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## Implementing public–private partnership (PPP) policy for public construction projects in Ghana: critical success factors and policy implications

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### ABSTRACT

Public–private partnership (PPP) is considered an innovative procurement approach which offers good prospects for the future of the global construction industry. However, since the introduction of PPP in the Ghanaian construction industry (GCI) in 2004, the factors contributing to its successful implementation have not yet been fully explored. This has made many local practitioners very reluctant to procure construction PPP projects. This paper aims to explore the critical success factors (CSFs) for construction PPPs in Ghana by reviewing and analysing two successful PPP projects: the Kojokrom Market Development Project and the Asutsuare Water Treatment Plant Project. The analysis reveals five CSFs for construction PPP projects in Ghana; these are: government commitment and support, strong community support and relationship, openness and constant communication, project profitability and capable private partner. The experiences in the case studies are further compared with global experience. Practical and management implications are provided to facilitate the implementation of PPP policy in GCI. It is expected that the research outputs would inform policy makers and local practitioners on the appropriate measures to adopt when engaging in future projects. Future research should adopt empirical surveys to make objective generalization and comparison with other countries.

### KEYWORDS

public–private partnership;  
critical success factors;  
construction projects; case  
study; Ghana

### Introduction

The construction industry plays a critical role in a country's infrastructure growth and development. The industry contributes between 10% and 30% of a country's gross domestic product (GDP) (Hampson et al. 2014) and provides a wide range of employment and job opportunities (Hillebrandt 2000). However, the prospects and future of the industry over the next decade would depend on the re-engineering and restructuring of the procurement approach used in the industry (Angeles & Walker 2000). This implies that a more innovative method needs to be adopted in its procurement process. The innovative procurement systems identified include public–private partnerships (PPP), privately financed projects and build–own–operate transfer (Jefferies 2006; Lu et al. 2013).

During the last couple of decades, the PPP concept has gained considerable attention and it has rapidly grown globally (Dulaimi et al. 2010; Regan et al. 2010). This procurement method is being adopted in the construction industry by many governments for several reasons. Among the key reasons are creativity and innovation, public sector budgetary constraints and risk sharing (Chan et al. 2009; Cheung et al. 2010; Ismail &

Azzahra, 2014; Osei-Kyei et al. 2014). However, it is worth noting that not all governments have been successful with the policy implementation. Specifically countries that have extensively examined and explored the success factors of the policy implementation are the ones that have gained much from the opportunities and benefits associated with this procurement method (Osei-Kyei & Chan, 2015a). Countries with few lessons to draw on have not adequately benefited from the implementation of the PPP policy. Therefore, there is the need to continuously assess and evaluate the performance of past projects in order to guide the implementation of future projects (Jefferies et al. 2002; Liu et al. 2014).

Like other governments, the Government of Ghana (GoG) has also shown great interest in the PPP concept, particularly for construction projects since 2004 (MOFEP 2011). Some attempts that have been made by the government in recent years include the introduction of a policy guideline and the engagement of international experts (Amoako 2011; Africa PPP n.d.). However, research studies (e.g. Li et al. 2005; Cheung et al. 2012; Liu et al. 2014) indicate that the success of PPP is influenced by certain key factors and that it is important for these critical factors to be explored within the local

context. Importantly, to the best of the authors' knowledge, the CSFs for implementing PPP policy in the Ghanaian construction industry (GCI) have not yet been properly examined. It is therefore not surprising that since 2004, few construction PPP projects have been initiated with many of the projects failing to proceed successfully (World Bank 2012). The current paper, which is part of a broad research study which aims to develop a best practice framework for PPP implementation in Ghana drawing on international experience, explores the factors that are critical to construction PPP projects' success by analysing two high-profile projects.

It is hoped that the experiences and lessons presented in this paper will inform policy makers and practitioners (public and private) on how best construction projects could be procured through the PPP approach.

### Development and current implementation status of construction PPPs in Ghana

The private sector participation in delivering public services is not completely new in Ghana. Essentially, since the early 1990s the private sector has been actively involved in public service delivery particularly for management of services in the energy, telecom, sanitation, water and sewage sectors (Awortwi 2004; Fuest & Haffner 2007). This implies that over the past decades, the government has been outsourcing public services in the above-mentioned sectors (Abubakari et al. 2013; Asare & Frimpong 2013). Figure 1 presents private sector involvement in Ghana's public infrastructure and services.

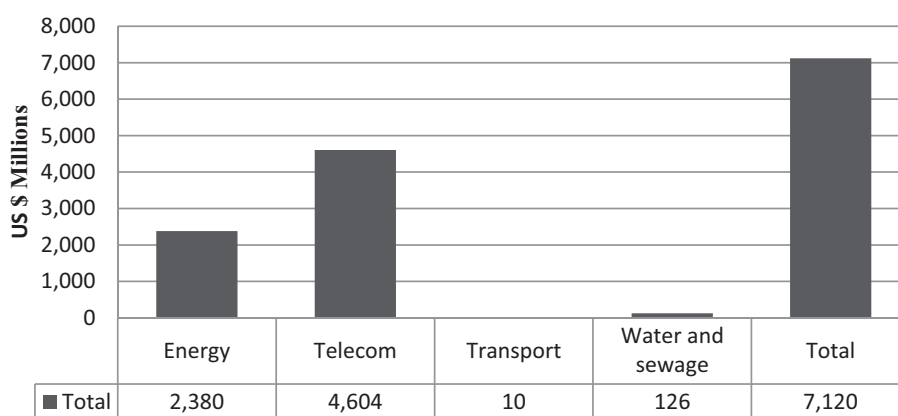
Basically, with respect to physical public infrastructure (i.e. public construction projects) including railways, ports, roads, public hospitals, public schools and other social and economic facilities, the private sector's involvement has been rather low. Over the years, the government has been the sole provider of such public

facilities which are chiefly financed by donors, international financial institutions and budgetary allocations (World Bank 2011). Considering the huge budgetary constraints and the positive effects of physical infrastructure development and growth of the construction industry on the country's economy, in recent years, the government has made attempts to involve the private sector in the delivery of public construction projects (World Bank 2012; MOFEP 2014b).

PPP became a national policy in 2004, with the launch of a policy guideline through the then Ministry for Private Sector Development and Presidential Special Initiatives (MOFEP 2011). The GoG expected the policy guideline to assist in the leveraging of private sector's capital and expertise in providing public infrastructure, especially for construction projects, which for the past two decades have received little private sector participation (Osei-Kyei et al. 2014). However, this failed to be operationalized primarily due to the lack of understanding on how the new policy could be successfully implemented for construction works (World Bank 2012).

In 2011, the newly elected government launched another national policy guideline for PPPs through the Ministry of Finance and Economic Planning (MOFEP) (World Bank 2011). The new PPP policy guideline was a development of the policy introduced by the previous government. The Public Investment Division (PID) unit was then set up to front the implementation of the policy. Specifically, PID's role is to provide assistance to contracting authorities and also develop a regulatory and institutional framework for PPP (World Bank 2011). Currently a draft PPP bill is under consideration in Parliament and it is hoped that the drafted bill when passed would increase the confidence of the private sector on delivering public projects in the country.

Considering the slow pace at which PPP is developing in GCI, there is no comprehensive database for



**Figure 1.** Total amount of private sector investments in Ghana's infrastructure from 1990 to 2013 (US\$ million). Source: Data from World Bank (2014).

**Table 1.** Some major construction PPP projects initiated and implemented in Ghana.

Sector Ministry	Project name	Progress*
Roads and Highways	Upgrading Accra-Tema Motorway project	Ongoing negotiations
Transport	Accra-Takoradi Highway Rehabilitation & Dualization	Ongoing feasibility studies
	Takoradi Port Rehabilitation & Expansion	Ongoing feasibility studies
	Eastern Rail Way line	Ongoing feasibility studies
	Expansion of Kotoka International Airport	Ongoing feasibility studies
Water Resources, Works and Housing	Boankra Inland Port/Eastern Railway Line Project	Ongoing feasibility studies
	Asutsuare Bulk Water Treatment Plant	Construction stage
	Accra Reverse Osmosis Desalination Plant	Operational stage
	Ghana National Housing Projects	Failed
Youth and Sports	National Sports College Facilities	Ongoing feasibility studies
Trade and Industry	Local Markets Models	Ongoing feasibility studies
Health	Korle-Bu Teaching Hospital Diagnostics Services	Procurement stage
	Urology Centre of Excellence at KBTH	Ongoing feasibility studies
Defence	Security Exchange Commission New Building & Facilities.	Ongoing feasibility studies
Local Government and Rural Development	Upgrading of Martey Tsuru (Ledzokuku Krowor Municipal Assembly (LEKMA)	Procurement stage
	Kojokrom Market Shed Project	Completed
	Offinsoman Rural Bank Project	Completed

\*Progress of projects are based on the time this study was undertaken.

Sources: MOFEP (2014a, 2014b); World Bank (2012); Shendy (2013, 2014).

construction PPPs as realized in the well-developed PPP countries. However a list of some major construction PPP projects is compiled and presented in Table 1.

### Review of literature on the critical success factors for PPPs

The success of a PPP project is often determined based on the achievement of key parties' objectives (Yuan et al. 2009). Parties in PPP arrangements often have different objectives; while the private investor aims to minimize risk and expects high returns on investment; the public partner rather seeks to maximize social benefits. In this regard, when these objectives by the project parties are achieved, a PPP project could be deemed successful (Meng et al. 2011). Nevertheless, the success of PPP projects must be evaluated throughout the project life cycle (Liu et al. 2014).

CSFs have been described as the fundamental issues which are inherent in a project and must be maintained in order for team work to take place in an effective and efficient manner (Rowlinson 1999). As emphasized by Lu et al. (2008), no definite procedure has been developed to identify CSFs, rather different systematic procedures including opinion surveys, interviews and case studies have been adopted (Osei-Kyei & Chan 2015a). For instance, in the UK, Li et al. (2005) explored the CSFs for construction PFI/PPP projects by means of a questionnaire survey of practitioners. They identified that a strong and good private consortium, available financial market and appropriate risk allocation are the most important CSFs in the UK's PFI.

Jefferies (2006) also identified streamlining of the approval process, a clear project brief and client outcomes, competition during the tendering process, as the major CSFs in the Australian Sydney Superdome project.

Moreover, Chan et al. (2010), adopting the questionnaire template developed by Li et al. (2005), identified five principal factors for PPP success in China. These are stable economic environment, shared responsibility between public and private sectors, transparent and efficient procurement process, stable political and social environment and judicious government control.

Additionally, adopting the same questionnaire template developed by Li et al. (2005), Cheung et al. (2012) identified the five most important CSFs for PPPs in Hong Kong, where two of the five CSFs had different importance levels between the UK and Hong Kong. The factors with varied perceptions are favourable legal framework and stable macroeconomic conditions.

Similarly, Ismail (2013), employing the questionnaire template used by Chan et al. (2010) and Cheung et al. (2012), identified good governance, commitment and responsibility of public and private sectors, favourable legal framework, sound economic policy and available financial markets as the most important CSFs for PPPs in Malaysia.

Babatunde et al. (2012), also through an empirical questionnaire survey, identified availability of suitable financial markets, sound economic policy and good governance as the three most important CSFs in Nigeria's PPP implementation. However, Dulaimi et al. (2010), through analyses of three case studies in UAE, identified political support as a major contributing factor to the success of the case studies, followed by a strong private consortium. Dulaimi et al.'s (2010) assertion is found to be contrary to the CSFs identified by Babatunde et al. (2012), where political support and strong consortium were found to be of rather low importance in Nigeria's PPP.

In the Lebanese context, Jamali (2004) identified trust, openness and fairness as the underlying CSFs for

PPPs in Lebanon, whereas Askar and Gab-Allah (2002), from the Egyptian perspective, identified extremely different CSFs from Jamali (2004). By analyzing transport BOT projects, Askar and Gab-Allah (2002) rather identified selecting the right partner, competitive financial proposal and special features of the bid as the underlying CSFs for PPPs in Egypt.

As revealed in the literature reviewed above, CSFs for PPPs vary among jurisdictions even where same questionnaire template is employed. Notwithstanding, some common CSFs still prevail; these include appropriate risk allocation and sharing (Li et al. 2005; Chan et al. 2010; Babatunde et al. 2012; Cheung et al. 2012). From the review, it is also realized that because CSFs vary among jurisdictions, it is therefore necessary for the CSFs for PPPs in Ghana to be explored in order to allow for comparison with other countries. Currently, such study is lacking in the literature and this study seeks to bridge this knowledge gap.

## Research methodology

This research study adopted a case study approach. This is a method which provides an in-depth understanding of a phenomenon using varieties of data sources (Baxter & Jack 2008). As noted by Fellows and Liu (1997), case studies provide much deeper results compared to other methods. Moreover, this method is appropriate for application where the case in question represents a unique situation which has not earlier been the subject of detailed scientific investigation (Jefferies 2006). This approach was considered to be the appropriate method to gain an in-depth insight and understanding of the factors affecting the performance of construction PPPs within the Ghanaian context (Chan & Ameyaw 2013). The study considered two high-profile construction PPP projects in Ghana (MOFEP 2011). The two projects are considered by far the most successful construction PPPs in Ghana because the project parties achieved some of their objectives (GNA 2012; IFC 2014); therefore the lessons and factors contributing to their success are important. Additionally the selection of the two projects as case studies are based on the fact that most construction PPP projects initiated are still at the preparatory stage. Only these projects have progressed at least to the construction stage; hence they present useful experiences for future implementation (STMA-CSUF 2012).

A case study analysis approach similar to that employed by Kumaraswamy and Zhang (2001), Cheung and Chan (2009), Osei-Kyei and Chan (2015b) and Chan and Ameyaw (2013) was adopted. The analysis was conducted in two stages. First, a wide range of data (i.e. experiences, structures and features of the projects)

was sourced from the MOFEP reports, World Bank issues, Ministry of Water, Resources Works and Housing (MWRWH, Ghana) documentations, interviews and articles in local newspapers, private consortia and stakeholders' websites, project-related literature and media commentaries. Subsequently, the data gathered were thoroughly analysed to derive themes which accurately describe the experiences of the case studies. The second stage, however, involved follow-up correspondence with key project participants from both the public and private sectors to gain further insight into the experiences of the projects. The findings are therefore presented in a discussion form in this paper.

## Description of case studies

### *Kojokrom Market Development Project – Case A*

Kojokrom is a local community located within the Sekondi-Takoradi Metropolitan Assembly (STMA) in the western region of Ghana. The town has a population of approximately 8409, with 63% engaged in commercial activities (buying and selling) mostly at the marketplace (UN-Habitat 2009). The GoG in 2009 through STMA entered an agreement with a local finance facility (a UN-Habitat multi-stakeholder consortium) to build a six-unit market shed which could accommodate 240 vendors at an approximately cost of US\$180,000. However, per the contractual agreement, the users of the facility are required to make daily payments to the private investor (UN-Habitat 2009). The project is currently at the operational stage (STMA-CSUF 2012; MPCU 2013).

Although this project was awarded the best PPP project in 2011 (GNA 2012), it is not really a mega project based on the investment cost. However, lots of lessons and positive factors could be learnt from this project for future implementation of construction PPPs at both the local and central government levels especially for local market models.

### *Asutsuare Water Treatment Plant – Case B*

Asutsuare Water Treatment Plant was initiated after the introduction of a national policy for PPP in 2011 (World Bank 2012). It is a partnership agreement between the Ghana Water Company Limited (GWCL) and a Belgian developer (Denys Ghana). The proposed concession period for the project is 25 years and the construction is expected to be completed within five years in two phases at an estimated cost of €500 million (World Bank 2012; IFC 2014).

The project is being constructed downstream of the Kpong Dam on the Volta River and it is expected to draw about 0.1% of total volume of the river (World Bank 2011). Moreover, the project is estimated to



generate an output of 180,000 cubic metres of water per day, which would be supplied to about 3 million residents in the Accra and Tema metropolis (IFC 2014).

Although the project is still at the construction phase, the progress has been encouraging and it is one of the mega construction PPP projects with the most impressive progress after a national policy was introduced in 2011 (MOFEP 2014a). In this regard, lessons from the project are deemed necessary for future implementation, particularly for similar construction projects (IFC 2014).

### Comparing features and structure of case studies

Table 2 shows the summary of the features and structure of the projects. The two projects were initiated at different government levels. Case A was initiated by a local government authority while Case B was initiated at the central government level. Case B was also initiated after the national policy was introduced in 2011; whereas Case A was procured through the local government authority's structure for engaging in partnership with the private sector. This is because it was introduced before the national policy became operational. The two projects therefore provide the experience of delivering construction PPPs in Ghana from different governmental levels.

## Analysis and discussions on case studies

### Critical success factors from case studies

This section discusses the CSFs identified from the two case studies after a thorough content analysis of data (i.e. project experiences) retrieved from different reliable sources as well as some insights from correspondence with key project participants. Additionally, discussions in this section are also informed by authors' experience and knowledge of PPP practices in Ghana.

### Strong government commitment and support

Governance in Ghana is realized in two folds: central and local government systems (Boafo-Arthur 2007). The local government level includes the Metropolitan,

Municipal and District Assemblies (MMDAs) and it is the pivot to the central government's efforts to promote infrastructure development in the country (Boafo-Arthur 2007). In this regard, the development of the PPP concept at the local level could help bridge the current infrastructure deficit of the country. The concept of PPP is quite well developed at the central government level but is yet to be realized and understood at the local governance level (MMDAs), where PPP projects are essential considering the unavailability of funds for public projects (GIZ 2013). The performance of Case A (local market project) clearly demonstrates how the PPP concept is beneficial to local economic development in Ghana. However, the progress of the locally initiated PPP project (Case A) could be attributed to the strong commitment and support demonstrated by STMA. It is worth noting that since the PPP concept became a policy in 2004 not all the MMDAs have shown enthusiasm towards this policy in developing public projects (MOFEP 2011). Hence, the commitment shown by the STMA could be an example which other local government authorities could emulate. Essentially, the Metropolitan Assembly provided a debt guarantee to enable the private consortium raise funds from local financial institutions (UN-Habitat 2011). Public projects developed at the local government level are often characterized by a plethora of risks (Ameyaw & Chan 2013), which limits the private investors' ability to raise substantial funds from both the local and international financial institutions. The guarantee from the Assembly actually aided the private partner to acquire a short-term loan from local financial institutions. STMA also ensured that land was readily available for the development of the project. Ensuring that lands are available for public projects could be very daunting in Ghana; however, considering the huge interest from the local government, lands were readily available for the upgrade and expansion of the local market.

Unlike Case A, which was a PPP project initiated by a local government, Case B was initiated by the central government through the GWCL (IFC 2014). Although the central government did not commit financially to

**Table 2.** Structure and features of case studies.

Description	Case A	Case B
Project location	Kojokrom (Sekondi Takoradi)	Asutsuare (Greater Accra region)
Project status	Operational stage	Construction stage
Project model	Build–operate–transfer	Design–build–finance–operate
Public entity	Sekondi-Takoradi Metropolitan Assembly	Ghana Water Company Limited
Project company	Local private developer	International Private Developer
Year of initiation	2009–2012	2011–present
Sector ministry	Local Government and Rural Development	Ministry of Water Resources Works and Housing
Concession period	Five years	25 years
Project value	US\$180,000 (US\$30,000 per shed)	€500 million
Project scope	Construction of six market sheds and other ancillaries	Construction of water treatment plant

Sources: UN-Habitat (2009); World Bank (2012); IFC (2014).

the water treatment plant project, the government ensured that all the necessary rights and state permissions required for developing water treatment plants were granted on time. One fascinating commitment is how easily the project went through the procurement process stipulated in the national policy. Basically, the number of approvals required by the national PPP policy guideline throughout the procurement process could be very discouraging to private partners (MOFEP 2011). However, if public authorities are committed to the implementation of the project, the approval process could be fast-tracked and this was replicated in the water treatment plant project (Case B).

### ***Strong community/public support and relationship***

Public projects in Ghana are mostly delivered and owned by the government (World Bank 2011), therefore allowing the private sector to develop and operate public facilities from which fees would be collected is often subject to negative perceptions and protest from the community/public (Fall et al. 2009). Notwithstanding, the deplorable and unhygienic condition of the local market (Case A) persuaded the local residents and vendors to support the idea to redevelop the market through the PPP approach. Importantly, it was the vendors, through their association (Kojokrom Market Women's Association), who approached the Metropolitan Assembly for the redevelopment of the market after all efforts by the Metropolitan Assembly were exhausted (UN-Habitat 2011). The cooperation and support shown by vendors have allowed the PPP market model to achieve its objectives, of which the PPP concept is now considered the appropriate procurement option for development of local markets in Ghana (MOFEP 2014a). It must be highlighted that there are similar local market redevelopment projects in other cities in the country that have been in distress primarily due to the lack of support and cooperation of vendors (Graphic online 2011). Fundamentally many vendors believe that redeveloping a market through PPP often results in higher user charges. Other vendors fear that they will be displaced or their stores will be allocated to political party favourites upon completion (Graphic online 2011). Thus the support for PPP market models is critical and this was demonstrated in Case A. Additionally, the cordial relationship established between stakeholders throughout the entire procurement process helped sensitize the vendors, particularly on the collection of user fees and relocation of stores. This has indeed helped avoid public opposition and grievances, especially over user fees charged during the operational stage (STMA-CSUF 2012).

The support demonstrated in the local PPP market project in Case A was no different from that of the water

treatment plant project. This is because for years most residents living in the suburbs of the country's capital (Accra) have depended on bore holes for their water supply, which is often sold by other residents at a higher price compared to water supplied by the public authorities (Dzawu 2013). Hence, constructing the water treatment plant with input from the private sector has been a huge relief and provided hope to local residents in the capital city.

### ***Openness and constant communication***

As previously indicated, the concept of private participation in public infrastructure delivery in Ghana is yet to be appreciated by the general public, particularly rural/local dwellers. Many local people have misunderstood the government's partnership with the private sector to deliver public projects. However, openness and frequent communication between project parties (local government authorities and private consortia) and the public could change the negative perception of PPP projects in Ghana. Essentially, the experience of Case A attests to this assertion. The local authorities were opened in all transactions to the Kojokrom Market Women's Association. Negotiations were transparent to the extent that at every stage of the process, stakeholders were aware of what had been done. This did not only allow a smooth transaction process, but vendors felt part of the project's development. Importantly, a sense of belongingness in PPP project development in Ghana is critical, particularly for local market development projects. Some local government authorities have not been open and transparent on PPP market projects and it is not surprising that many other market projects in other cities in the country are failing to proceed successfully, as experienced in Case A. It is through transparency and proper communication that a sense of belongingness among local residents and trade unions is created to avoid stiff opposition and agitation over PPP market projects as well as other local infrastructure projects.

Case B, which is a water treatment plant project, does not have as large a stakeholder management as Case A. Nonetheless, the progress of the project at each stage was frequently communicated to the general public. Most often, the government through the PPP unit had press conferences to inform the public about the progress of the project and its importance in solving the rationing of water in some parts of the capital city (Larbi 2014).

### ***Project profitability***

The profitability of a PPP project is mostly assessed through detailed feasibility studies (Jamali 2004; Dulaimi et al. 2010). The assessment of a project's profitability

becomes vital when the project is to be delivered at the local government level in Ghana. This is because many rural dwellers are low-income earners, where many may not be able to afford to pay for continuous user fee charges often expected by the private partner. In this regard, identifying a profitable PPP project could be quite difficult unless detailed feasibility studies are done to assure its viability. Notwithstanding, projects including markets development projects are viable at the local/rural level in Ghana and Case A attests to that. Undeniably, local market projects offer good income streams to investors as the demand for such projects is constant and keeps increasing. As shown in Case A, the high demand for the facility was envisaged even before it was completed. This is because the vendors had long desired to work in proper hygienic conditions and therefore were willing to cooperate and pay for any fees that would be charged (STMA-CSUF 2012). It was therefore not surprising that, after a few years of operation, almost half of the investment cost had been recouped by the Metropolitan Assembly (MPCU 2013). Similarly, Case B is considered to be highly profitable considering the huge water deficit facing the country. Although the project is still under construction and has yet to test its profitability, earlier feasibility studies conducted shows that indeed the project could offer a good income stream to the private investor (IFC 2014). The experience described in the two case studies (A and B) clearly shows that developing a water treatment plant project and local market project could be very lucrative and attractive to private investors in Ghana if proper measures are in place.

### **Capable private partner**

Generally, to ensure a more successful PPP project, a well-organized public authority is required; likewise, a capable and strong private partner is a must (Li et al. 2005; Babatunde et al. 2012). In this context, capable private partner implies the ability of the private consortium to raise massive funds and possess the expertise to execute PPP projects on time and within budget (Tiong 1996). Attracting a capable private partner may not necessarily be difficult in the developed countries, considering the favourable economic conditions which prevail; however, this is otherwise in low-income countries like

Ghana. Therefore, the role of locally based private investors is very important in the country's PPP development. It is important for local developers to be supported by the government in order to handle PPP projects, particularly for projects initiated at the local government level. The PPP market project described in Case A was executed by a well-structured locally formed consortium led by the United Nations Human Settlements Programme (UN-Habitat); a United Nations agency (STMA-CSUF 2012). Although the multi-stakeholder consortium is a non-profit private organization, the structure of the organization could be replicated by domestic investors interested in PPPs at local government level. The consortium had professionals with much experience in delivering such projects in Ghana. This actually aided the consortium in raising funds for the project when provided with a debt guarantee by the Assembly. On the other hand, though the private partner in Case B is a well-established and capable developer in water projects, the consortium is an international private developer from Belgium. Obviously not all PPP projects can be undertaken by domestic developers, particularly projects initiated at the central government level which require huge capital and expertise. Nevertheless, the previous experience and capacity of the Belgian developer contributes significantly to the progress of the water treatment plant.

### **Comparison of case studies' experiences with global experience**

This section compares CSFs from the two case studies with PPP projects implemented in other countries which have been reported in literature. Although the projects' features and structure vary, comparisons are only done to identify the CSFs, which prevail in other case studies reported in the literature and how those factors manifested. Five research studies which focused on exploring the CSFs of specific case studies were selected from the literature. Table 3 shows the comparison with the literature.

It was found that strong government commitment and support has been reported in three different studies focusing on different cases. In three different PPP projects analysed by Dulaimi et al. (2010) in UAE,

**Table 3.** CSFs from Cases A and B compared with literature.

CSFs identified from Cases A and B	Dulaimi et al. (2010) (UAE)	Nisar (2013) (UK)	Meng et al. (2011) (China)	Jacobson and Choi (2008) (USA)	Jefferies et al. (2002) (Australia)
Strong government commitment and support	x			x	x
Strong community support and relationship		x		x	x
Openness and constant communication				x	
Project profitability			x		x
Capable private partner	x				x



government support and commitment was realized in one of the projects. The government demonstrated strong support for the project by ensuring that approvals required from other public authorities were fast-tracked to allow the commencement of the project. This is similar to the government support in the water treatment plant project described in Case B. In Jacobson and Choi's (2008) analysis of some PPP projects in the USA, they indicated that the government (City Council) demonstrated commitment and support towards the project by making all transactions transparent to stakeholders of the project. It is therefore noticeable that governments globally have their own ways of showing commitment and support for PPP projects. In this regard, government support could be a success factor for PPP projects in many countries but the approach employed by governments in supporting or showing commitment could vary among jurisdictions.

Strong community support and relationships were also emphasized in other case study analysis. In the three community PPP projects analysed by Nisar (2013) in the UK, community support and relationships were realised where all shareholders (including users) were integrated into a project board established as part of the PPP organization. The project board incorporated users and other stakeholders which helped address issues and build consensus in order to minimize disruption during the delivery of the project. This approach appears to be different from the community support and relationship manifested in Cases A and B, where no such project board was established. It is understandable since the three community PPP projects studied by Nisar (2013) had a larger stakeholder than the local market project and water treatment plant project.

Openness and constant communication, as identified in Cases A and B, were reflected in Jacobson and Choi's (2008) case study analysis of PPP projects. In that particular case, external stakeholders felt a strong sense of trust and belongingness, which was similar to that shown in the local market PPP project (Case A). They further pointed that openness and communication helped avoided litigation, and stronger cooperation was built among stakeholders.

In four transfer–operate–transfer (TOT) water case studies examined by Meng et al. (2011) in China, project profitability was a key success factor, similar to Cases A and B. It was found that the TOT water projects could offer a continuous revenue stream and this was the primary reason why the project was able to attract foreign investors.

Capable private partner identified in Cases A and B were also reported in PPP projects examined by Jefferies et al. (2002) and Dulaimi et al. (2010). Essentially,

Jefferies et al. (2002) pointed out that the consortium in the Stadium Australia project had sufficient expertise, good reputation and experience in delivering such projects. Similarly, Dulaimi et al. (2010) affirmed in one of the three projects analysed that the private consortium's expertise and knowledge in that project contributed to the project's success. This clearly indicates that irrespective of the jurisdiction where a PPP project is implemented, the expertise and knowledge level of the private partner is critical to ensure the project's success.

## Practical and management implications

Being a pioneering study, the findings have several practical and management implications for local PPP practitioners in Ghana. First, construction PPPs should receive strong commitment and support from the local and central government authorities. However, commitment and support could be demonstrated by fast-tracking approvals and permits required before the commencement of the project. Moreover, a debt guarantee is essential to enable the private partner to raise funds from the local or international financial markets.

Second, project parties (public and private partners) should engage users or commuters at the initial stages of the construction project and they should also ensure a more cordial relationship with users of the facility throughout the project lifecycle.

Third, public/users should be incorporated into the whole project development process and this could be achieved through frequent meetings with commuters, trade unions or civil group activists. Importantly, this becomes more critical for local market projects developed through the PPP scheme. It is also important for public authorities to desist from direct negotiations of PPP projects without subjecting the project to a competitive tendering process.

Fourth, PPP projects should be profitable in order to attract private investors. However, the profitability of PPP projects in Ghana could be assessed through detailed feasibility studies. In developing PPP projects at the local government level, feasibility is vital to assess the project's profitability considering the high number of low-income earners in the local communities. Nevertheless one of the most profitable projects at the local level could be market projects.

Lastly, the selected private partner should have adequate experience and expertise. More importantly, the consortium should have the capacity to raise massive funds for construction projects. However, considering the plethora of risks in Ghana (Ameyaw & Chan 2013), which could deter foreign investors, developing domestic investors is important for PPP development in the GCI.

In this regard, the government could offer some financial support to expand the capacity of local private developers in order to enable them to undertake PPP projects, particularly those initiated at the local level (MMDAs).

## Conclusion and future research

This paper has explored the CSFs for construction PPP projects in Ghana by analyzing two successful projects. Case A is a local market project initiated by a local government authority (Metropolitan Assembly) – a level where the PPP concept is yet to be fully comprehended. Case B is a water treatment plant project initiated by the central government through the GWCL – a level where the PPP concept is quite well known and understood. From the case study analysis, five CSFs are identified: government commitment and support, strong community support and relationship, openness and constant communication, project profitability and capable private partner. Comparing the case study experiences with global experience, it is revealed that some CSFs, including government-led CSFs, are applicable in other jurisdictions; however, their manifestations are different among jurisdictions. It is believed that the findings and implications provided could guide local practitioners when implementing future construction PPP projects.

The major limitation of the current study is that it focuses on only two case studies where projects have reached at least the construction stage. Additionally, comparison with global experience is based on literature; where project features and structures are different. It is therefore recommended that a future study could consider adopting a survey approach to evaluate a checklist of CSFs for construction PPPs in Ghana. Additionally, the survey will make more meaningful comparisons with CSFs identified in other countries.

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