HANDLING FINANCIAL IMPLEMENTATION CHALLENGES OF PUBLIC-PRIVATE PARTNERSHIPS (PPPS) IN ZAMBIA

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ABSTRACT

Governments in developing countries face considerable challenges in single-handedly delivering development to their people. Modality of involving the private sector in closing the development gap has been a significant vision for governing authorities. In a bid to reverse Zambia's stifled growth, the country enacted the Public-Private Partnership (PPP) Act No. 14 of 2009. An array of critical success factors (CSFs) underlies decisions by countries for adopting the PPP model of development. The establishment of PPPs as the 'new normal' for development has revealed insufficient knowledge among building industry technocrats regarding the operability of such schemes. Further, implementation challenges have mainly affected financial, technical entities of valuation decisions over the main stages of the project, namely the proposal submission, negotiation, construction, and operation phases. This paper aims to highlight two knowledge gaps relating to the governance of PPPs. Firstly, there is a need to know the extent of built environment professionals' knowledge of the 'PPP new normal' for development. And secondly, there is a need to verify the scope of its transforming effects on Zambia's growth trajectory because of CSFs used for its introduction. To ascertain these objectives, a mixed research approach was used consisting of interviews, the administration of a questionnaire, and two case studies. Findings from this research revealed that this mode of development remains misunderstood by professionals owing to PPP complexities. Principal Component Analysis in SPSS showed that PPPs have had little transformative effect regarding CSFs used to establish them. Transformative prospects lie in industry professionals' acquaintance with potential risk factors affecting prudent fiscal management of projects.

Keywords: Financial Risks, Implementation, Public-private Partnership, Transformative

INTRODUCTION

Public Private Partnership (PPPs) are New Public Management (NPM) that improve contractual practices efficiency and accountability for open competitive tendering. Multilateral lending agencies responsible for Foreign Direct Investment (FDI)

insist on methods that foster such culpability. Governments around the world have changed their philosophies regarding the purchasing of infrastructure services. The earlier position included financing, designing, and operating the country's material portfolio with huge associated risks. As an off-the-budget benefit to governments, PPP developments are the reason they are preferred over the traditional form of procurement. The combined advantage of competitive tendering (in the case of a solicited bid) and flexible negotiation guarantee that risk is transferred away from the public. Project risk complexities introduced before and during the development reveal the kind of financial structuring and hedging options that ensure satisfaction for both client and investor. Lessons, therefore, are in abundance from successes and failures of implemented PPP projects across the African continent.

LITERATURE REVIEW

PPPs work on the premise of combining public and private sector entities in the execution of projects. This combination is aimed at mobilising funds as well as expertise. Akintoye (2009) cited three factors that have enabled the stage to be set for PPPs in Africa:

(a) The influence of global economic affairs that affected the social-political environment;
(b) Introduction of stringent procedures for regulating public sector borrowing; and
(c) The recognition of infrastructure in the growth of economies and alleviation of poverty disturbed by scarce income levels in the public sector.

African economies have, therefore, recorded a rise in projects secured under the PPP mode of development.

PPP Challenges

Ndandiko (2006) and Zulu and Muleya (2009), have expressed contrary views regarding Sub-Saharan Africa. They argued that PPP procurement is fraught with difficulties of deficient regulatory frameworks and bankrupt public and private sectors rated as important conditionalities for the success of PPPs (Li, 2005; Zhang, 2005). Challenges (or risks) in PPP projects occur across a range of issues which include (Solino and Vassallo, 2009):

(i) The project's relationship period (or concession);
(ii) The funding method; and
(iii) The spread of risks between the project partners from the private and public sectors.

The quantification of risks requires measures to mitigate them as they pose challenges to the project. Wang *et al.* (2000), suggested the following mitigation measures in Table 1.

Table 1: Mitigation Measures

Risk type	Possible mitigation measures
Currency risk	(a) Weighing the position of foreign reserves (b) Acquisition of authority to transfer of convertible currency (c) Obtaining support from the government for privileged access
Expropriation risk	(a) Forging relations with other international funding agencies (b) Obtaining offshore insurance for loans and equity investments
Change in law risk	(a) Obtaining government guarantees for export and import restrictions (b) Sharing of risks for loan borrowers and output purchasers
Political violence risk	Obtaining political insurance with multilateral and bilateral political insurers
Government approval risk	Obtaining all government approvals and guarantees
Loan security risk	Foreclosure and insolvency, security measures

The hallmark of PPP projects is the allocation of risk (Rwelamila *et al.,*2003). The nomenclature of the pattern of risks, particularly for developing countries embarking on using this mode for development, has insufficient information and remains a challenge (Ndandiko, 2006). During the evaluation process, the developer's due diligence needs to be investigated for actions against various risks that can affect the project. Surmounting project risks instils confidence in achieving the intended business goal (Warnes and Warnes, 2014). And as risks are evaluated, this guarantees the success of the PPP project (Mwanaumo *et al*, 2020; Mukalula and Muya, 2014). Contract conditions target threats that arise as a combination of the political, legal, economic and social environment prevailing in the country (Joslin and Konchitchki, 2018). Merna and Lamb (2002) listed eight time-related risks that affect loan repayments before and after the commissioning of a project. These were:

(a) currency risk;
(b) interest rate risk;
(c) equity risk;
(d) commercial risk;
(e) liquidity risk;
(f) counterparty risk;

(g) country or political risk; and

(h) accounting and economic risk.

There should be measures instituted to curb risks spiralling out of control once the project commences. Financial accounting and risk mitigatory instruments, are the two subjects that must occupy the project team during the execution stage. The developer must use various hedging instruments to avert the financial failure of the project. Aggarwal *et al.* (2011), found that Chinese Corporations with risk exposure of between 20 to 40 per cent are extremely high. Financial instruments need to have longer maturity tenures to counter the interest rate risk arising from extended periods of implementing the project. Raising construction equity for large PPP projects is a challenge in developing countries banking sectors (Zulu and Muleya, 2009). Distorted economic information can cause projects to be financially pressured, resulting in one of these equities. Risk-sharing by the public, therefore, becomes a safer choice (Kartashova, 2018). Speedy project execution reduces exposure to commercial risk. On the other hand, the developer's susceptibility to solvency must be dealt with through liquidity risk. Credit risk of this nature can be mitigated by enacting laws that would enhance sharing of information through banks (Kusi *et al.,* 2017). Saunders and Cornett (2008), suggested the use of forwards, futures, swaps and options in curbing the lack of national liquidity.

Project lenders assess counterparty risk in getting assurance over the developer's financial standing of the developer. To do so, debt serviceability is associated with a country's political risk. The effect created by such a risk is considered as harmful as the equity cost for investors (Warnes and Warnes, 2014). Expropriation or, worse off, project cancellation may be remedial modalities but would impede progress. Accounting risk is a retrospective assessment of a company's risk structure, while economic risk focuses on their wider repercussions to project operations (Toumi *et al.,*2018). All these risks relate to the proprietors' project cost on interest rates for loans procured from multinational companies during the development process. The upturn for investors' execution of PPP projects comes when interest rates are low and slows down when they escalate. Walsh (2003), pointed out five methods that give an overview of cost and time in the context of risks. These are:

a) A sensitivity analysis that gauges the effects of suppositions on project net present values and total costs;

b) Scenario planning involves evaluating the project in different situations;

c) Monte Carlo analysis examines the chances of obtaining the reality of the project in light of postulations made in cost projections;

d) Decision rules/trees analyse options against set measures; and

e) Discount rate accounts for the envisaged risk for the recovery of invested funds in the project.

The CSF's study by Chan *et al.* (2010), also singled out appropriate risk allocation, concluding that there was the need to understand better individual factors affecting project success. Pongsiri (2002), argued that while many governments in developing countries are eager to sign their first demonstration PPP contracts, most have inept legal and regulatory frameworks to monitor private contractors' performance and ensure contractual compliance. Performance monitoring achieves better and informed decision-making which is a need in emerging economies that have adopted the PPP mode of procuring construction projects (Pongsiri, 2002; Zhang, 2005b).

RESEARCH METHODOLOGY

Mixed method research was the design adopted for the investigation. A two stage-structured focus group study provided the initial non-probability sampling for the research. The primary methods used were interviews and questionnaires management under this technique (Kothari, 2011). Interviews and questionnaires were conducted on a selected team of professionals, conversant with the establishment of PPPs in Zambia. This list was provided by the National Council for Construction (NCC) and consisted of cross-section individuals from the industry. Interviews conducted lasted between thirty and forty minutes. All those selected had work experience with implemented as well as upcoming projects. Documentary (or archival) evidence was used for the two case study projects as secondary data. Eventually, data triangulation was the end process used to compare the results from the three data collection methods. The philosophical approach adopted was both ontological well as epistemological (Creswell, 2003).

FINDINGS AND DISCUSSION

The focus of the interviews and questionnaires was fourfold in firstly identifying financial risks. After that, methods to evaluate risks and how pursued CSF impacted the PPP projects were also investigated. All the collected qualitative data was analysed descriptively (Silverman, 2010). The accuracy of the financial methods used was assessed using Spearman's Rho. Results from Principal Component Analysis (in the Statistical Package for Social Sciences - SPSS) were used to show what CSFs were transformative because of risks in implementing PPPs. CSFs from the questionnaire were then compared to those Principal Component analyses.

Background Information on Focus Panel Respondents

Respondents demonstrated that they held management positions and with ample experience on the subject of PPPs. Ten of the participants had an average age of forty-five years. The results in Table 2 show the composition of the interviewees holding high or middle-level positions in their organisations. The level of experience for the interviewees varied from two to fourteen years.

Table 2: Composition of the Focus Panel

Organisation	Positions held	Number interviewed
Private Sector consultants	Managing Partners	5
Public institution	Senior managers	4
Private sector	Chief Executive Officer	1

To identify vital common features, results from the interviews, questionnaire survey and Rotated Component matrix were evaluated together.

Project Critical Success Factors

PPP implementation in Zambia was critical, and Interviewees were asked if the PPP law had been instrumental to the process. Table 3 below shows a summary of the results CSFs.

Table 3: PPP Critical Success Factors

Interview	Survey	Rotated Component Matrix
(a) *Good working structure* (60%)*; (b) Delegate work to the private sector (20%); (c) **Clarity of policy** (15%); (d) Publicity or sensitisation of PPPs (5%).	*(a) Saving time in project delivery* (9.82%) *(b)* **The benefit to local economic development** (9.78%) *(c)Transparent procurement process* (6.21%)*(second last on list)	*(a) Strong and good private consortium* (0.504)* *(b) Transparent procurement process* (0.593)*

The results show a varied matrix of what CSF was considered to ensure the success of PPPs in Zambia. Italicised factors have been listed by writers such as Akintoye (2009) and Li (2003) as vital components throughout the entire PPP negotiation process to implement the project. Rwelamila *et al.* (2003), had shown the necessity of such factors if PPPs are to succeed on the African continent. Frequently, protracted negotiation processes are a common feature and, in many instances, had derailed implementation (Zulu and Muleya, 2009).

Risk Identification in Achieving PPP Project Success

Respondents were asked to indicate risk identification methods to be used in achieving PPP project success. Table 4 below shows the results.

Table 4: PPP Risk Identification Factors

Interview	Survey	Rotated Component Matrix
Experience (85%) Feasibility study (15%)	*Experience* (11.00%) Site visit (10.77%)	*Experience* (0.752) Data bases (0.752)

Forty-nine per cent of the survey respondents stated not having any PPP experience despite their many years in the construction industry. Only 42 per cent of the survey respondents had a bare experience of PPPs. This suggested that the subject of PPPs is largely unknown. PPPs are a highly complex type of contract that must transcend basic construction pacts (Yescombe, 2007). As much as PPPs can drive development through private finances, construction professionals must know how they work. The handling of 'risk' is the centrepiece of PPPs and must not be done where there is an 'absence of a risk management culture' (Zulu and Muleya, 2009). Frequently, the financial structure for PPP incorporates debt profiles, cover ratios and equity return (Toumi *et al.,* 2018).

Financial Decision-making Tools Critical for the Success of PPP Projects

Interviewees were asked to indicate which financial decision-making tools had been used on implemented PPP projects. A total number of six tools were identified as:

(a) Financial appraisals (40%);
(b) Cash flow analysis (20%);
(c) Profit and loss analysis (10%);
(d) Development concept (10%);
(e) Cost-benefit analysis (10%); and
(f) Life cycle costing (10%).

Respondents preferred 'financial appraisals' for assessing PPPs, which received a response of 40 per cent. Although cash flow analysis (with 20% response) followed, it was observed that PPP consultants preferred a combination of assessment tools upon further inquiry. It was further observed that the tools were fairly basic in examining the financial worthiness of PPP projects. However, the tools assessment accuracy for projects was of grave concern (Yescombe, 2007).

Spearman's Rho for Accuracy of Methods

In seeking to assess the accuracy of the financial tools, Spearman's rho was used as it gives the comparative intensity of a connection. There is no resulting straight evaluation between 0 + 1. A proportional reduction in error (PRE) is calculated when the rho value is squared. Using the following equation (Healey, 2009):

$$r_s = 1 - \frac{6 \sum D^2}{N(N^2-1)}$$

Table 5: Spearman's rho Calculation for Financial Decision-making Tools

Financial tools	Mean	Field means ranking	Focus group rating	Focus group ranking	D	D^2
Payback period of project	4.30	1	5	1.5	-0.5	0.25
Internal rate of return	3.98	2.5	4	3	-0.5	0.25
Life cycle costing	3.98	2.5	3	4.5	-2	4
Discounted cash flow	3.74	4	3	4.5	-0.5	0.25
Net present value	3.62	5	5	1.5	3.5	12.25
					$\sum D^2 = 0$	$\sum D^2 = 17$

Spearman's rho value=0.15

Using the focus group's means and accompanying field mean ranking, a Spearman's rho value of 0.15 was obtained. A predicted reduction in error of 2 per cent is obtained when 0.0225 is squared for using financing tools as they would guarantee 98 per cent accuracy of PPP estimates done (Walsh, 2003).

Project success through PPPs

Respondents were asked why PPPs would be necessary for projects to succeed. Results are as seen in Table 6.

Table 6: PPP project success

Interview	Survey	Rotated Component Matrix
As budgeted (70%) Development addition (30%)	Employment creation (8.58%) Quality buildings (8.53%) *Technology transfer* (8.49%	*Satisfy stakeholders* (0.523) Value for money (0.660) Development addition (0.711)

Again, what constitutes PPP success is a matter of debate. Stakeholder satisfaction must ensure that the project is (Akintoye, 2009, Mukalula and Muya, 2014):

(a) viable;

(b) affordable; and

(c) bankable.

These are the features that financing institutions look for in surveying the financial perspectives of projects. Profitability and risk are positively correlated and assure lenders of a return on capital invested (Smith *et al.,*2014).

CONCLUSION

This paper demonstrates the complexities of PPP projects due to risks affecting projects and the needed transformative CSFs for success. The change must affect the financial knowledge base of construction professionals. Right at the onset f the project, financial risks must be carefully considered by the concessionaire. Lack of disclosure of accurate information about the project is a risk that those wishing to use the PPP development model must contend with. *Projects will only register a healthy net present value and payback period if would-be investors provide true information.* Only then, would it be guaranteed for taxpayers not to be over-burdened with unjustifiable lengthy concession periods, in as much as extended concessions would maximise profits to the investor but are potentially detrimental to 'beneficiaries' of PPP projects.

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