Journal of Construction in Developing Countries, 18(2), 1–14, 2013

Success Factors for the Implementation of Public–Private Partnerships in the Construction Industry in Uganda

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Abstract: With growing needs for infrastructure financing, many economies are turning to off-balance-sheet financing. In Uganda, for example, the ministry in charge of finance has been trying to find ways to implement projects funded using public–private partnership (PPP) arrangements. PPPs are risk-sharing investments in the provision of public goods and services, seen by governments as a means of launching investment programmes that would not be possible in reasonable amounts of time within the available public-sector budget. However, there has been no in-depth analysis of the factors that are likely to affect the success of PPP projects in developing countries. The objective of the present study is to address this gap and contribute to the knowledge base of success factors for PPP projects in developing countries, using Uganda as a base for data collection. Success factors were identified from the literature and validated using interviews with the three major types of stakeholders in the construction industry, i.e., contractors who represent the private sector and representatives of financial institutions and government departments, who are largely charged with the construction of public facilities. Using questionnaire surveys, the various factors were rated. The factors were then ranked in terms of the importance of the factors for each of the parties involved, using the coefficient of variation. A competitive procurement process, a well-organised private sector, the availability of competent personnel to participate in PPP project implementation, and good governance are the most important cross-cutting factors identified.

Keywords: Success factors, Construction industry, Public–private partnerships, Uganda

INTRODUCTION

Developing countries such as Uganda are in dire need of infrastructure development, and some developing countries are venturing into public–private partnerships (PPPs). The multiple objectives of PPPs (Bing et al., 2004), including promoting infrastructure development, developing the local economy, reducing costs, increasing construction and operation efficiencies, and improving service quality by incorporating the private sector's knowledge, expertise and capital, have attracted increasing interest from policy makers, researchers and industry practitioners. Governments believe that PPP procurement can provide a wide variety of net benefits for society, including enhanced government capacity, innovation in delivering public services; reductions in the costs and times associated with project implementation, and transfer of major risk to the private sector, with the net result of securing value for money for taxpayers (Gruneberg, Hughes and Ancell, 2007: 692). In Uganda, for example, the ministry in charge of public works and transport has been seeking the development of PPP-funded infrastructure projects, and the government is in the process of formulating policies and guidelines for their implementation. Despite great efforts to increase locally generated income to finance national activities from the nation's budget, full local

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budget financing remains an unachieved goal in Uganda. Local taxes still finance 75% of Uganda's 7.552 trillion shilling annual national budget (equivalent to approximately 2.8 billion US dollars), and there is a backlog of infrastructure projects to be undertaken. In the recent past, a few projects financed under PPP arrangements have been undertaken, such as the Karuma hydroelectric power dam and the Police Headquarters (Ministry of Finance Planning and Economic Development, 2010).

PPPs are risk-sharing investments in the provision of public goods and services, seen by governments as a means to launch investment programmes that would not be possible in reasonable amounts of time within the available public-sector budget (European Investment Bank, 2005). The Canadian Council for PPPs defines a PPP as "a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards" (Grant, 1996). PPP are arrangements whereby the public and private sectors, with the financial assistance of financial/lending institutions, work together to implement public-sector projects and services, from the planning stage through the design, construction, and operation and maintenance stages, or parts of these stages (Bing et al., 2004). Each of the parties has his/her own interest in the success of this "union of convenience". In developed countries, the involvement of the private sector in the development and financing of public facilities and services has increased substantially over the past decade (Li et al., 2005). For instance, many PPP projects in the United Kingdom and other developed economies are regarded as successful, and the drivers of their success have become subjects of investigation (Qiao et al., 2001; Jefferies, Gameson and Rowlinson, 2002; Li et al., 2005). However, little is known about the conditions necessary for the successful implementation of PPP projects in developing countries (Akintoye et al., 2001). The objective of the present study is to address the lack of knowledge about the success factors for PPP in construction projects in developing countries, using Uganda as a base for the study.

LITERATURE REVIEW

Akintoye, Beck and Hardcastle (2003) define a PPP as a long-term contractual arrangement between a public-sector agency and a private-sector concern whereby resources and risks are shared for the purpose of developing a public facility. For the public sector, the principal aim of a PPP is to achieve value for money in the services provided while ensuring that the private-sector entities involved meet their contractual obligations properly and efficiently (Grimsey and Lewis, 2002). PPPs are a means of public-sector procurement using the private sector's best practices for financing. PPPs can involve design, construction, financing, operation and maintenance of public infrastructure and facilities, or the operation of services, to meet public needs. They are often privately financed and operated on the basis of revenues received for the delivery of the facility and/or services. One key to the success of PPPs is the ability of the private sector to provide more favourable long-term financing options than may be available to a government entity and to secure the necessary financing more quickly than a government entity could (The National Council for Public–Private Partnerships

[NCPPP], 2003). Such contracts are long-term in nature, typically covering periods of 25–30 years. According to Mustafa (1999), PPPs address the common faults that are associated with public-sector procurement, such as high construction costs, construction overruns, operational inefficiencies, poor design, and community dissatisfaction. PPPs are based on the concept of the transfer of risk from the public sector to the private sector, under circumstances in which the private sector is best placed to manage risk. One of the key features of PPPs that appeals to the government is the shift of project risks from the public sector to the consortium involved with the project, even though this requires a profit incentive for the project consortium (Grimsey and Lewis, 2002). PPPs are being established as cost-effective methods of overcoming the costs associated with the provision and maintenance of infrastructure. Duffield (2001) expounds on the benefits of PPPs using the Australian examples of the New Prisons Project in Victoria, the New South Wales Schools Project and Sydney's Cross City Tunnel.

PPPs have multiple objectives, including promoting infrastructure development, developing the local economy, reducing costs, increasing construction and operation efficiencies, and improving service quality by incorporating the private sector's knowledge, expertise and capital (Yuan et al., 2009). When PPP projects were first launched in the UK, the government appeared to view them primarily as a means of removing infrastructure costs from the public balance sheet, keeping investment levels up, cutting public spending and avoiding the constraints of public-sector borrowing limits (Li et al., 2005). However, Li et al. (2005) argue that the impact of government borrowing is much less significant than first thought and that the PPP concept is now seen essentially as a new approach to risk allocation in public infrastructure projects. Li (2003) reports that the most significant disbenefits associated with PPP procurement are of the amount of management time spent in contract negotiations, lengthy delays in negotiations and high participation costs. Akintoye et al. (2001) reported that PPP procurement creates challenges in terms of high cost of tendering, complex negotiations, cost constraints on innovation, and differing or conflicting objectives among the project stakeholders.

According to HM Treasury (2000), there are different forms of PPPs, the major ones being asset sales, wider markets, sales of business, partnership companies, private finance initiatives (PFI), joint ventures, build-own-operate-and-transfer (BOOT) projects, investment partnerships and policy partnerships. The most commonly used PPP model in the UK is the PFI (HM Treasury, 2000). The interest in the use of PPPs in Uganda seems to be driven by the success of the PFI model in the United Kingdom. PFIs are the most successful and prolific forms of PPPs and involve the public sector contracting with the private sector to provide quality public services on a long-term basis, typically 25–30 years. PFIs takes advantage of private-sector infrastructure delivery and service management skills, incentivised by having private financing at risk. The private sector takes the responsibility and risks for designing, financing, enhancing or constructing, maintaining and operating the infrastructure assets needed to deliver a public service in accordance with the public sector's output specification. The public sector pays for the project through a series of performance- or through put-related payments, including service delivery and return on investment. A central government may provide payment support to the public sector through grants and other financial mechanisms (HM Treasury, 2000).

However, Harback, Basham and Buhts (1994) identified five pitfalls of PPPs: unfulfilled expectations, unfinished business in which some elements of the partnering arrangement are still in dispute, assumption that all parties involved in the partnering are willing to share personal beliefs and thoughts, and adoption of a one-size-fits-all approach to all projects. Despite these potential pitfalls, many PPP/PFI projects have been successfully, and the drivers of their success have become a subject of research (e.g., Keene, 1998; Qiao et al., 2001; Jefferies, Gameson and Rowlinson, 2002).The potential pitfalls must be overcome to realise the full potential of PPP arrangements.

Rockart (1982) defines success factors as "those few areas of activity in which favourable results are absolutely necessary for a manager to reach his/her goals". The success factor methodology is a procedure that attempts to make explicit the key areas that are essential for management success. The concept was developed by Rockart and the Sloan School of Management, with the phrase first used in the context of information systems and project management (Rockart, 1982). Success factors are those fundamental issues inherent in a project that must be maintained for teamwork to take place in an efficient and effective manner. They require day-to-day attention and operation throughout the life of the project.

A review of the literature on the factors that are key to the success of project procurement under BOOT, PPP or similar concepts has been carried out. Table 1 provides a summary of the key success factors.

METHODS

Questionnaire Design

This study investigated the success factors for PPP on construction projects in Uganda's public sector. The investigation considered the government departments that are charged with construction, the private-sector contractors involved in construction and the financing agencies (banks and insurance companies). Success factors were compiled based on a review of the literature. Face-to-face discussions were held with three contractors in the private sector, three representatives of government departments working on construction projects, and three representatives of financial institutions to verify that indeed the indicated factors were important in addressing issues of PPP in building projects and that they were well described. These representatives did not participate in the questionnaire later. Rather, they offered their opinions and thereby helped to improve the questionnaire.

The data used were acquired with a questionnaire survey through a quantitative approach. The questionnaire was compiled based on the refined list of success factors after a pilot study. The pilot was conducted to improve the wording and increase the reliability of the questions. Closed-ended questions were used as they are very convenient for collecting factual data and are simpler to analyse because the range of potential answers is limited (Fellows and Liu, 2003). The respondents were asked to give their opinions on the relative importance of the PPP success factors using a 5-point Likert scale (Fellows and Liu, 2003). The ratings were: Not important = 1; Fairly important = 2; Important = 3; Very important = 4; and Extremely important = 5. This type of scale has been found to be

acceptable in other construction management research. For example, Wang et al. (1999) used a similar approach to investigate risk criticality in China's BOOT projects. A flow chart showing the methods and outcomes is provided in Figure 1.

Table 1. Summary of Success Factors for PPP Projects

Success Factor	**Source**
Project technical feasibility	Qiao et al. (2001); Keong, Tiong and Alum (1997)
Project financial feasibility	Qiao et al. (2001)
Financial capacity/ ability of the parties	Salzmann and Mohamed (1999)
Sound economic policy	Tiong (1996)
Stable macro-economic environment	Hardcastle et al. (2006)
Well-organised public agency	Qiao et al. (2001)
Well-organised private sector	Salzmann and Mohamed (1999)
Strong private consortia	Jefferies, Gameson and Rowlinson (2002); Hardcastle et al. (2006)
Availability of competent personnel to participate in PPP project implementation	Duffield (2001)
Stakeholders' acceptance	Qiao et al. (2001)
Presence of an enabling PPP policy	Tiong (1996)
Favourable policies with respect to lending for PPP construction projects	Jefferies, Gameson and Rowlinson (2002)
A favourable environment for local private construction companies to compete favourably and expand compared to internationals and multinationals	Hardcastle et al. (2006)
Positive attitude towards PPP project implementation	Tiong (1996)
Willingness to support and freely participate in PPP project implementation	Duffield (2001)
Appropriate risk allocation and risk sharing	Qiao et al. (2001) Grant (1996)
Transparency in the procurement process	Qiao et al. (2001)
Competitive procurement process	Jefferies, Gameson and Rowlinson (2002)
Commitment of all of the parties	Salzmann and Mohamed (1999)
Involvement of all of the key parties during project planning	Jefferies, Gameson and Rowlinson (2002)
Thorough and realistic cost/benefit assessment of the projects involved	Qiao et al. (2001); Akintoye et al. (2001)

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Table 1. (*continued*)

Success Factor	Source
A streamlined, transparent and clear project appraisal policy	Qiao et al. (2001)
A strong monitoring and evaluation (M&E) system for the projects implemented	Hardcastle et al. (2006)
Strong monitoring and evaluation teams for the projects implemented	Hardcastle et al. (2006)
Proper recording, archiving and referencing	Hardcastle et al. (2006)
Good governance	Duffield (2001)
Government involvement by providing guarantees	Wang et al. (1999)
Favourable legal framework	Tiong (1996)
Willingness to share authority amongst the parties	Salzmann and Mohamed (1999)
Technology transfer	Qiao et al. (2001)
General knowledge about existence and working of PPPs	Qiao et al. (2001)
Presence of a pro-investment culture among the population	Qiao et al. (2001)

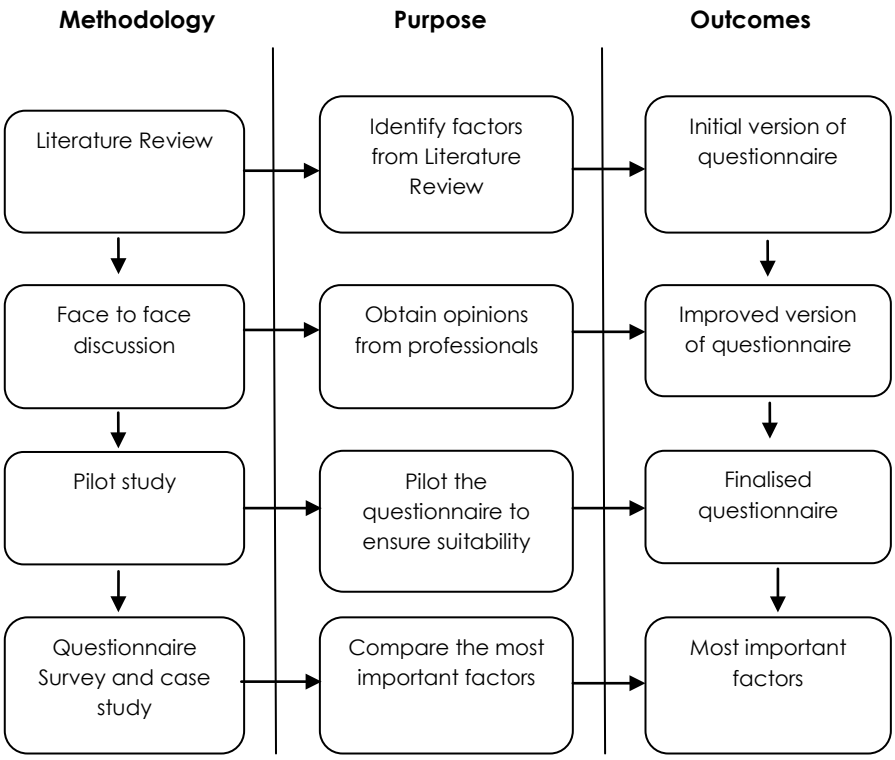

Figure 1. Summary of Methods and Outcomes

Surveys

Closed-end questions were mainly used for this research after considering the results of the pilot studies. Field assistants were on hand to follow up the responses and also to explain terms in the questionnaire if the respondents wanted clarification. The respondents were requested to rank the 32 factors with regard to their importance in PPPs.

The key stakeholders assessed were the public sector, the private sector and the financial institutions. Because the research was conducted at the policy level, the public-sector respondents were limited to representatives of autonomous and semi-autonomous government departments and bodies that have construction portfolios as core parts of their operations. A total of 41 government institutions and departments were contacted. The target respondents were heads of government departments (Commissioners) and chief executives for parastatal organisations.

Because the research was primarily concerned with construction projects; the private sector covered only construction contractors. There are many construction companies operating in Uganda, but for long-term PPP arrangements, it was envisaged that the government would consider primarily companies of repute that are financially stable and capable of investing for mid- to long term durations. The survey gathered data from chief executives of the largest building contractors registered with the contractor's association, the Uganda National Association of Building and Civil Engineering Contractors (UNABCEC). The selection of the largest contractors was based on the assumption that large and well-established firms are more capable of getting involved in PPP projects. It was decided that contractors in categories A and A* would be the potential participants. At the national level, one recognised way of categorising construction companies is by the UNABCEC class. The classification from A to E takes into account financial strength, size and ability to carry out contracts. Those in class A are the largest and undertake projects of the greatest magnitude and include some multinational companies. Owing to the relatively small number of firms within these two categories, A and A*, all 42 civil and building contractors in the two categories were targeted.

A total of 41 financial institutions, including banks and insurance companies, were contacted, with the focus being on obtaining the participation of investment managers I the research. Commercial banks formed the majority of the financial institutions contacted, followed by insurance firms. The other categories of financial institutions, including development banks and savings schemes, were limited both in number and accessibility. Because the research required consideration of medium- to long-term investments in large amounts of money, micro finance institutions were excluded from this research. This was due to their shorter lending periods and limited financial resources.

In all, 119 questionnaires were distributed and 98 were returned. Of these, 32 responses came from public-sector organisations, 31 from financial institutions and 35 from the private sector. This was considered sufficient because in the cases of the public sector and financial institutions, the populations could not be accurately established. Responses of more than 30 were more than the minimum ten per cent required for descriptive research (Collis and Hussey, 2003). A summary of the response rates is provided in Table 2.

Table 2. Response Rate of the Questionnaire

Party	Number Contacted	Number Responded	Response to Contact (%)
Private sector	42	35	83
Public sector	36	32	89
Financial institutions	41	31	76
Total	119	98	82

The respondents' overall average experience in the sectors was 10.6 years, which indicates that most of the respondents are knowledgeable about construction financing. All respondents acknowledged that they had been involved in different forms of PPP to varying degrees. Of the 35 who responded on behalf of the contractors, 17 were managing directors, while 18 were technical directors. Of the public-sector respondents, 20 were commissioners of technical departments, while 12 were chief executive officers of government parastatal organisations. The responses from the financial institutions were obtained from investment managers.

RESULTS AND DISCUSSION

The analysis of the data was carried out using the Statistical Package for Social Scientists (SPSS) 16.0 package. The data collected from the survey were coded and entered into the software to calculate the required statistics, including the mean, the variance, the coefficient of variation and Spearman's coefficient of rank correlation. Cronbach's alpha was used to test the reliability of the individual groups of respondents. Cronbach's alpha for the factors was 0.746, suggesting that the data collected for the success factor analysis were reliable (Norusis, 1992).

The mean ratings, variances, and coefficients of variation of the data were determined using equations 1, 2 and 3, respectively (Kothari, 2004):

$$E(x) = \sum_{x=1}^{n} x_i p(x_i) \quad \text{Eq. 1}$$

$$V(x) = E(x-\mu)^2 \quad \text{Eq. 2}$$

$$COV(x) = \frac{\sqrt{V(x)}}{E(x)} \quad \text{Eq. 3}$$

where $E(x)$ is the expected value of a discrete random variable X, x are the values of the random variable for which $p(x) > 0$, $p(x)$ is the probability distribution, μ is the mean, $V(x)$ is the variance of random variable X, and $COV(x)$ is the coefficient of variation. The success factors were ranked by their respective COVs for each category of respondents. Ranking by COV has been employed before and is considered reliable because it considers both $E(x)$ and $V(x)$ (Al-Shumaimeri, 2001). Table 3 ranks the factors by their perceived importance in PPPs.

Correlation analysis was carried out between the ranks of the factors associated with the private and public sectors, the private sector and financial institutions and the public sector and institutions. The analysis was carried out using Spearman's rank correlation coefficient, ρ, given by the following equation:

$$\rho = 1 - \frac{6\sum d^2}{n(n-1)}$$

where d is the difference between the inter-category ranking and n is the number of factors (equal to 32). Spearman's rank correlation coefficients between the ranks of factors associated with the private and public sectors, the private sector and financial institutions and the public sector and institutions were 0.32, 0.11 and 0.31, respectively. The rankings by the different categories are positively but not strongly correlated. The weak correlation implies that each of the parties puts emphasis on the different factors that they consider important for PPPs.

From Table 3, it can be deduced that the five factors that are perceived to be of greatest importance to the private sector are the project's financial feasibility, strong monitoring and evaluation teams for the projects implemented, good governance, the project's technical feasibility and a competitive procurement process.

The five factors that are perceived to be of greatest importance to the public sector are a well-organised public agency, a competitive procurement process, project financial feasibility, commitment of all of the parties, and a strong monitoring and evaluation (M&E) system for the projects implemented. Jefferies, Gameson and Rowlinson (2002) similarly posit that a well-organised public sector with a functional procurement system is crucial to the success of PPP procurements.

On the other hand, the five factors for the financial sector are a competitive procurement process, the presence of an enabling PPP policy, an enabling environment for local private construction companies to compete favourably and expand compared to internationals and multinationals, good governance; and a streamlined, transparent and clear project appraisal policy.

The common factors within the first 12 for each of the categories were a competitive procurement process, a well-organised private sector, availability of competent personnel to participate in PPP project implementation, and good governance.

A competitive procurement process is important to the efficient delivery of PPP projects. In countries such as Uganda, the issues of lack of transparency and unethical behaviour adversely affect procurement processes (Transparency International, 2005). In addition, a large percentage of business transactions are handled informally. For the private sector to be well organised, there is a need to organise and regulate the private sector. There is also a need to develop the local capacity by training personnel in PPP project implementation, as these are relatively new concepts (Hardcastle et al., 2006). Governments implementing PPP projects should also improve their governance as it affects investor confidence (Transparency International, 2005).

Table 3. Ranking of Factors that Affect PPPs

Factor	Private Sector				Public Sector				Financial Sector			
	Mean	SD	COV	Rank	Mean	SD	COV	Rank	Mean	SD	COV	Rank
Project technical feasibility	3.43	0.92	0.268	4	3.53	0.98	0.278	25	3.19	0.65	0.204	15
Project financial feasibility	4.03	0.92	0.228	1	4.22	0.79	0.187	3	3.97	0.87	0.219	19
Financial capacity/ability of the parties	3.66	1.19	0.325	15	3.66	0.90	0.246	18	4.06	0.81	0.200	14
Sound economic policy	2.94	1.26	0.429	31	3.84	0.99	0.258	21	3.84	0.82	0.214	18
Stable macro-economic environment	3.34	1.19	0.356	22	3.66	1.04	0.284	26	2.77	0.76	0.274	30
Well-organised public agency	3.51	1.01	0.288	6	4.56	0.67	0.147	1	3.81	0.95	0.249	27
Well-organised private sector	3.60	1.12	0.311	10	4.06	0.88	0.217	8	4.23	0.56	0.132	6
Strong private consortia	2.77	1.19	0.430	32	4.06	1.01	0.249	19	3.84	0.82	0.214	17
Availability of competent personnel to participate in PPP project implementation	3.51	1.12	0.319	12	4.06	0.91	0.224	10	3.81	0.75	0.197	11
Stakeholders' acceptance	2.89	1.05	0.363	23	3.50	1.02	0.291	28	3.74	1.00	0.267	29
Presence of an enabling PPP policy	2.71	1.02	0.376	27	3.84	0.92	0.240	13	4.61	0.50	0.108	2
Favourable policies in respect to lending for PPP construction projects	3.03	1.25	0.413	30	3.34	0.90	0.269	22	3.39	0.84	0.248	26
An enabling environment for local private construction companies to compete favourably and expand compared to the internationals and multinationals	3.60	1.14	0.317	11	2.97	0.82	0.276	24	4.61	0.50	0.108	3
Positive attitude towards PPP project implementation	3.17	1.07	0.338	19	4.06	0.84	0.207	7	4.26	0.58	0.136	7
Willingness to support and freely participate in PPP project implementation	3.17	1.10	0.347	21	3.69	0.90	0.244	16	4.39	0.67	0.153	8
Appropriate risk allocation and risk sharing	3.54	1.15	0.325	14	3.50	0.88	0.251	20	3.03	0.75	0.248	25
Transparency in the procurement process	3.69	1.18	0.320	13	3.81	0.93	0.244	17	4.06	0.73	0.180	10
Competitive procurement process	3.86	1.06	0.275	5	4.03	0.74	0.184	2	4.81	0.40	0.083	1
Commitment of all of the parties	3.83	1.15	0.300	8	4.38	0.83	0.189	4	3.00	1.15	0.383	32
Involvement of all of the key parties during project planning	3.60	1.06	0.294	7	3.44	1.13	0.328	32	3.58	0.85	0.237	23

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Table 3. (*continued*)

Factor	Private Sector				Public Sector				Financial Sector			
	Mean	SD	COV	Rank	Mean	SD	COV	Rank	Mean	SD	COV	Rank
Thorough and realistic cost/benefit assessment of the projects involved	3.26	1.20	0.368	24	4.19	0.86	0.205	6	2.81	0.65	0.231	20
A streamlined, transparent and clear project appraisal policy	3.03	1.01	0.333	17	2.97	0.86	0.290	27	4.61	0.56	0.121	5
A strong monitoring and evaluation (M&E) system for the projects implemented	3.51	1.17	0.333	16	4.00	0.80	0.200	5	4.06	0.63	0.155	9
Strong monitoring and evaluation teams for the projects implemented	3.60	0.91	0.253	2	3.84	0.88	0.229	11	3.23	0.76	0.235	22
Proper recording, archiving and referencing	3.66	1.24	0.339	20	3.16	0.77	0.244	15	3.55	0.85	0.239	24
Good governance	3.91	1.01	0.258	3	3.66	0.87	0.238	12	4.61	0.56	0.121	4
Government involvement by providing guarantees	3.43	1.29	0.376	26	3.84	0.85	0.221	9	3.03	0.60	0.198	12
Favourable legal framework	3.26	1.09	0.334	18	3.50	0.95	0.271	23	4.03	0.80	0.199	13
Willingness to share authority amongst the parties	3.26	0.98	0.301	9	2.81	0.82	0.292	30	2.81	0.95	0.338	31
Technology transfer	3.11	1.16	0.373	25	3.13	0.75	0.240	14	3.84	0.82	0.214	16
General knowledge about existence and working of PPPs	3.03	1.18	0.389	28	3.50	1.02	0.291	29	3.61	0.84	0.233	21
Presence of a pro-investment culture among the population in the country	2.66	1.06	0.398	29	2.91	0.86	0.296	31	2.97	0.75	0.253	28

CONCLUSION AND RECOMMENDATIONS

This study presents information on the factors relevant to the success of PPP construction projects and their relative importance to the contractors and financial institutions operating in Uganda and to the Government of Uganda. These factors may be applicable to construction industries in other developing countries.

The findings of this study can be useful to the stakeholders in various ways. First, by identifying and evaluating the factors affecting PPP projects, stakeholders intending to carry out PPP projects can focus their attention and optimise the use of resources on real issues. Second, having information about the relative importance of the factors, stakeholders can prioritise them in addressing concerns.

Moreover, the study sets the foundation for further analysis of the factors. This will enable those intending to carry out PPP projects in developing countries to obtain further insights and better likelihoods of successfully implementing PPP projects. In this way, the performance of construction industries in developing countries will improve.

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