

Effects of Non-Adoption of Contract Auditing on Construction Project Delivery in Port Harcourt, Rivers State

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Keywords: Auditing, Construction, Contract, Project, Nigeria.

ABSTRACT

Construction projects face a rise in financial fraud due to increase in the number of people, corporate bodies and money involved. This study set out to unearth the effects of non-adoption of contract auditing in construction projects by providing answers to three research questions: effects of non-adoption of contract auditing, factors determining the use of contract auditing, and strategies to ensure the completion of large construction projects?. A quantitative research design approach was adopted based on the use of structured questionnaires for a survey of 43 construction project professionals. Mean Item Score and Relative Importance Index were employed in the analysis of the data. In summary, this paper has found that the possibility of financial loss is of paramount importance in judging the need for contract auditing. Furthermore, the top factors that determines the level of awareness/adoption of contract auditing all lie within the power of the government acting as client of the construction industry. In addition, the support of top management is indispensable in because all of the top strategies identified for achieving effective delivery of projects deal with issues that predate the commencement of the project, and are within the purview of top management. A key recommendation of this paper is that unless and until the top echelons of government embrace the adoption of contract auditing as a key clause in construction contracts, the full benefit of audits in ensuring effective delivery of construction projects cannot be realised.

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INTRODUCTION

Lopes (2012) assert that the construction industry forms a large part of the economy of every country and accounts for between 5 and 10 percent of gross domestic product (GDP). Though clients engage and pay professionals to plan and execute projects, the success rates of projects leave much to be desired (Shehu et al., 2014). According to the Standish Group International's CHAOS Report (1999), 34% of projects executed were successful (on time, within budget and according to original specifications); 15% of projects failed (abandoned or terminated) while 44% of projects were challenged (completed, over budget, over time and with fewer features). While carrying out a construction projects, mistakes are made, the unexpected happens, and conditions change. It is thus prudent to have periodic reality checks on current and recently completed projects.

Contract audits generally answer the following questions: did the project deliver the expected benefits to all stakeholders?; was the project managed well?; was the customer satisfied?; and what was done wrong? Contract audits are instruments for supporting continuous improvement and quality management. Unfortunately, it is estimated that about 90% of all projects are not seriously reviewed or audited. This is a big mistake. Without reflective assessment valuable lessons learned are forgotten and mistakes are repeated. Organizations that seriously audit their projects are leaders in their fields.

A Contract can be defined as an agreement which the law will enforce or recognize as affecting the legal rights and duties of the parties (involved in the contract). Seeley (1997) affirms that the law relating to building contract is one aspect of the law of contract and tort. A contract generally has certain provisions and allocates a balance of responsibility, reward and risk. According to Cai *et al.* (2012) an audit is a planned and documented activity by qualified persons to determine by investigation, examinations or evaluations of objective evidence, the adequacy and compliance with established procedures, or applicable documents and the effectiveness of implementation.

Contract audits are necessary because construction projects potentially face increased fraud due to the number of people, companies and money involved. These conditions demand predictive risk mitigation programs to improve project management effectiveness, safety program compliance, design specification compliance and non-traditional construction methods from a competent professional (Baker, 2014). The aim of this study is to unearth the effects of non-adoption of contract auditing in construction projects by answering three questions. These are: What are the effects of non-adoption of contract auditing on large construction projects in Port-Harcourt, Rivers State?; What factors determine the use of

contract auditing for mitigating non-completion of large construction projects in the study area?; and What strategies can be employed to ensure the completion of large construction projects?

LITERATURE REVIEW

Construction Contract Audit

Auditing is a systematic and official examination and check of business accounts (Arah, 2000), or as seen by Cai et al. (2012) as a systematic and independent examination of data, statement, record, operations performance (financial or otherwise) of an enterprises for a stated purpose. Construction contract audit therefore is an essential internal control process to maximize capital program effectiveness. The first objective of audit is to obtain a documentation of cost incurred and paid for by the owner in completion of the project to justify if the request for reimbursement were in alignment with the applicable contracts. The scope of the financial audit here includes all costs involved by contractor including sub-contractor cost, in addition to direct cost paid for by the owner. The second objective of the audit is to obtain an understanding of the control environment surrounding a particular project to determine if any control deficiencies were noted. Auditing has been defined by several authors; such definitions emphasize that an auditor has to be an independent of the management who are responsible for the preparation of the accounts (financial statements) and he must be responsible to the owner who receives and utilizes the report (Damagum, 2005). An audit can be characterized according to the nature of work undertaken (statutory audits, private audits, internal audits and management audit (Dandago, 1999)) or the method of approach to the work (final or complete audits, interim audit and continuous audit).

The role of contract auditing practice is paramount important in construction activities it serves as means of ascertaining how the financial transaction of construction contract is being handle by both parties to the contracts. Furthermore, the purpose of project auditing practice is to ascertain the fair administration of project cost and identifying lessons learned that can help improve the performance of a project or improve the performance of future projects by undertaking a forensic review to uncover problems to be avoided. Construction contract auditing service is a popular aspect of services in the construction management and the engineering industry as a service support and purposed operation. Although not enjoying an outstanding recognition in the Nigeria's construction industry as compare to other aspects of services operating in project management, construction managers have always tried to ensure project success through accountability and technological advancement. According to Seeley (1997), construction is an interrelated complex of operations whereby buildings and installations are erected. Furthermore, construction work may be carried out by private contractors or Direct Labour Organizations (DLO's), and the end product of construction work is a finished building and installation.

The Contract Audit Process for Construction Projects

The project audit is not a witch hunt; it is important that audit activities should be intensely sensitive to human emotions and reactions. The project manager should be notified of the

impending audit. Accuracy of data should be verified or noted as subjective, judgmental, or hearsay. Senior management should announce support for the project audit and see that the audit group has access to all information, project participants and (in most cases) project customers. The objective is not to prosecute; rather, to learn and conserve valuable organizational knowledge. The audit should be completed as quickly as is reasonable. The process of the project audit is conveniently divided into three steps: (1) Initiation, (2) data collection and analysis, and, (3) reporting.

Step 1: Initiation

Initiation of the audit process depends primarily on the organization size and project size along with other factors. However, every effort should be made to make the project audit a normal process rather than a surprise notice. An audit may be automatic, at specific stages in the project life cycle, perhaps when a project is 10 to 20% complete, 50% complete and after completion. The automatic process works best because it removes the perceptions that a project has been singled out for evaluation and that someone might be on a witch hunt. Unplanned audits should be avoided except in unusual circumstances.

A major tenet of the project audit is that the outcome must represent an independent, outside view of the projects. Maintaining independence and an objective view is difficult, given that audits are frequently viewed as negative by project stakeholders. Given that projects audits are susceptible to internal politics, organizations may rely on outside consulting firms to conduct the audits.

Step 2: Data Collection and Analysis

Each organization and project is unique; therefore many factors need to be considered including Project size, Newness of technology, and Project experience. Data will generally be collected first on attributes of the project such as cost, time, size, and so on. Thereafter data will be collected through the asking of a series of questions. The traditional content model for a project audit presents two perspectives. One evaluates the project from the view of the organization, while the second perspective represents the project team's evaluative view. The first perspective asks questions such as: Was senior management's/support adequate? Did the project accomplish its intended purpose? Is there a clear link to organizational strategy and objective? The second perspective focuses on questions such as: Did the project conform to plan? Is the project over or under budget and schedule? Why? Did the team have adequate access to organization resources, people, budget, support groups, equipment?

Step 3: Reporting

The major goal of the audit report is to improve the way future projects are managed. Succinctly, the report attempts to capture needed changes and lessons learned from an ongoing or finished project. A very general outline common to those found in practice is as follows:

- a) *Classification of projects*: there are differences in the way projects with different characteristics are managed and handled. The classification of projects by characteristic allows prospective project managers to be selective in the use of the

report/content. Typical classification categories include the following: Project type e.g. Development, construction systems and marketing; Size monetary; Number of staff; Technology level- low, medium, high and new; Strategic or support.

- b) *Analysis of information gathered*: The analysis section includes succinct, factual review statements of the project. For example: Project mission and objectives, Procedures and systems used, and Organization resources used.
- c) *Recommendations*;
- d) *Lessons learned*: Lessons learned serve a reminder of mistakes easily avoided and actions easily taken to ensure success. These do not have to be in the form of recommendations. In practice, new project teams reviewing audits of past projects similar to the one they are about to start have found audit reports very useful.
- e) *appendix*.

METHODOLOGY

This study involved two main elements: literature review and findings from a survey of 43 construction project professionals. A quantitative research design approach was adopted based on the use of structured questionnaires. The questionnaires contained six sections; five dealt with various research questions, while the sixth collected data on five demographic variables. Data was collected through purposive sampling of construction professionals; a snowballing approach was used to identify only those involved with construction projects whose execution had stalled. Relative Importance Index (RII) was employed in the analysis of the data; this was justified because the paper was interested in effect of non-adoption of contract auditing. The formula for the RII is

$$RII = \Sigma W / (A * N)$$

Where, W is the weighting given to each factor by the respondents (ranging from 1 to 5), A is the highest weight (i.e. 5 in this case), and N is the total number of respondents. The higher the value of RII, more important was the effect. The results obtained were presented in tables.

RESULTS AND DISCUSSION

Demographics of survey respondents

The respondents were from six different professional backgrounds; quantity surveyors at 34.9% of the sample were the most numerous, while builders and town planners were fewest at 9.3% respectively. These results are presented in Table 1. Only seven out of 43 respondents were female, reflecting the general perception of construction as a male preserve. Most of the respondents worked for consulting firms (55.8%).

Effects of non-adoption of contract auditing

The results of analysis of the data obtained from survey of professionals revealed that the top three effects of non-adoption of contract auditing on construction projects are *Increase in final cost of project (RII = 0.86)*; *Distortions of the landscape/urban planning of the environment*; and *Waste of finance and materials resources (both having RII of 0.80)*. From the results as presented in Table 2, it was apparent that respondents considered financial losses to be of paramount importance in judging the need for contract auditing. Respondents

however disagreed with the notion that non-adoption of contract auditing would lead to *Conflict between public administration and private sector* ($RII = 0.47$). In all, respondents fully agreed on 13 out of 20 effects of non-adoption of contract auditing on construction projects.

Table 1: Respondent demographics

Aspect	(n)	(%)	Aspect	(n)	(%)
Profession of respondent			Gender of respondent		
Architect	6	14.0	Female	7	16.3
Builder	4	9.3	Male	36	83.7
Engineer	7	16.3	Work experience of respondent		
Estate Surveyor	7	16.3	Less than 5 yrs	1	2.3
Quantity Surveyor	15	34.9	5 yrs – 15 yrs	19	44.2
Town Planner	4	9.3	16 yrs – 25 yrs	15	34.9
Other (specify)	0	0.0	More than 25 yrs	8	18.6
Educational attainments			Employer		
OND/NCE	0	0.0	Client	8	18.6
HND/B.Sc	21	48.8	Consultant	24	55.8
M.Sc	21	48.8	Contractor	7	16.3
Ph.D	1	2.3	Others (please specify)	4	9.3

Table 2: Effects of non-adoption of contract auditing

Effects Of Non-Adoption Of Contract Auditing	MS	SD	RII	Rank	Remark
<i>Increase in final cost of project</i>	4.488	0.78	0.86	1st	A
<i>Distortions of the landscape/urban planning of the environment</i>	4.071	0.97	0.8	2nd	A
<i>Waste of finance and materials resources</i>	4.3	0.82	0.8	3rd	A
Insecurity of lives of due to its use as criminal hideout	4.119	0.77	0.8	4th	A
Wastage of equipment in site	3.976	0.78	0.78	5th	A
Deprives government of the expected revenue from property tax	3.952	1.13	0.77	6th	A
Increase in unemployment level	3.952	1.1	0.77	7th	A
Lack of trust on the government by the citizenry	3.952	0.76	0.77	8th	A
Decrease in the revenue accruing to government	4	1.32	0.76	9th	A
Marginalization of population (used by homeless people)	3.905	0.98	0.76	10th	A
Leads to loss of strength of structural members (Steel corrosion)	3.881	0.8	0.76	11th	A
Economic activities decrease	3.667	1.1	0.72	12th	A
Structural failure of building	3.561	0.9	0.68	13th	A
Hidden places for dangerous animals	3.381	1.21	0.66	14th	SWA
Defacing the aesthetics of the urban environment	3.214	1.51	0.63	15th	SWA
Declining of the property values	3.325	1.38	0.62	16th	SWA
Marginalization of the host population	3.167	1.17	0.62	17th	SWA
Foreign loans become more difficult to obtain.	2.881	1.35	0.56	18th	SWA
Environmental pollution through garbage disposal	2.786	1.28	0.54	19th	SWA
<i>Conflict between public administration and private sector.</i>	2.381	1.19	0.47	20th	D

Note: MS=Mean Score; A=Agree; SWA=Somewhat Agree; D=Disagree

Factors that determine the level of awareness/adoption of contract auditing

The results of analysis of the data as presented in Table 3 revealed that the top three factors that determine the level of awareness/adoption of contract auditing on construction projects are *Delay in or partial/total inability to release government funds* ($RII = 0.82$); *Change in government*; and *Poor supervision of project* (both having RII of 0.80). From the results, it was apparent that respondents considered the client (which is the government, in the case of the public projects considered in this study) should bear the blame for non-adoption of contract auditing. This is because all of the top three factors that determine the level of awareness/adoption of contract auditing deal with issues that lie within the power of the government as client. Respondents only agreed somewhat with the notion that *Lack of stakeholders' involvement in project selection* would significantly determine the level of awareness/adoption of contract auditing. In all, respondents fully agreed on 14 out of 17 factors that determine the level of awareness/adoption of contract auditing on construction projects.

Table 3: Determinants of level of awareness/adoption of contract auditing

Determinants of level of contract auditing awareness/adoption	MS	SD	RII	Rank	Remark
<i>Delay in, or partial/total inability to release public funds</i>	4.293	0.51	0.82	1st	A
<i>Change in government</i>	4.171	0.74	0.8	2nd	A
<i>Poor supervision of project</i>	4.22	0.61	0.8	3rd	A
Poor planning of project	4.073	1.19	0.78	4th	A
Legal suits involving some or all aspects of the project	4.098	0.7	0.78	5th	A
Corruption	4	0.77	0.76	6th	A
Personal gains (political projects leadership)	3.902	0.77	0.74	7th	A
Unwillingness of financial institutions to fund projects	3.878	0.68	0.74	8th	A
Bureaucratic processes	3.902	0.62	0.74	9th	A
Lack of commitment by project leaders (performing organisation)	3.756	1.07	0.72	10th	A
Appointment of incompetent projects leaders	3.683	1.13	0.7	11th	A
Withdrawal of funding by donor countries and agencies	3.634	0.94	0.69	12th	A
Political gains (political party level)	3.946	0.78	0.68	13th	A
Lack of commitment by project leaders (political leaders)	3.575	1.26	0.67	14th	A
Lack of monitoring of the progress of the project	3.488	0.95	0.67	15th	SWA
Lack of feasibility studies before starting the project	3.366	0.89	0.64	16th	SWA
<i>Lack of stakeholders' involvement in project selection</i>	3.293	1.38	0.63	17th	SWA

Note: MS=Mean Score; A=Agree; SWA=Somewhat Agree;

Measures to ensure the completion of audited large construction projects

The results of analysis of the data as presented in Table 4 revealed that the top three measures that could be adopted in order to ensure the completion of audited large construction projects are *Transparency in selection of competent and trusted contractors* ($RII = 0.944$); *Ensuring availability of needed funds before initiation of project* ($RII = 0.898$); and *Proper costing and scheduling of project (taking into account human controllable factors and uncontrollable/unforeseen factors)* (RII of 0.893). From these results, it was apparent that respondents considered that the soundness of actions taken **before** the commencement of the

project would best determine the completion of such project. This is because all of the top three strategies identified by respondents deal with issues that predate the commencement of the project. Respondents only agreed somewhat with the notion that setting up an *abandoned project resuscitation agency/unit/department* (ranked 13th-14th with RII of 0.693-0.656) would significantly help in the completion of audited projects. In all, respondents fully agreed on 12 out of 17 strategies that could help ensure the completion of construction projects.

Table 4: Strategies for the completion of audited large construction projects

Measures to ensure the completion of audited projects	MS	SD	RII	Rank	Remark
<i>Transparency in selection of competent and trusted contractors</i>	4.721	0.591	0.944	1st	SA
<i>Ensure availability of needed funds before initiation of project</i>	4.595	0.587	0.898	2nd	SA
<i>Proper costing and scheduling of project (taking into account human controllable and uncontrollable/unforeseen factors)</i>	4.571	0.547	0.893	3rd	SA
Using innovative management tools/techniques	4	0.826	0.781	4th	A
Adoption of Public Private Partnership (PPP) arrangement	3.951	0.999	0.753	5th	A
Policy of continuity of project by successive administration.	3.927	1.212	0.749	6th	A
Use of abandoned projects appraisal committee	3.698	0.964	0.74	7th	A
Yearly budgetary allocation for abandoned projects	3.854	0.76	0.735	8th	A
Involvement of stakeholders in project selection and approval	3.667	1.028	0.716	9th	A
Abandoned projects resuscitation policy	3.643	1.1	0.712	10th	A
Refurbishment of abandoned projects	3.558	0.934	0.712	11th	A
Solicitation for funds	3.643	0.791	0.712	12th	A
Government-based abandoned project resuscitation agency	3.465	1.369	0.693	13th	SWA
Establish institution-based abandoned project resuscitation unit/department	3.279	1.297	0.656	14th	SWA
Changing procurement methods	3.341	0.883	0.637	15th	SWA
Levy of beneficiaries	3.19	1.018	0.623	16th	SWA
Designing with deconstructability in mind	3.268	0.923	0.623	17th	SWA

Note: MS=Mean Score; SA=Strongly Agree; A=Agree; SWA=Somewhat Agree;

Discussion of Results

This paper has established that financial losses on construction projects are considered to be of paramount importance in judging the need for contract auditing. This finding aligns with that of earlier researchers, such as Badara (2012) that indicated that audits provided an additional guarantee of sound financial control. Without contract audits, stakeholders are exposed to losses arising from poor financial control. Public sector clients have been identified as being responsible for non-adoption of contract auditing on most construction projects. All of the top three factors that determine the level of awareness/adoption of contract auditing lie within the power of the government as client. The unwillingness of governments to force the adoption of contract auditing on construction projects can be explained in the light of the finding of Yee *et al.* (2008) that managers frequently regarded audits in a negative light, perceiving auditors simply as ‘watchdogs’. From the results presented in this paper, it was apparent that the soundness of actions taken **before** the commencement of the project best determines how well such project is completed. These actions that predate the commencement of the project include *Transparency in contractor*

selection; Ensuring funds availability; and Proper costing and scheduling of project. This finding ties in with that of Tackie *et al.* (2016) that lack of top management support had a negative impact on audit effectiveness. This is because the measures that would ensure effective delivery of projects cannot be achieved without top management support.

CONCLUSION

This study set out to unearth the effects of non-adoption of contract auditing in construction projects by providing answers to three questions bordering on effects of non-adoption of contract auditing, factors determining the use of contract auditing, and strategies to ensure the completion of large construction projects? In summary, this paper has found that the possibility of financial loss is of paramount importance in judging the need for contract auditing. Furthermore, the top factors that determines the level of awareness/adoption of contract auditing all lie within the power of the government acting as client of the construction industry. In addition, the support of top management is indispensable in because all of the top strategies identified for achieving effective delivery of projects deal with issues that predate the commencement of the project, and are within the purview of top management.

Key recommendations put forward in this paper include the following:

- i. Since all construction projects are exposed to the possibility of financial loss, parties to the construction contract should adopt the use of contract auditing as a key clause in such contracts.
- ii. The responsibility for ensuring the adoption of contract auditing as a key clause in construction contracts lie with public sector clients. Not discharging this responsibility exposes such clients to the possibility of financial loss.
- iii. Unless and until the top echelons of government embrace the adoption of contract auditing as a key clause in construction contracts, the full benefit of audits in ensuring effective delivery of construction projects cannot be realised.

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BIOGRAPHICAL NOTES

Chille Humphrey ANYAWATA is a practicing Quantity Surveyor and a project management consultant for building, civil and heavy engineering constructions in Port Harcourt, Rivers State of Nigeria. He is a partner at Naol Associates - a quantity surveying and project management firm in Port Harcourt - and the principal partner at Achille Integrated Ventures. He is serving as the Quantity Surveyor/Coordinator of Rainbow Town Development Limited Port Harcourt – a modern upper-end residential development with an initial takeoff budget of 50 billion naira (approximately US\$108m at N465/US\$1). Apart from being a fully registered member of the Nigeria Institute of Quantity Surveyors (NIQS) and the Quantity Surveyors Registration Board of Nigeria (QSRBN), he is at present working towards a Master of Technology degree in quantity surveying at the Federal University of Technology Minna, the institution from where he obtained a Bachelor of Technology degree in quantity surveying in 1999. He is a resource person for several professional associations in the built environment, and also serves as a QS consultant to numerous estate surveying and valuer firms.

Abdulganiyu Adebayo OKE is a Quantity Surveyor working as a lecturer with the Federal University of Technology Minna in Nigeria, from where he obtained a PhD in quantity surveying in 2018 with emphasis on artificial neural networks. His membership of professional bodies includes the Nigeria Institute of Quantity Surveyors (NIQS), the Quantity Surveyors Registration Board of Nigeria (QSRBN) and the Association of Quantity Surveying Lecturers (AQSLE). He has authored/co-authored over 30 peer-reviewed publications and serves as reviewer for numerous journals and conferences including the Environmental Technology and Science Journal (ETSJ).

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