

Identification of Barriers to Public Private Partnerships Implementation in Developing Countries

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Abstract

Public Private Partnerships (PPPs) have become an increasingly important method of delivering infrastructure projects in the last decade and are now used in over 40 countries. The adoption and implementation of PPPs in less mature economies can pose different challenges to that of mature economies. Thus, successful PPPs are designed with careful attention to the context or the enabling environment within which the partnerships will be implemented. The growth of PPPs has in many countries increased the availability of resources, the efficiency, and sustainability of public services especially in the fields of transport, energy, water, telecommunications, and health. In developing countries a number of barriers influencing the implementation of PPPs caused diminishing interests of both local and foreign private investors. The purpose of this paper is to identify the barriers in implementing PPPs in developing countries. The paper adopted past research studies and documentary reports as a means of identifying the barriers to PPPs implementation. Thus, the identified barriers are subjected to a pilot survey. The barriers are categorized by using SLEEPT approach, that includes; social, legal, economic, environmental, political, and technological factors. The paper identified technological barriers, economic barriers, and social barriers as the most influential barriers to PPPs project implementation in developing countries. Therefore, recognition of the barriers and its elimination by the stakeholders in PPPs will allow the partnerships to function effectively and ensuring successful implementation of present and future PPPs.

Keywords: Barriers, implementation, infrastructure, PPPs, stakeholders

1. Introduction

In an increasingly competitive global environment, governments around the world are focusing on new ways to finance projects, build infrastructure, and deliver services (CCPPP, 2007). PPP is being considered and becoming the preferred method for delivering public infrastructure projects throughout the world (Gunnigan and Rajput, 2010) as exemplified by the fact that over 40 countries have adopted PPPs (RICS, 2012). PPP is a tool to bring together the strengths of both public and private sectors. Akintoye and Liyanage, (2011) assert that PPPs are commonly used to accelerate economic growth, development and infrastructure delivery, and to achieve quality service delivery and good governance. Despite the increasing adoptions of PPP based procurement systems all over the world, many countries and regions are still experiencing a number of barriers against its successful implementation particularly developing countries, thereby slow down the implementation and even diminish the interests of private sector entities.

Therefore, it is required to identify the barriers for implementing PPPs in details to prevent the constraints from appearing in the future PPPs. It is important for the governments and other stakeholders to recognise likely barriers in the implementation of PPPs and to build in strategies to cope with the constraints to allow the partnership to function effectively. This formed the basis of this paper with a view to identifying the barriers to PPPs implementation in developing countries. It is against this background, that the theory of constraints developed by Goldratt in the early 1980s is used to underpin the study. The theoretical concept is summarised as: every system must have at least one constraint; and the existence of constraints represent opportunities for improvement (Goldratt, 1988). However, a constraint is defined by Goldratt, (1988, p. 453), as “anything that limits a system from achieving higher performance versus its goal”. Thus, constraints can involve people, information, regulations, policies, laws, procedures, supplies, equipment to mention a few (Dettmer, 2000). The theory involves: identify the constraints; exploit the constraints; evaluate performance among others (Goldratt, 1990). Since 1980s the theoretical body of knowledge has grown significantly and has been successfully applied in different fields ranging from manufacturing, accounting/finance to construction industry particularly in project management.

2. The concept of Public Private Partnerships

The concept of using private capital to provide public facilities has existed for centuries in countries such as UK, US, France, Spain among others (Howes and Robinson, 2005; Yescombe, 2007). Thus, in recent time many countries have developed PPP programmes for provision of public infrastructure facilities and services. This has resulted to significant increase in the volume and number of PPP projects across the globe since 1990s. Prior researchers and a number of professional bodies and organisations have defined PPPs in various forms. This has led Li and Akintoye, (2003) to state that there is no unified definition of PPP but all definitions have common characteristics. Yescombe, (2007) asserts that PPPs must be seen within the overall context of the public sector reform which encourages contracting-out public services to the private sector. Therefore, the arrangement of PPP is structured in a way that it is intended to provide greater flexibility to achieve the provision on public infrastructure objectives by altering traditional public and private sector roles with a view to taking better advantage of the skills and resources that private sector firms can provide.

However, Yescombe, (2007) states that there are a number of alternative names for PPPs as follows: Private Finance Initiative (PFI), a term originating in Britain, and now used in Japan and Malaysia; Private Participation in Infrastructure (PPI), a term coined by the World Bank, however it is little used outside the development-financing sector; P3/3Ps/P³, a term used in North America; Private-Sector Participation (PSP) a term also used in the development-financing sector; and Privately-Financed Projects (PFP) a term used in Australia. Therefore, there are various PPP models that are used across different countries. This includes:

- **Build-Operate-Transfer (BOT):** This model combines the responsibilities of Build-Transfer with those of facility operations and maintenance by a private sector partner. At the expiration of concessionary period all operating rights and maintenance responsibilities revert to the government (Howes and Robinson, 2005; Deloitte, 2007).
- **Design-Build-Finance-Maintain (DBFM):** The private sector designs, builds and finances an asset and provides facility management or maintenance services under a long-term agreement (CCPPP 2007).
- **Design-Build-Finance-Maintain-Operate (DBFMO):** The private sector designs, builds, finances, and provides facility management services as well as operations under a long-term agreement (CCPPP 2007).
- **Build-Own-Operate (BOO):** The private sector or concessionaire finance, builds, own and operates a facility without the transfer of ownership to the public client. (Howes and Robinson, 2005).
- **Divestiture:** Under this model, the private sector takes ownership over all assets and has control over all investment, maintenance and operations decisions subject to regulatory oversight. (Deloitte, 2007).

However, Deloitte (2007) further identifies a hybrid PPP model that includes alliancing, bundling, integrator, and joint venture. Table 1 presents a sectoral classification of PPP models adopted in different countries.

Table 1: PPP Models adopted in different countries in various sectors

Sector	Country	PPP models
Transport	Australia, Canada, France, Greece, Ireland, Italy, New Zealand, Spain, UK, Russia, US, Turkey, Singapore, China, India, Sri Lanka, Brazil, Argentina, Chile, Mexico, Peru, South Africa, Nigeria, Zimbabwe, Togo	DBOM, BOT, Divestiture, BROT, ROT, BOO, BLT
Water, wastewater, and Sewerage	Australia, France, Ireland, UK, US, Canada, Turkey, Singapore, India, China, Malaysia, Indonesia, Brazil, Mexico, Peru, Algeria	DBO, BOT, BROT, ROT, DBOO, Divestiture
Education	Australia, Netherlands, UK, Ireland, India	DBO, DBOM, BOOT, DBFO/M, Integrator
Housing	Netherlands, UK, Ireland	DBFM, Joint venture

Sector	Country	PPP models
Hospitals	Australia, Canada, Portugal, South Africa, UK	BOO, BOOT, Integrator
Defence	Australia, Germany, UK, US	DBOM, BOO, BOOT, Alliance, Joint venture
Prisons	Australia, France, Germany, UK, US	DBO, BOO
Energy	Turkey, Bulgaria, Romania, Ukraine, China, Singapore, Bangladesh, India, Sri Lanka, Pakistan, Vietnam, Thailand, Philippines, Malaysia, Indonesia, Argentina, Brazil, Botswana, Kenya, Tanzania, Zambia, Rwanda	BOT, BOO, BLT, ROT, Divestiture
Telecommunications	Singapore, Philippines, Thailand, India, Malaysia, Indonesia, Ukraine, Russia, Turkey, Brazil	Joint venture, BOT, Divestiture

(Source: Deloitte, 2007; World Bank 2012)

Table 1 indicates the governments in many countries ranging from mature economies to less mature economies have found that partnership with the private sector is an attractive alternative to increase and improve the supply of public infrastructure facilities.

2.1 Barriers of PPPs

Despite the huge recognition of PPPs and its increasing usage in infrastructure development, the experience of both the public and private sector with PPP has not always been positive (Kwak et al. 2009). A number of PPP projects are either held up or terminated particularly in developing countries. This has triggered previous researchers to conduct studies on barriers to PPPs implementation across the globe. Table 2 reveals a selection of previous researchers' findings on barriers to PPPs implementation.

Table 2: Examples of identified barriers to PPPs implementation by few previous research studies

S/n	Authors and Year	Findings
i	Li et al. (2005)	Lack of suitable skills and experience; lengthy bidding and negotiation process; lack of competition; and lack of well-established legal framework.
ii	Zhang (2005)	Social, political, and legal risks; unfavourable economic and commercial conditions; inefficient public procurement frameworks; lack of mature financing engineering techniques; public sector related problems (e.g., inexperienced government and lack of understanding of PPPs); and private sector related problems (e.g., most people, including investment banks still prefer traditional procurement routes).
iii	Chan et al. (2006)	Lack of suitable skills and experience; and lengthy bidding and negotiation process.
iv	El-Gohary et al. (2006)	Public opposition.
v	Corbett and Smith (2006)	Lack of competition; lack of suitable skills and experience; lack of innovations in design; and lack of flexibility.

S/n	Authors and Year	Findings
vi	Chan et al. (2010)	Lengthy delays in negotiation; lack of experience and appropriate skills; and lengthy delays because of political debate.
vii	KPMG (2010)	Barrier to competition and procurement inefficiencies.

However, none of the previous researchers had fully categorized barriers to PPPs implementation by using PEST (Political, Economic, Social, and Technological) approach or its variants, such as SLEEPT (Social, Legal, Economic, Environmental, Political, and Technological), PESTLE (Political, Economic, Social, Technological, Legal, and Environmental) among others. It was only Zhang, (2005) that partially categorised his findings as social, political, and legal risks among others as a barrier to PPPs implementation. Thus, it is important to categorize barriers to PPPs implementation by using SLEEPT approach, because it is a very useful and widely used tool that helps to understand wider business environment, and enables business leaders worldwide to build their vision of the future. Also, Kotler (1998) claims that PESTLE or SLEEPT is a useful strategic tool for understanding market growth or decline, business position, potential and direction for operations. However, SLEEPT approach has not been adopted in categorizing barriers to PPPs implementation but it was not new in PPPs research studies, for instance Gunnigan and Rajput, (2010) adopted SLEEPT approach to compare the complexities of implementing PPP projects in Europe and India. Also, Eaton et al. (2007) used SLEEPT approach to examine the suitability of a UK PFI model within the Czech Republic, the republic of Ireland, Palestine (Gaza-West Bank), Portugal and Turkey. Therefore, understanding and enhancing knowledge of PPPs continue to be a matter of significance and importance. Thus, this paper becomes imperative with a view to identifying and categorizing the barriers to PPPs implementation by using SLEEPT approach in order to provide a holistic approach to PPPs environment.

3. Research methodology

This paper adopted literature review, documentary evidence, and pilot survey as part of a broader study in developing a PPP stakeholder framework. A comprehensive literature review and documentary evidence enabled the identification of fifty seven barriers to the implementation of PPPs in developing countries. The identified barriers were categorized by using SLEEPT approach (Social, Legal, Economic, Environmental, Political, and Technological). However, the identified and categorized barriers were subjected to a pilot survey with a view to testing its applicability in Nigeria. This is supported by Fellows and Liu (2008) who assert that questionnaires should initially be piloted, i.e. completed by a small sample of respondents. Thus, face-to-face pilot survey was conducted on six respondents that were purposively selected, based on their vast involvement and experience in PPP infrastructure projects in Nigeria. The respondents included primary stakeholders in PPPs comprising of public authorities (MDAs- Ministries, Department, and Agencies), local lenders/ local banks, concessionaires, and consultants. The designed pilot questionnaire was a multiple-choice type on a five-point likert scale. The preliminary section of the questionnaire gathered background information on

respondent profiles while the other parts were structured in relation to the purpose of the paper. A reliability test was also conducted on the research instrument using Cronbach's alpha, Spearman-Brown coefficient, and Guttman split-half coefficient. This is supported by Garson (2009) who argues that more than one reliability coefficients may be used in a single research setting. Therefore, the reliability coefficients values of Cronbach's alpha (0.948), Spearman-Brown's split half coefficient (0.968), and Guttman's split half coefficient (0.967) proved that the instrument used for the pilot survey is reliable. The data collected for the study were subsequently analysed using descriptive statistics.

4. Findings

The study's outcome is based on a pilot study. Thus, table 4.1 reveals the demographic characteristics of the respondents. Out of six respondents, two belong to public authorities (MDAs i.e. Ministries, Department, and Agencies), two to local lender/ local Bank, one to concessionaire, and one to consultant. Five of respondents have either a bachelor's or master's degree and one respondent has higher national diploma. This indicates that the respondents are mature, educated and prudent to give their consents without prejudice in participating in the pilot survey. The years of industrial experience indicates that three of the respondents have between 11-15 years of industrial experience, one respondent has over 20 years, one has between 6-10 years, and one also has between 0-5 years of industrial experience. Thus, the approximate average years of respondents' industrial experience is calculated to be 12 years. This shows that the respondents have adequate industrial experience to supply reliable information. However, respondents involvement in PPPs infrastructure project indicates that; two respondents were involved in over 6 PPP infrastructure projects, one respondent involved between 5-6 number, one respondent involved between 3-4 number, and two respondents involved between 1-2 number of PPP infrastructure projects. In overall four out six respondents representing approximate 67% were involved in over 3-4 number of different PPP infrastructure projects. This shows that the respondents have vast knowledge and experience in PPP infrastructure projects. It can be deduced that the information supplied on PPP infrastructure projects by these respondents are reliable and dependable.

Table 4.1: Demographic characteristics of respondents

Item	Category	Frequency (n)	Percentage (%)
Stakeholder's category	Public Sector Authorities (MDAs)	2	33.33
	Concessionaires	1	16.67
	Local Lenders/ Local Banks	2	33.33
	Consultants	1	16.67
	Total		6
Highest academic qualification	HND	1	16.67

Item	Category	Frequency (n)	Percentage (%)
	BSc	2	33.33
	MSc	3	50.00
	PhD	-	-
	Total	6	100.00
Years of industrial experience	0 - 5 years	1	16.67
	6 - 10 years	1	16.67
	11 - 15 years	3	50.00
	16 - 20 years	-	-
	Above 20 years	1	16.66
	Total	6	100.0
Have you been involved in PPP procurement system	Yes	6	100.00
	No	0	00.00
	Total	6	100.00
Number of PPP project involved- in	1 – 2	2	40.00
	3 – 4	1	20.00
	5 – 6	1	20.00
	Above 6	2	40.00
	Total	6	100.0

Table 4.2 reveals the initial identifications of barriers to PPPs implementation and are based on a pilot study. The table indicates descriptive values of categorized barriers by using SLEEPT approach (Social, Legal, Economic, Environmental, Political, and Technological). The table reveals that technological barrier has the highest mean value ranking of 32.83. This indicated that technological barrier was the most important barrier to PPPs project implementation in developing countries. However, technological barrier has to do with PPPs project delivery; this includes lack of experience and expertise in both public and private sector, shortage of professionals to handle PPP projects, unavailability of large construction companies to deliver PPP projects in some developing countries among others. These led some developing countries to strongly depend on the experience and expertise of PPP professionals, foreign construction companies from mature economies. Economic barrier with the mean value ranking of 31.83 was second most barriers to PPPs project implementation. This has to do with the perceptions of developing countries as high risk economy by foreign investors, macroeconomic fluctuations in currency, inability of local institutions to provide long term financing among others.

Social barrier with the mean value ranking of 27.17 was third in the table as barrier to PPPs project implementation in developing countries. This includes public opposition/public resistance, cultural impediments include behaviours of people towards PPPs, societal discontent against the private sector among others. Social barrier has responsible for cancellation and delays of a number of PPPs project in developing countries. Environmental barrier with the mean value

ranking of 19.33 was the least barrier to PPPs project implementation, this is because most governments in developing countries have realised the importance of PPPs in delivering infrastructure. Thus, most governments are concentrating in providing an enabling environment and favourable investment to make PPPs attractive to investors.

Table 4.2: Descriptive values of barriers categorized using SLEEPT

Categorized Barriers	N Statistic	Minimum Statistic	Maximum Statistic	Sum Statistic	Mean		Std. Deviation Statistic
					Statistic	Std. Error	
Social	6	0	43	163	27.17	5.941	14.552
Legal	6	22	34	160	26.67	1.783	4.367
Economic	6	25	38	191	31.83	1.815	4.446
Environmental	6	14	23	116	19.33	1.202	2.944
Political	6	23	32	162	27.00	1.291	3.162
Technological	6	18	44	197	32.83	3.516	8.612

The percentage representation of categorized barriers using mean value is shown in figure 1. Thus, the figure reveals that technological barrier has the higher percentage. This shows that technological barrier is the most barriers affecting PPPs project implementation in developing countries followed by economic barrier, social barrier, legal barrier, political barrier, and environmental barrier respectively.

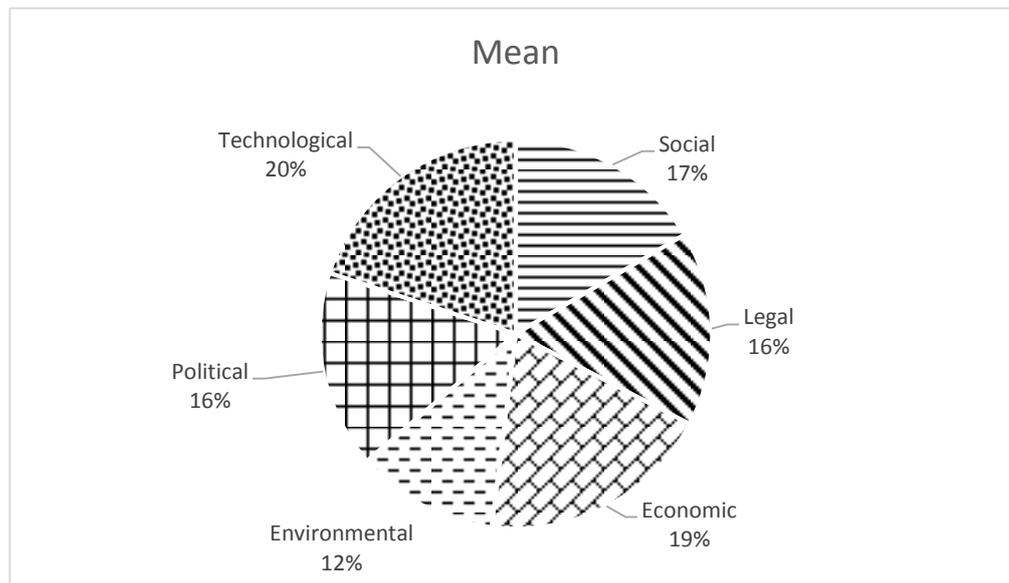


Figure 1: Percentage representation of categorized barriers

5. Discussion of findings

The findings are initial identifications of barriers and are based on a pilot study. The paper identified fifty seven barriers to PPPs project implementation in developing countries. Thus, the identified barriers were categorized as follows:

Social barriers: The paper revealed social barriers, including public opposition, cultural impediments, societal discontent against the private sector, public resentment due to tariff increases, lack of confidence and mistrust in PPPs among others which is similar with Gunnigan and Rajput (2010) that social and cultural norms within a nation are significantly alter the behaviours of people, and ultimately affecting the PPPs operation and structures, and public opposition has led to many cancellations, both before and after the concession award. The finding is in contrast with Gibson and Davies, (2008) that identified internal partnership relationships in mature economies. Therefore, it becomes necessary that all the stakeholders' for instance, primary stakeholders in PPPs implementation in developing countries to identify the public interest goals before embarking on any PPPs project.

Legal barriers: The paper identified weak /poor enabling policies, poor regulatory frameworks and enforcement, weak institutional capacity and PPPs strategy, weak judicial framework/weak judiciary for resolving PPP disputes among others as legal barriers to PPPs implementation in less mature economies. This finding is similar with Li et al., (2005) that identified lack of well-established legal framework as one of barriers to PPPs project implementation. This indicates that some governments in developing countries undertake PPPs without overall PPP policies, which leads to ill-defined goals and a greater likelihood of problems with the projects implementation.

Economic barriers: Perceptions of developing countries as high risk economies by foreign investors, inability of local institutions to provide long term financing, difficulty in obtaining foreign exchange/foreign exchange risk, inadequate domestic capital markets among others were identified as economic barriers to PPPs implementation in developing countries. This finding is in contrast with Corbett and Smith (2006) and Chan et al. (2006) that identified high transaction costs and high bidding costs as barriers to PPPs project implementation. Therefore, it necessary for governments in developing countries to create stable economic and financial supports with a view to inducing confidence in both local and foreign PPP investors.

Environmental barriers: The paper identified environmental barriers as follows; land acquisition problems, lack of coordination between national and regional governments, lack of transparency and accountability, accusations of corruption and corrupt tendencies among others. The finding is in contrast with Li et al. (2005) and KPMG (2010) that identified lack of competition as barrier to PPPs in mature economies. Thus, it becomes imperative for governments in developing countries to create an enabling environment and favourable investment to make PPPs attractive.

Political barriers: political renegeing, politicization of the concessions, lengthy delays due to political debate, lack of strong political commitment for PPPs among others were identified as

political barriers which is similar with Kwak et al. (2009) that inadequate involvement and incapability of governments to manage PPP projects lead to project failures in developing countries. The finding is in contrast with Gibson and Davies, (2008) that identified local political opposition as a barrier to PPPs in mature economies.

Technological barriers: The paper identified technological barriers as lack of experience and expertise in public sector and private investors, inconsistent risk assessment and management, shortage of professionals to handle PPP projects, provision of incomprehensive up-front project information by public sector among others. These findings are similar with Li et al., (2005) and Mahalingam (2010) that lack of suitable skills and experience, and lack of project preparation capacity on the part of the public sector among others are barriers to PPPs project implementation. This shows that developing countries rely on mature economies professionals' expertise and skills to develop and structure their PPPs. However, the paper identified more barriers to PPPs project implementation in developing countries which is in contrast with KPMG (2010) that identified competition and procurement inefficiencies as barrier to PPPs in Australia.

6. Conclusions

Understanding and enhancing knowledge of PPPs continue to be a matter of significance and importance. It is on this note that this paper identified and categorized into six the barriers to PPPs implementation in developing countries. This includes; social barriers, legal barriers, economic barriers, environmental barriers, political barriers, and technological barriers. However, the paper identified technological barrier followed by economic barrier and social barrier respectively as most significant barriers to PPPs project implementation in developing countries, while environmental barrier was the least. The paper concludes that there are more barriers to PPPs project implementation in developing countries. This has made the PPPs project implementation in developing countries to be characterised with controversies, cancellations, delays, and renegotiations. The limitations of this paper includes the using of a pilot survey, this indicates that this is not a conclusive study but a study that will lead to a broader study. But the findings of the pilot were significant and interesting, and show good potential for the broader scale study. Having identified and categorized the barriers to PPPs project implementation in developing countries, it will help the stakeholders involved in PPPs practice to build in strategies to cope with the barriers with a view to safeguarding the present and future PPPs implementation. Therefore, the huge recognition of the barriers and the strategies to eliminate the barriers by the stakeholders in PPPs will allow the partnership to function effectively and ensuring successful implementation of PPPs in developing countries.

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