy</b>  <b>Management Contract(MC) intended</b>                      This was based on the need to tap on early completion advantages of the system which overlap design and construction.</p> <p><b>Reporting Structure</b>                      Cumbersome layers of authority. The design team were short chained from the Project board and solely answerable to the MC contractor</p> <p><b>Level of Authority &amp; Responsibility</b>  <b>Level 1 :</b> MC contractor, Ministries of Special Duties, Culture &amp; Tourism, Finance, Housing &amp; Bureau for Technical Matters(BTM), Office of SSG and Governor  <b>Level 2:</b> Directors of Housing, QS Services, Engineering, Maintenance, Project Monitoring Unit- BTM  <b>Level 3:</b> Project Manager &amp; Design Team  <b>Level 4:</b> Sub-contractors  <b>Level 5:</b> Joint project board (representatives from Housing, Special duties, Culture &amp; Tourism etc.)</p> <p><b>Project Control</b>                      Project procurement governance structure was not adequately implemented thereby delegating too much authority to the inexperienced MC contractor. The control mechanism is therefore complex stiffened by ineffective management.</p> <p><b>Project management</b>                      Traditional project management although the project manager was trained in PRINCE2. But the lack of competence by the MC and inappropriate implementation of the project</p>	<p><b>Pure Design Build (DB)</b>                      Time and price certainty were prioritized because the date of commissioning was determine by the State government</p> <p>Complex introduction of unnecessary layers of consultants inhibits DB contractor utilisation of speedy decision making.</p> <p>Level 1: DB contractor, Ministry of Housing &amp; Bureau for Technical Matters(BTM)                      Level 2: project manager &amp; design team                      Level 3: joint project board (representatives from Housing &amp; BTM, Youth &amp; Sports etc.)</p> <p>Project procurement governance structure implementation is appropriate but the contractor selection criteria for DB were not thoroughly considered and implemented. The control mechanism is complex as there is no clear delineation of responsibilities in accordance with contractual form used. The project manager tends to lack focus of what his responsibilities are thereby delegating contractor's responsibilities to the design team. The relationship therefore portends a traditional contractual arrangement.</p> <p>The project management improved as the DB contractor</p>

governance structure resulted in poor management and poor communication with the senior project level

**Risk Management**

Absence of a well analysed and thought out project risk register and mitigation or management plan in a very high risk project. For instance, external stakeholder’s issues, site acquisition, acquired site adequacy and over 90% project component are obtained offshores.

**Project Performance**

Grossly behind schedule, quality not guaranteed based on incidences at the site such as failed pile foundation test; incompetent CM, and incompetent sub-contractors. On cost performance, it is difficult to judge and evaluate at this point, since the project governance structure does not guarantee cost certainty. However, based on the amount expended in payment to the sub-contractors on works executed so far; it is apparent that targeted construction cost is exceeded. On a percentage scale, participant rank this project 20% in all parameters-cost, time and quality.

**Identifiable Project Objectives**

Not clearly stated and documented and also not understood by participants notably the MC contractors.

retains a chunk of his responsibility but inappropriate implementation of the project governance structure resulted in poor management and poor communication with the client. Client approvals are difficult with imposition of changes outside the original scope resulting in expensive cost of variation in which DB is known for.

There is a project risk register maintained by the contractor saddled with the responsibility of full risk management as detected by the contractual form. Based on the contractor’s ability to management project risk, it is a medium risk project.

Project quality is high, cost performance high except for variations. Time performance is low due to uncertainties not capture in the risk management and inappropriate implementation of contractual form that make approval cumbersome. On a percentage scale, participants rated 80% on cost and quality and 40% in time performances.

Defined and documented in iron triangle –cost and time certainty and quality but realisation with project governance structure not well understood by the client project team.

None of the projects was rated ‘average’ in all performance areas. Both projects failed to achieve completion within mutually agreed scope. Case study I was designed to have monorail within the complex while Case study II initial designed capacity was to accommodate 50,000 seated spectators. Similar results were recorded in the second and third criteria. Significant distortion and changes is recorded in the implementation structure of each project. The flow of authority and communication also suffers serious setbacks. On time performance, both projects are also behind scheduled completion time.

**Table 4: Principal Client Level of Commitment to Projects**

<b>Commitment Indicators</b>	<b>N</b>	<b>Mean Percentages</b>
Adequate budgetary provision	56	76.50
Prompt approval and payment of certificates	56	82.50
Institution of Structured monitoring mechanism	56	90.00
Regular inspection and reporting	56	76.00
Prompt approval of financial requirements	56	65.00
Embedding project in government strategic vision	56	95.00

**Table 5: Mean Results of Project Performance**

<b>Project Performance Indicator</b>	<b>N</b>	<b>Mean Percentages</b>	
		<b>Case Study 1</b>	<b>Case Study II</b>
Respondents assessment of completion within mutually agreed scope	34	22	25

Respondents assessment of completion with little or no distortion to main work flow of the organization	34	32	22	38
Respondent assessment of completion without changing the corporate organizational culture of the projects	34	11	22	46
Overall project Cost overrun	Above N15Billion		Above N22Billion	
Overall Project time overrun	66 months		18months	

**Table 6: Results of Spearman Correlation Test between Adherence to Project Governance and Project Performance**

Variables Correlated	N	R	p-value	Decision
Respondents assessment of completion within mutually agreed scope	56	0.024	0.692	Accept
Respondents assessment of completion with little or no distortion to main work flow of the organization	56	0.131	0.307	Accept
Respondent assessment of completion without changing the corporate organizational culture of the projects	56	0.320	0.708	Accept
Overall project Cost overrun	56	0.830	0.052	Reject
Overall Project time overrun	56	0.560	0.005	Reject
<b>Case Study II</b>				
Respondents assessment of completion within mutually agreed scope	56	0.480	0.049	Accept
Respondents assessment of completion with little or no distortion to main work flow of the organization	56	0.209	0.872	Accept
Respondent assessment of completion without changing the corporate organizational culture of the projects	56	0.006	0.906	Accept
Overall project Cost overrun	56	0.920	0.042	Reject
Overall Project time overrun	56	0.401	0.001	Reject

The test of the correlation was carried-out to evaluate the influence of project governance on project performance. The indicators of project governance were correlated against five project performance measurement criteria. The results with decision ‘accept’ indicate correlation value greater than critical p-value. This is an indication of insignificant correlation in respondents’ assessment of project governance’s influence on project performance. The hypothesis is therefore accepted for these variables. Similarly, the results ‘reject’ means the correlation values are less than the critical p-value. The implication again is significant correlation in respondents’ assessment of project governance’s influence on project performance. The hypothesis in this case, is rejected. Alternatively, project governance significantly influences project performance.

## The Discussion

The correlation results emphasizes the need to improve the governance of projects in both case studies. The design-build approach in case study II is known for time and cost certainty and completion within agreed scope. But with the result showing extant discrepancy, the indication is clear that there is a lack of understanding on its implementation culture. Whilst similar result is obtained with case study I, management contracting is also known for fast track delivery that

ensures completion on time. But the management contractor assuming the position of the principal client and the usurpation of project manager's powers is responsible for the problems witnessed in the project. Despite the high level of commitment demonstrated by the principal client, by ensuring adequate budgetary provisions, institution of monitoring organs different from the project board, the governance on these projects are faced with non-adherence. It portrays the lack of understanding of the principles guiding the implementation of these procurement strategies. To improve on the performance of these projects, check and balances must be maintained, and adherence to the principle guiding the implementation of these structures is also suggested.

The key factor in the governance of the two case studies is therefore wrong implementation of project organisation systems. Selection and use of procurement strategies is appropriate but its implementation is grossly distorted due to inexperience of the project board. Lack of an effective and appropriately delegated project manager in both cases circumvent the possibility of appropriate implementation of project organisation strategy. Cocks & Begg (2013) in a related study on how to 'improve project governance and delivery' correlated appropriate implementation of project organisational strategy with the project manager's authority and knowledge. The case with non-conformance to the established principles in organisation strategy implementation is not new. Pighini *et al.* (2011) found inconsistencies in public sector's application of project organisation structure; with clients adopting diverse organisational strategies and management applications in delivering mega projects.

On the impact of project governance structure on project performance, delayed completion remain the most discernible performance objective that require improvement. Since project success differs with every stakeholder, the case studies are being celebrated already despite its non-completion. Earlier studies by Morgan & Gbedemah (2010) and Patel & Robinson (2010) had established a correlation between project governance and performance objectives such cost, time, quality and financial viability. Thomsett (2002) and Cammack (2005) present classic cases of Sydney Opera House and Millennium Dome London. Sydney Opera House went 16 times over budget and 4 times more to finish than originally planned. But the final impact the Opera House created was so big that no one remembers the project management missed goals. The Millennium Dome London was delivered on time and on budget but in the eyes of the citizenry was a major failure because it couldn't deliver the anticipated glamour and awe.

However, there is an extant dissimilarity between these results and findings in Morgan & Gbedemah (2010) and Patel & Robinson (2010). Both studies examined infrastructure case studies involving joint venture organised using PFI and PPP. The tendency of wrong implementation of organization strategy is minimal due to high private sector input. The planning time in privately financed project is also significant while public sector project often suffer effects of rash decision in order to meet political manifestoes. Further implication is that

since both studies have corroborated findings establishing relationship between project governance and the project performance, the basis for the validation of the finding is amalgamated using cross sectors' projects involving both traditional forms and contemporary approaches in procurement. It however throws up the challenge to further investigate studies in other places using other traditional forms. Nevertheless, the study's finding is again challenged by use of mixed qualitative and quantitative data. This approach hinders the use of sophisticated statistical estimation. There is also the prejudice of using earned values from on-going projects. But since earned value is a veritable tool in performance evaluation due to its ability to enhance the adoption of corrective measures during the project life-cycle, the outcome of the study stands valid.

## **Conclusion**

This study established the relationship between project governance and project performance. The results indicate that wrong implementation of project governance structure contributed to delay completion, budget overrun and changes to agreed scope, organisation implementation culture and work flow of project organisations. The study had set out to determine the influence of project governance on project performance using case studies. The test of influence involved Spearman correlation between fifteen project governance essentials and five performance assessment criteria.

To improve project performance and ensure effective project governance, stakeholders should ensure well defined single point responsibility is clearly vested in a competent project manager for the success of the DB projects. Emphasis must also be placed on the effective implementation of project organisation strategy based on established principles and industry's standard. Such strategy must clearly identify and observe the basic pillars of effective project governance irrespective of the project organisation strategy adopted. The study provides useful insight into the problem challenging project management and inefficient use of procurement strategies in developing countries. The findings further throw up the challenge faced in adopting scientific approach in the selection of procurement strategies.

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