



## THE EFFECTS OF PROCUREMENT PROCESS IN DEVOLVED CONSTRUCTION MANAGEMENT PROCESS ON QUALITY OF PUBLIC BUILDING PROJECTS IN KENYA: A CASE OF BUSIA COUNTY

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### ABSTRACT

The construction sector is a key player for sustainable development. Both levels of government in Kenya (National and County) have identified construction sector as a driver of the development agenda. The devolved units (counties and constituencies) have invested quite substantial amount of public funds in infrastructure development and yet social audit and media reports have raised the concern over poor quality of the projects undertaken by these devolved units. This study therefore sought to investigate the procurement process to determine its effects on quality of public building projects. A case involving sixty-four projects sampled from Busia County and its seven constituencies was carried out. The study was a sample survey whose data was collected using questionnaires, interviews and physical observation exercise. The data was analyzed using descriptive statistics and Chi-square good-for-fit tests. The findings indicated very low participation of the County procurement officers as financial managers in the construction process of the public building projects undertaken by devolved units. The participation rate was at 22% which implied that the projects were constructed without proper procurement process. The physical observation assessment revealed quality of the public building projects stood at 34% compliance to building specifications and standards which is inadequate to meet required standards. It is concluded that the involvement of County procurement officers as financial managers in the construction management process of public building projects undertaken by the devolved units was inadequate and impacts negatively on quality of the projects. In order to achieve the sustainable development as far as the infrastructural development is concerned, involvement of County procurement officers as part of project managers in construction process was critical. This therefore called for development of the legal and quality frameworks to guide the construction sector at the devolved units.

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### INTRODUCTION

Construction management process is critical in meeting the required quality of the construction projects. It is the application of processes, methods, knowledge, skills and experience in construction field to achieve the project activities. The construction sector is critical to socio-economic development both nationally and globally.

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The global construction industry currently represents about 13% of global GDP and is projected to reach 15% in 2020. Construction in developing or emerging markets is set to increase by 110% and infrastructure construction by 128% with China being the primary engine of growth accounting for 20% of this growth. These numbers are projected with the after effects of the financial crisis and subsequent global rescue packages factored in (David, 2013). The construction industry is one of the main drivers of Kenya's economic growth and accounts for at least five per cent of the country's GDP. The construction industry provides employment to energetic population and its role in provision of construction products (infrastructure and buildings) cannot be over emphasized. The

World Bank (2015) report projects a steady economic growth rate of 5.4 percent in 2015 and it is projected to reach 5.7 percent in 2016. This economic growth is attributed to the heavy investment by the government in construction industry both at the National and County Government levels. Devolution in Kenya brought about rapid spread of public building projects all over the republic through devolved funds. The Government has devolved public funds to reach citizens in the rural areas/settlement. Devolution of these funds has succeeded politically in the sense that the Constituencies and Counties are managing these funds. Economically in the sense, that the local people get employment through public projects. The reports from the stakeholders and studies show that large amount of money has been allocated to public building projects whose qualities are below expectations. Some money has been allocated to ghost public building projects through corruption (NTA, 2012). The reports further show how shoddy jobs of public building projects have been approved by Ministry of Public Works officials through corruption where millions have been paid for poorly constructed projects. The devolved funds have been used in various projects with an aim of improving the lively hood of all Kenyans. Quite substantial amount of these funds is invested in building and construction sector which has experienced challenges in quality management of the production/construction processes.

The devolved construction process comes with its effects or influence on the overall quality of the construction products and services. The impact of the devolved construction process can be traced from the time the Constituency Development Funds and other devolved public funds were established through legislation in the National Assembly (CDF act, 2003). One of the great challenges experienced by construction sector in Kenya is the persistent problems of building collapsing during and after the construction process. In a record of 15 months between 2015 and 2016, Kenya witnessed six instances of collapsing buildings as reported by the daily local newspapers. The reports on collapse of buildings showed that the buildings were under private ownership where the greedy owners constructed them without following the right procedures. The plans were not approved and no professionals were involved in the implementation of such buildings. Nyakiongora (2015) established that the services of qualified technical personnel in construction industry who could have detected early warning were not sought as per the requirement. The procurement process is critical in ensuring that the client gets his or her value of money. The procurement for public building projects is done through the Government supply chain guided by the public procurement and asset disposal act of 2005. With devolution, the procurement process has been largely left to the local committees to run the process just as it has been the case of private buildings where the owners are left to procure goods and services for their projects. Inappropriate procurement procedures compromise the quality of the projects. It is of great interest therefore to investigate how procurement process of the public projects is carried out under devolved units to determine its contribution to the quality of the project. The purpose of the study was to assess the public building project procurement process to determine its effects on quality of public building projects. This was done through examining the participation of County procurement officers as legally recognized officers for procurement services of public projects by devolved units.

This was to determine the level of participation and compliance to professional procurement process by the devolved units.

#### **The objectives of the study were**

- To determine the participation of County procurement officers in public building projects procurement process and how it impacts the quality of the projects.
- To establish the level of compliance to procurement standards as set in PPADA (2005) by the Counties and Constituencies and how it affects the quality of public building projects.

The study was guided by the theoretical framework model developed to provide the linkages of the construction management process and the roles and responsibilities of the stakeholders in achieving the objective of the projects. The foundation of the study was based on the concepts of system theories that have been developed from the conception of European philosophy as described by Bertalanffy V.L (1968). In this model, the roles and responsibilities of the system are given alongside the actors. The focus of this study was the roles and responsibilities of the county procurement officers as project finance managers. The paradigm in this study took a divergence approach from the traditional system approaches/theories where systems are viewed in general terms of an organization to business approach where the concepts of economy, quality and professionalism are the central nerve of a system. It is in this context that the paradigm of this study was functionalist. This paradigm has the dimension of objectivists and regulatory (Saunders, Lewis and Thornhill, 2012). Objectivism is the ontological position adopted in the functionalist paradigm. It is regulatory in that the study was concerned with a rational explanation about the influence of public works officers on quality of the projects.

Udom (2012) defines procurement as obtaining by purchase, lease or other legal means, plant machinery, equipment, materials, services and works required by an organization. According to the Designing Building Ltd. (2017), procurement is the process of purchasing goods or services. There are many different routes by which the design and construction of a building can be procured. CMAA (2010) provides the goal of procurement as to secure bidders for each bid package who are qualified, competitive, interested in the work, and capable of doing the work within the project time requirements. The CIOB (2010) carried out the first survey into procurement in Construction Industry in UK. The results indicate that professionals view procurement as absolutely crucial to the delivery of a project on time, on budget and to a high quality, with 87% of respondents were of the belief that good procurement is synonymous with a successful project. 82% of respondents believe that "suicide bidding" exists within the industry, a worrying statistic that highlights the dangers of selecting a very low bid at tender stage. Lawther and Martin (2005) came up with a strategy of public procurement partnership to address the inefficiencies of general procurement. They argue that public procurement does not take place in a societal vacuum. Social, economic and political trends largely define the context in which public procurement takes place. They developed a concept of "21 Century governance" is about public procurement partnership. It is seen as a synthesis of the government approach and the market.

United Nations (2017) defines public procurement as the purchase of goods, services and works by public authorities or civil service organizations using public funds. The public procurement is guided by best value for money, fairness, integrity and transparency, effective international competition and the best interests of the organization principles. The Public Procurement and Disposal Act, 2005 defines public procurement as the acquisition of any public type of works, assets, services and goods by purchase, rental, lease, license, tenancy, franchise, or by any other contractual means. The Transparency International Kenya (2014) gives an account of public procurement as a key economic activity of any government that significantly impacts how taxpayers' money is spent and is a function that remains most vulnerable to corruption.

Public procurement in Kenya is guided by several laws enacted to weed out inefficiencies in the procurement process, remove patterns of abuse, and the failure of the public purchaser to obtain adequate value in return for the expenditure of public funds. Such laws include the Public Procurement and Disposal Act, 2005, Public Finance Management Act, 2012, the Public Officers' Ethics Act, 2003 among others. The objective of having these laws has never been fully achieved in practice. The Public Procurement Oversight Authority (2009) defines public procurement as the process through which the Government operates and spends its public resources. It accounts for over 10% of the GDP which makes it a large market for supplies and contractors. It is estimated to consume over 65 % of the national budget.

## METHODS

The study was a sample survey carried out in Busia County in Western Region of the Republic of Kenya. The philosophical view of pragmatism guided the study. Pragmatism is abductive and applies mixed research design and methods (Bristow, 2016). In seeking to address the problem of effects of public procurement process on quality of public building projects, the pragmatism philosophy was therefore more appropriate. The study applied the strategy of mixed methods in looking for answers to the research questions. The study utilized a number of methods to achieve the objectives. The roles and responsibilities of the County procurement officers as financial managers involved in the construction process of public building projects formed the independent variables and the quality of the project was the dependent variable. The review of the related literature and construction procedures in Kenya provided the ground upon which the factors assessed in the study were developed. The phases in construction management process provided the road map for investigation carried out in the study. Based on observations made in the pilot study, corrections were made on research instruments (questionnaires, interview schedules and observation check list). The County procurement officers were rated against the factors considered key for their participation as financial managers. The objectives of the study were formulated in a way that they required a quantitative data to be collected to facilitate the determination of level of participation and compliance to procurement procedures. The data received from the field was analyzed. The study population was 70 building projects. The study used random and purposive sampling techniques. The descriptive statistics and the chi-square tests were applied in data analysis. The pilot study and triangulation techniques were used to test internal and external

validity of the study respectively. The Cronbach's alpha and focused group discussions were used to test the internal and external reliability of the study respectively. The results obtained were used to draw the conclusions and recommendations of the study.

## RESULTS

Procurement in public sector is one avenue for planning all evils that haunt the construction of public projects. The public sector accounts for quite substantial amount of works in the construction industry and therefore the services of qualified procurement officers safeguards the public funds. The study recognized the head of county chain supply office as a key respondent. Others were heads of procurement for education, health, public works/roads and agriculture departments. The departments involved in the study were undertaking building projects at the time of the research. A total of sixty-four projects were involved in the study. The county projects were eight and each of the seven constituencies had eight projects involved in the study. 100% of the questionnaires given to the procurement officers were received back and found to be valid. Scholars have held varied response rates however the response rate of 60% has been found adequate in most of studies. Fincham (2008) and Johnson and Owens (2013) agree that an average response rate of 60% is adequate enough for the surveys.

The Table 1 provides the summary of the factor considered at stages in construction management process and how they were scored as far as the participation of the County procurement officers were concerned. The results show that the participation of procurement officers in the construction management process of the public building as being 11% and 33% for project initiation and tendering process, respectively. The results show the mean participation of 22% which was very low and inadequate to attain the required quality (value of money). The implication of these results was that the construction of the public building projects was done with insufficient professional procurement methods. Involvement of County procurement officers was inadequate.

To examine the roles and responsibilities of the county procurement officers involved in the construction management process of public building projects and how they contribute towards the quality of these projects, the chi-square goodness-of-fit-test was applied to the scores obtained from the questionnaires. The summary of the scores are presented in Table 2. Management process of public building projects were involved fully as per laid down procedures. The research claim was that the County procurement officers were fully involved in all stages of devolved construction process of public building projects. At  $\alpha=0.05$ , the claim was tested. The critical value was determined at the degree of freedom of  $2-1=1$  and  $\alpha=0.05$ . The critical value = 3.841 (chi-square distribution tables). The chi-square source table is as shown below. From the results there was enough evidence to reject the claim that procurement officers in construction were fully involved in all stages of devolved construction management process of public building projects that requires their professional services. The procurement officers' participation was at 22% which was very low showing how construction of public building projects was being constructed with minimal involvement of the procurement officers. At 22% participation of the procurement officers in public building projects implied that the projects

**Table 1. The summary of factors considered in every stage of construction management process**

stage	Factors considered	Factors scored by the procurement officers	Rank	Participation %	Remarks
Project initiation	18	2	2/18	11.0	inadequate
Project tendering	12	4	4/12	33.0	inadequate
Total	30	06	6/30	22.0	inadequate

**Table 2. The scores for participation of county procurement officers in devolved construction process**

Stage	Score	
	Score(O)	Expected (E)
Project Initiation	2	18
Project Tendering	4	12

Source: Field Survey 2017

**Table 3. The Chi-square source table for the results of county procurement officers' participation in construction process**

Stage	Scores				
	Score(O)	Expected (E)	$O - E$	$(O - E)^2$	$\frac{(O - E)^2}{E}$
Project Identification and Design	2	18	-16	256	14.22
Project Tendering	4	12	-8	64	5.33
Total				19.55	

Source: Field survey 2017

Decision: the decision was to reject the claim since  $19.55 > 3.841$ **Table 4. The Scores Obtained from the Physical Observation**

Projects	Factors	Rank	%
	Evidence of signs for failure/poor quality		
	expected	score	
1	10	7	7/10 70
2	10	2	2/10 20
3	10	3	3/10 30
4	10	1	1/10 10
5	10	3	3/10 30
6	10	8	8/10 80
7	10	1	1/10 10
8	10	2	2/10 20
<b>Total</b>	80	27	27/80 33.75(34)

Source: Field Survey 2017

**Table 5. The Chi-Square source table for the results of Physical Observation**

Project	Score(O)	Expected (E)	$O - E$	$(O - E)^2$	$\frac{(O - E)^2}{E}$
1	7	10	-3	9	0.9
2	2	10	-8	64	6.4
3	3	10	-7	49	4.9
4	1	10	-9	81	8.1
5	3	10	-7	49	4.9
6	8	10	-2	4	0.4
7	1	10	-9	81	8.1
8	2	10	-8	64	6.4
Total					40.1

were constructed without proper procurement which led poor procurement where quality is compromised. Failure to comply with professional procurement procedures, automatically led to poor quality projects. The study therefore established that the roles and responsibilities of procurement officers as project financial managers have a great impact on the quality of the public building projects. Lack of full participation of County procurement officers in the construction of the public building project contributes negatively to the quality of such projects.

To authenticate the results of the study, the physical observation exercise was carried on selected projects from those involved in the study. The physical observation was carried out on eight selected projects. It focused on the signs of failure (poor workmanship, cracks, lack of straightness, plumpness and level). The observation checklist covered ten well recognized factors considered as critical for physical observation. The factors were given one point for each and observation check list scored accordingly.

The factors assessed were evidence of visible cracks and deformed structural members, exposed coarse aggregates, exposed reinforcement steel bars, leaking roofs and moisture content in walls, lack of plumpness and levelling, straightness, quality finishes, quality fittings and quality painting. The results show that only two projects (P1 and P6) had the quality level above 50%. They were 70% and 80% for projects 1 and 6 respectively. Project 6 was the best in terms of quality followed by project 1. They were found to have adequate quality. The rest of the projects were found to be below average quality (50%). Projects 4 and 7 were with least adequate quality of 10%, followed by projects 2 and 8 with 20% and finally projects 3 and 5 with 30%. The results therefore showed that only 25% of the observed projects had the quality above average and 75% had the quality below average. The average of the quality assessment was 34% which is quite inadequate. From the scores, the researcher tested whether there was evidence of signs of poor quality in the selected eight projects. The research claim was that there was no evidence of signs of poor quality exhibited by the projects that were physically observed against the factors in the observation checklist. At  $\alpha=0.05$ , the claim was tested. The critical value was determined at the degree of freedom of  $8-1=7$  and  $\alpha=0.05$ . The critical value = 14.067 (chi-square distribution tables). From the results there was enough evidence to reject the claim that there was no evidence of poor quality signs exhibited by the projects that were physically observed against the factors in the observation checklist. The results therefore show that there was evidence of signs of poor quality in the public building projects observed. The results agree with those of the questionnaires and interviews.

### Conclusions and Recommendation

The study concludes that the roles and responsibilities of the procurement officers as public building project financial managers were critical in achievement of the quality public building projects. The study revealed a great departure from the centralized construction management process by the devolved units. The devolved construction management process does not allow full participation of County procurement officers in construction process. The construction process under devolved construction management process does not recognize the procurement procedures as stipulated in PPADA (2005). The construction of the public building projects is done without proper financial management strategies which led to poor quality.

### The study recommends the following

- The roles and responsibilities of County procurement officers should be outlined and the stakeholders in the construction of public buildings projects sensitized about them so as to bring professional procurement in the construction management process by devolved units.
- The quality management framework should developed by counties to check on the construction of the public building projects and other infrastructure development.
- The department of the supply chain at county level should be given full mandate to plan and procure the services for the public building projects to ensure the devolved construction management process is carried out professionally.

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