

An Investigation of the Effects of Procurement Methods on Project Delivery in the Zambian Road Sector

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Abstract

The European Union (EU) notes that the construction industry is overwhelmed with variant procurement methods and as such, it is very difficult to check irregularities and checks for compliance. The construction industry further faces challenges in coming up with a suitable method of procuring and delivering a project need. In the Zambian Road Sector (ZRS), there is no consistency in the procurement method used to determine the successful or failure of project delivery. There are various procurement methods being used but the project delivery methods commonly used are the traditional project delivery method and design and build methods. The aim of the research was to investigate the effects of procurement methods on project delivery in the ZRS. Primary data was obtained using structured questionnaires and interviews. The study used seventy (70) respondents who were experts in procurement and road construction project management in the ZRS.

Index terms— procurement methods, project delivery, zambian road sector, construction industry and procuring guidelines.

With the foregoing, when government agencies, multilateral development banks and public private institutions are overwhelmed with a variety of choices to make in deciding which procurement methods to use, it becomes a challenge, to come up with a suitable method. The challenge lies in the fact that for example in the execution of engineering project works, planning for the unforeseen is usually a standard practice. Therefore, it is very difficult to ultimately foretell at project inception stage the probable risks of using one type of procurement method against the other (Chartered Institute of Building, 2010).

1 II.

2 STATEMENT OF THE PROBLEM

In 2011, the government of the republic of Zambia (GRZ), through the road development agency (RDA) unveiled an ambitious road programme, in a bid to open up the country and spur socio-economic development. The notable road programmes introduced among others into the road sector annual work plan (RSAWP), were the link Zambia (LZ) 8000 and Pave Zambia (PZ) 2000 road programmes ??Road Development Agency, 2015).

The LZ 8000 programme involves the construction to bituminous standard of 8000 kilometre roads within the core road network (CRN) of Zambia in order to connect strategic provinces, districts and villages within the country. The target group in this programme are high-tech road contractors, consultants, skilled personnel with a few unskilled workers. While the PZ 2000 programme is aimed at constructing and paving 2000 kilometres of low volume roads using paving bricks, in urban areas throughout Zambia. The PZ programme being a labour based intensive programme has an emphasis on the utilization of local resources such as labour and materials. The project was intended to employ youths and reduce high unemployment levels in the country among the youths and also encourage small scale enterprises (SMEs) through procurement of concrete paving bricks from various suppliers for the programme (Road Development ??gency, 2015).

A glance at the performance of the programme from 2012 to 2016 indicated that out of the 27 projects totalling 4,168.39 kilometres under the LZ 8000 project that commenced, only 692.83 kilometres was opened to traffic as at December 31, 2016.

To help investigate the inter-play between procurement of road projects and successful project delivery, eight (08) projects from the Link Zambia 8000 programme were sampled. The project location covers the whole country of Zambia as shown in figure ???. Being a landlocked nation, the idea was to make Zambia a land linked country with the implementation of the link Zambia 8000: By connecting strategic Provinces; Districts; Suburbs and villages in order to spur socioeconomic development. The overall project performance of past road projects in the Zambian road sector stood at 53 percent as shown in figure ??.

3 Objectives

IV.

4 Literature Review

Procurement is defined as "a business management function that ensures identification, sourcing, access and management of the external resources that an organization need or may need to fulfil its strategic objectives" (CIPS, available at www.cips.org/Documents/definitions_of_procurement_and_scm.pdf);

As "the acquisition by means of a public contract of works, supplies or services by one or more contracting authorities from economic operators chosen by those contracting authorities, whether or not the works, supplies or services are intended for a public purpose" (EU, Public Contracts Regulations, 2015); "A major part of the PEM cycle by which the local administration buys works, goods, and services" (Abrahams, 2013); and or, for the purpose of this study procurement was defined as:

"A process which embodies value for money as its core principle while embracing many virtues such as transparency, competition, efficiency, accountability, fairness and economic realistic project schedules in the public PEM cycle".

This process is employed during the acquisition of public services, works and goods such as road contract works, in this context by the road implementing agencies, intended for the rehabilitation, maintenance, upgrading and or construction of public roads in the ZRS industry.

The essential objective of procurement is to ensure that all the fundamental principles governing the PEM cycle are adhered to, with a successful delivery of needed facilities to the public in order to spur eco-socio infrastructure development (Zambia Public Procurement Act, 2011).

5 V.

6 Plan Procurement

A Plan Procurement is a phase which seeks to answer questions as to: what exactly should be procured? How should the procurement be done? In what quantity should we procure? What exactly should be procured and when should procurement be done? Further, Plan procurement may be defined as the progression Phase of describing the range of a project/ programme to be undertaken by governments, organisations or institutions in order to ascertain the ideal project needs to be met by procuring services from the Private Sector (Canada, 2011).

7 VI.

8 Procurement Methods

Procurement methods have remained the same over the years while organizations have strived to employ different project delivery system (Baccarini, 2008). Other alternative procurement methods may be used by government agencies, multilateral development banks and public private institutions in cases where the ICB or the NCB would not be the best economic and cost effective methods (World Bank, 2011).

9 RATING

In Kenya, the government of the republic of Kenya through the public procurement oversight authority (PPOA) devised the procurement manual for works and came up with procurement methods, namely: open tendering; request for proposals for works and A. To investigate the effects of procurement methods on project delivery in the Zambian road sector. consultants; restricted tendering; direct procurement or single sourcing; low value procurements also known as request for quotations or minor works only; two staged tendering and specially permitted procurements (or PPP Contracts) (PPOA, 2009).

However, this research focused on the ZPPA's public procurement ACT of 2008, which provides a wide range of procurement methods that are available for use by all procuring entities in Zambia. Against this background, the road sector in Zambia have the privilege to access from a pool of variant procurement methods as outlined below (Zambia Public Procurement Act, 2011):

10 a) Open bidding

Open bidding refers to a type of procurement method in which a procuring entity publicly invites eligible bidders to tender or offer to execute an advertised work or service through a purchasing of a solicitation document or following an outlined instruction to bidders as may be outlined in the advert. Open bidding is also a benchmark for effective and efficient public procurement in that it promotes fairness, transparency, value for money and helps to reduce collusion, fraud and corruption. In addition, this method of procurement may be used to obtain eligible service providers and civil works contractors in the road sectors (WBa, 2014).

According to ZPPA Act of 2008 the public procurement regulations, 2011, open bidding may be national open bidding (ONB) or international open bidding (IOB) and requires that all procuring entities use this method of procurement for goods, works and nonconsulting services. Further, the condition precedent in Zambia is that award of a contract opportunity is biased to determination of the bid with the lowest evaluated price (Zambia Public Procurement Act, 2011).

11 b) Open Selection and Limited Selection

The objective of open selection is to encourage the participation of the Private Sector and enable the clients to obtain the best possible shortlist worthy value for money. This type of procurement is meant for consulting services and it is usually designed as an open tender in order to encourage competition.

12 In addition, open selection can either be open international selection (OIN) or national open selection (NOS).

Despite being open to the public, open selection may prescribe specific qualification criteria to guide in the eligibility of the targeted road service providers required to participate in the bidding process. The criterion applied in the ZRS may range from affiliation to the national council for construction in respect to grade, status of a company such as citizen owned company (COC) to the domicile status of the bidding firm (NCC, 2003).

Selection tendering at national and international frontier is sought when the estimated value of the procurement surpasses the given threshold in the procurement guidelines, the consulting services could not be accessed under competitive price or from at least three suppliers/ consultants in Zambia or in the region. Consequently, procuring entities are allowed to carry out a limited selection of consulting services, where the consulting services are only available from a limited number of suppliers or on grounds of emergency. This procurement method is tailored for consulting services only in which bids are obtained through specific invitation to a shortlist of bidders without advertising in any media accessed by the public (ZPPA, 2011).

The challenges to these types of procurement are similar to open bidding. Consultancy services calls for quality and cost based selection criteria. It also requires highly qualified professionals with experience. Therefore on these aspects local firms usually fall short of the required criteria and usually most jobs are taken by foreign based consulting firms. However, in certain instances a number of projects are delayed while awaiting the selection of consultants' mobilization of foreign consultants whose efficiency to mobilise from their countries is a challenge (Salleh, 2009).

13 c) Limited bidding and direct bidding

Limited bidding (LB) is a type of procurement which in reality is international competitive bidding except the design under this one is that eligible contractors are invited in person through writing instead of advertising in the media. On the other hand, though there is a limit in terms of number to be shortlisted it is anticipated to be broader enough to assure competitive prices. In addition, Direct bidding (DB) is another type of procurement in which a procuring entity engages a bidder directly without subjecting him/her to any form of competition. This may happen only in emergence cases otherwise this kind of procurement may lead to corruption in the selection of contractor or consultants (World Bank/IBRD, 2011).

Other Instances in which these kind of procurements may arise could be due to lack of many service providers in such works which are being sought to be done. Besides these, it can also be used when the proposed contract amount is not lucrative to attract foreign based contractors or suppliers (Asian Development Bank, 2015).

However, these types of procurement can be highly abused by procuring entities as they may become a source of corruption, collusion and fraud by avoiding open bidding, so that preferred contractor (s) can be handpicked. In its current form, the ZPPA Act shows inadequacies in ensuring that a maximum number to be shortlisted is enshrined in the act, other than stating that it should be broad enough and does not state that those to be qualified for short listing or single sourcing, should have had first passed a pre-qualification stage conducted by the procuring entity. Failure to have these clauses under the two procurement methods gives room for manipulation on the part of the contracting authority to invite any contractor of their choice. Besides, the methods lack the fundamental principles of procurement such as competition, fairness, transparency and value for money (Skitmore, 1997).

14 d) Simplified bidding

This is a type of procurement method used by contracting authorities in Zambia in circumstances where the threshold for procurement does not exceed K500 Million for goods, works and non-consulting services. While for consulting services, this method is applicable only when the threshold for procurement does not exceed K300 Million (Zambia Public Procurement Act, 2011).

A threshold for procurement is not in any way a fundamental principle that should govern a choice of a procurement method because project costs are determined by contracting authorities. Therefore, contracting authorities may adjust project cost in order to avoid competition and give themselves an advantage to benefit from a project by ensuring that it falls below a less competitive threshold. Because project costs with lesser thresholds does not attract competition from nonregional contractors and on the other hand having a higher project cost such as the one falling under the threshold for international competitive bidding (ICB) reduced into a threshold for simplified bidding only increases the time taken during procurement process and eventual successful project delivery (AfDB, 2014).

15 e) Procurement of infrastructure for private financing and award of concessions

This refers to comparable contracting, service concessions that the government may enter into with private investor to develop, operate and manage a public facility such as a road over a period of time for a return on their investment. Zambia is currently considering a number of road projects on the core road network to be carried by public private partnership (PPP) or contractor facilitated (CFI) model (RSAWP, 2017).

Procurement of infrastructure project entered into by governments use concession agreements which comes in variant forms, not limited to the following: build-lease-transfer (BLT); build-rent-transfer (BRT); build-own-operate (BOO); and build-own-operate-transfer (BOOT). These types of procurement methods are not good for developing nations like Zambia because infrastructure development is undertaken based on borrowings and the repayment period is usually very long, like it was in the case of the Suez canal which had a concession period of 99 (ninety-nine) years. This length period of time is too long for the concessionaire and the financier of a special purpose vehicle (SPV) to continue enjoying the benefits out of a constructed facility at the expense of the public of an origin country (Bunni, 2005).

Furthermore, designing, structuring and financing private and public projects poses great risks during both the pre and post construction phases. Some of the notable risks of these procurement methods which can subsequently haunt the origin country after assuming overall responsibility to care and maintain the constructed infrastructure are: increased interest rate risks which emanate from fluctuations in interest rates and depreciation of currencies against the major global currencies, especially volatile currencies are those amongst developing countries compounded by the risk of exchange rates (Gatti, 2008).

16 f) Community participation in procurement

This is a situation where the success of a project is anchored on the utilization of the local resources that may range from, human resource, materials and technical know-how. In addition, achievement of certain social problems like poverty may be reduced by implementation of labour intensive programmes like the Labour-based road projects. This kind of projects enable the participating locals to earn salaries and be able to better their livelihood at household levels (Puddephatt, 2012).

This type of procurement is not good because it take place outside the confines of the fundamental principles of procurement as defined in this study, such as competition, transparency and fairness. A person in authority may prefer to implement a labour intensive project in his home town or place of origin based on ethnicity grounds, while disadvantaging other communities, this is so, because community participation doesn't have well defined criteria to follow but simply depends on special discretion of those in authority. That is, basically obtaining community labour, either on a voluntary or paid basis similar to a private contractor may be engaged to carry out specified works by contracting authorities (UNCDF, 2013).

17 VII.

18 Methodology

The initial stage of the research reviewed the existing literature on the investigation of effects of procurement methods on project delivery from journals, books, internet and other secondary sources. Based on the obtaining findings from secondary data, questionnaire was designed.

The questionnaire was designed with three sections; section one (1) addressed demographical aspect of respondents, section two (2) addressed the procurement methods used in the construction industry while section three (3) was a guide interview with structured questions tailored to aid the researcher during interview of the identified key experts. The key experts were drawn from institutions which are at the centre of procurement, implementation and policy regulation in the ZRS. The target institutions to help with the research were: The RDA, MHID, NRFA, ZPPA, NCC, EIZ and the private contractors as well as consultants practicing in the ZRS.

Having had the institutions to help with the investigation or research, the appropriate sampling method which was adopted was purposive sampling method. Therefore, procurement officers, contract managers, senior engineers, site engineers, contractors and consultants among many other professionals in the ZRS who have been involved in actual contract procurement and project delivery of road works were identified, administered with questionnaires and interviewed. The overall sample size of the respondents was seventy (70).

Data collection comprised both primary and secondary data. Further, the collected data was analysed using Microsoft Excel 2013.

VIII.

FINDINGS AND RESULTS

The assessment of project works was limited to the projects that were unveiled after 2011, particularly those under the link Zambia 8000 project. During the interview of key experts, the identified desk engineers and project managers with at least ten (10) years' experience were interviewed and gave their view point concerning the performance of road projects under their charge.

The interviewee from Road Development Agency (RDA) said, "In most cases works contracts commenced before the finalisation of the designs and engagement of consultants to the projects. He further explained that this situation usually occurs due to stakeholder pressure, though mostly it is from politicians. He also stated that this situation always had retrogressive effects on successful project delivery because it is very difficult to monitor or supervise a project without designs". In addition, the interviewee disclosed that notable effects of works that commenced without designs and consultants on projects, experienced re-works and delays in completion of works. This was so because when the consultant finally got on site they found that contractors had wrongly executed certain works and therefore correction became inevitable. Consequently, project cost overruns, delays and re-works had characterized the ZRS sector. On the other hand, experts from NCC revealed that during assessment of some of the past and on-going projects they had encountered poor quality of works executed and point out that corruption should be the root cause of such substandard works noticed. They hinted that despite some of the project having had timely release of project funds, the quality of works left much to be desired. The interviewee also said incompetency of consultants and contractors had also contributed to project failure in the ZRS.

IX.

Conclusion

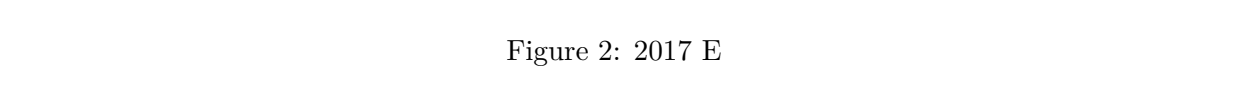
The different types of procurement methods employed in construction of road projects has a vital role in the successful selection of a contractor to be awarded a contract opportunity and subsequent completion of the project. However, the findings of this research study concerning, the relationship between procurement method and success project delivery indicated that: A procurement method cannot be singled out to be the reason for project success or failure alone. Because every procurement method have their own procedures to follow and once they are followed the project delivery takes place with their due conditions to be met; and the conditions to be met during project delivery are the implementation of procurement factors which have been extensively analysed to establish their impact on project delivery.

X.

RECOMMENDATIONS

Based on the findings from this study, the following recommendations are being made: guidelines such as advance payment should not be altered only in the interest of government but any review exercise so that their concerns are incorporated as well. Further, adjustments of as contractors should be allowed to be part of the Finally, I would like to extend my special thanks to my Supervisor Dr. Balimu Mwiya for her guidance and continuous reviewing of my work. ¹

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such adjustment made must be subjected to all the stakeholders before amendments are done.

Presently, the RDA law on limiting advance payment to ten (10) percent and seven and half (7.5) percent to local contractors and foreign contractors, works against best practices and therefore, hinders successful negotiations regarding the same, which

1. The Road Sector Annual Work Plan (RSAWP) should consider being framed based on the definite available projects.

implementing Agency such as RDA should be supported and respected to operate independently and remove the current direct influence that comes from politicians.

3. National Council for Construction (NCC) and Zambia Public Procurement Authority (ZPPA) regulations and guidelines should be reviewed to incorporate best practices and stakeholders such

Figure 3:

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