

# Success Factors for Public-Private Partnerships in Infrastructure Development of Afghanistan: An Evaluation

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## Abstract

*This paper examines the public and private sectors' perception of key factors that influence the implementation of Public-Private Partnership (PPP) in the infrastructure development of Afghanistan - one of the poorest countries in the world where decades of conflict has destroyed much of its infrastructure. The data for this study was drawn through a comprehensive research approach that included a literature review; interviews/discussions with professional experts, experienced practitioners, and decision-makers in Afghanistan; as well as a qualitative survey questionnaire. This study identified thirty-seven critical success factors (CSF) that impact the success of PPP projects in Afghanistan. The most important CSFs were determined to be (1) the need for experienced technical and financial experts in the PPP unit of Afghanistan, (2) promotion of various financing mechanisms by PPP law, (3) establishment of clear financial objectives for PPP projects, and (4) up-front cost/benefit analysis. This study further identified CSFs that significantly hindered the success of PPPs in Afghanistan. These included political and legislative instability, absence of risk management experts and long project approval process, and the on-going political and security uncertainty. The result of an independent t-test showed that, with the exception of three factors, there was no significant difference between the perception of the private and public sectors concerning the importance of the identified CSFs. The factors identified in this study should be given utmost consideration by all the stakeholders to ensure the successful implementation of PPPs in the infrastructure development of Afghanistan. The findings of this study could also be used by researchers in Afghanistan and other developing countries to develop a theoretical body of PPP knowledge for future research.*

**Keywords:** Public Private Partnership (PPP), Infrastructure Development, Critical Success Factors (CSF), Economic Development, Afghanistan

**JEL Codes:** F10, F13, F21, F24

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## Introduction

Afghanistan's historical reputation for being a "trading nation with strong private sector traditions" was completely diminished due to nearly four decades of conflicts. The aftermaths of these conflicts have had

devastating impacts on the infrastructure of Afghanistan, which was once considered as one of the most important assets of the country (Lambert et al., 2011). The World Bank estimates that the cost of destroyed infrastructure and lost productivity between the communist coup of 1978 and the fall of the Taliban regime in 2011 was almost \$290 Billion (Del Castillo, 2008; Ghani & Lockhart, 2009). While significant infrastructure investment and improvements have been made since 2002, millions of Afghans still do not have access to basic infrastructure services including energy, water, transportation and communication mainly due to fiscal constraints of the country and inefficiencies of the government (The World Bank, 2020; MOF, 2016). Therefore, the Afghan government, where feasible, must seek new modalities to leverage private investment through Public Private Partnerships (PPPs) for building the infrastructure of the country. This in turn will facilitate economic growth by attracting foreign and private capital as well as improving Afghans' quality of life by increasing domestic production and services.

Public Private Partnership (PPP) is a widely adopted delivery method for implementing important infrastructure projects mainly because it enables governments to mobilize private sector's financial resources and management skills for capital infrastructure development (Ismail, 2013). Studies have shown the substantial contribution of infrastructure to Gross Domestic Product (GDP) and job creation in both developed and developing countries including those who emerge from a long-term conflict like Afghanistan (Aschauer, 1989a; Easterly & Rebelo, 1993; Esfahani & Ramírez, 2003). The World Bank estimates that a one (1) percent investment in infrastructure leads to one (1) percent growth in GDP. Additionally, access to critical infrastructure contributes to the peace building and security efforts of post-conflict countries by bridging the gap between rural and urban areas and thereby supporting the growth of trade and movement of people and goods (Unruh & Shalaby, 2012). The critical role of using Public-Private Partnership in financing infrastructure to accelerate transformational changes has been acknowledged globally, especially in developed countries such as the UK, Canada, Hong Kong, Australia and Singapore. However, in the case of developing and post-conflict countries, there are major barriers to attracting private investment for the development of infrastructure projects; these include, the absence of sound governance and strong financial institutions, inadequate public revenues, lack of required expertise, and unfavorable economic and commercial conditions (Schwartz & Hahn et al., 2004).

Afghan government's financial constraints combined with the continuous failure of the traditional procurement methods to deliver infrastructure projects on time and on budget have pushed Afghan policy makers to explore more subtle alternatives for bringing private sector's capital, creativity and efficiency into public infrastructure development. Thus, the first PPP law in Afghanistan was passed in September 2016, which formed the legal base for procuring and approving PPP projects. As per this law, the Central Partnership Authority (CPA) was established within the Ministry of Finance with a mandate of developing and regulating policies and providing technical assistance to PPP projects in the country (Afghanistan MOJ, 2016). Despite these initial steps, the implementation of PPP projects has been relatively slow in Afghanistan. The PPP Knowledge Lab, a global online platform that provides reliable resources on PPP, reports that the total investment committed to PPPs in Afghanistan since 1990 is only \$211 Million. Although there has been a wealth of detailed studies on success factors for PPPs in developed and developing countries, there is a lack of attention given to the need for investigating and analyzing Critical Success Factors (CSFs) for PPP projects in Afghanistan- a country where more than half of its population live under poverty line while having a huge potential for becoming a rich nation particularly through its untouched mining wealth, strategic location at the crossroad of many trade routes, and the unprecedented need for foreign and domestic investment.

Thus, this study was conducted to broaden the understanding of both practitioners and researchers by exploring factors critical for the successful delivery of infrastructure projects in Afghanistan. More specifically, the objectives of this study are (1) to examine the public and private sectors' understanding of the key factors that influence the implementation of PPPs in the infrastructure development of Afghanistan and (2) to identify the difference between the public and private sectors' perception concerning the importance of the key factors. The contribution of this paper would be significant not only in terms of identifying the important factors for the successful implementation of PPP projects in Afghanistan, but also highlighting the importance of the factors for the public and private sectors engaged in PPP contracts. Moreover, this study provides a distinctive framework, a "checklist," which could be adopted for future empirical research studies in Afghanistan and other developing countries that intend to navigate the success of PPPs.

## **2. Literature Review**

The term Critical Success Factors (CSFs), which was first introduced by Rockart (Li et al., 2005), is defined as "those few areas of activity in which

favorable results are absolutely necessary for a particular manager to reach his or her goals.” Since the 1990s, PPP success factors have been studied by several researchers. Ke et al. (2009), who focused on PPP research trend from 1998 to 2008, and Tang et al. (2010) found that CSFs for PPP are of a great interest to researchers. Since the evolution of PPP, the concept of “CSFs” has been employed in various areas of PPP projects ranging from different sectors, project stages within PPP arrangements to project models in general (Osei-Kyei & Chan, 2015). Meng et al. (2011) examined the CSFs of PPP in the water sector of China, which was built using the transfer, operate, transfer (ToT) model of PPP. Likewise, Jefferies et al. (2002) investigated the CSFs of a stadium project in Australia where they identified fifteen success factors that were critical to the project with the most significant CSFs being “developed legal/economic framework,” “political stability,” “financial capability,” “compatibility/complementary skills among the key parties,” “trust,” “community support”, “technical innovation in overcoming project complexity”, “efficient approval process,” and “consortium structure.” Moreover, PPP success factors have been explored in other infrastructure sectors, including telecommunication (Jamali, 2004), energy (Zuo et al. 2010), housing (Aziz, 2010) and (Abdul-Aziz & Kassim, 2011), and transportation (Roumboutsos et al., 2013). With regard to various stages within PPP arrangements, CSFs have been examined in a number of studies. Wong et al. (2012) examined the success factors of PPP project in the feasibility stage while Raisbeck and Tang (2013) investigated CSFs in the initial design phase of PPP projects. Despite the unique characteristics of individual PPP projects, researchers also employed the CSF concept for general PPP projects. Zang (2005a) identified forty-seven CSFs of PPP projects, which were grouped under five major categories: “economic viability,” “appropriate risk allocation via reliable contractual agreement,” “sound financial package,” “reliable concessionaire consortium with strong technical strength,” and “favorable investment environment.” Additionally, Zang (2005a) investigated the relative importance of CSFs based on the perception of industry and academic experts. Multinational organizations, such as the World Bank (WB), the United Nations (UN) and the Asian Development Bank (ADB), have produced several official reports, handbooks and guidebooks about the success factors of PPP projects. For example, the WB developed the PPP Checklists (The World Bank, 2015) which provides a comprehensive list of factors that could be used for the assessment of PPP projects. The checklist groups factors under four major categories: Politics, Law and Institution, Economics and Finance, and Execution. Despite a wide range of studies on CSFs for PPP in various countries, there is a paucity of research on CSFs for PPP projects in conflict

zones, especially in countries like Afghanistan where PPP-related literature is not only insufficient but also remains largely fragmented. For instance, while the study by Bayat et al. (2019) investigates major PPP risks in infrastructure projects in Afghanistan, Karimi and Piroozfar (2015) only looks into the “key-constraints” for the implementation of PPPs in Afghanistan. Additionally, besides the study by Niazi and Painting (2018), which only examines the 18 CSFs (mainly compiled from limited journal papers) for the construction industry, to the best knowledge of researchers, there’s no other study concerning CSFs of PPP in Afghanistan. Hence, this study fills the gap by not only investigating and ranking the most important CSFs that ensures the success of PPPs in Afghanistan by reviewing a wide range of credible and more recent resources, but also by examining the perceived importance of these factors between two principle parties (the public sector and private sector) in a PPP contract.

### **3. Methodology**

This study was designed to identify the key factors (CSFs) influencing the implementation of PPP projects in the infrastructure development of Afghanistan, a country with a limited local budget and significant infrastructure backlog. A comprehensive literature review was conducted to compile the factors determined for PPP projects in other countries. A total of thirty-seven (37) factors (listed in the second column of Table 1.) were selected based on their citation from a wide range of sources, including related journals and conference papers, review of records, reports, and published papers of prominent international organizations such as the World Bank, Asian Development Bank and the United Nations and academic dissertation and theses. The Data from these resources were deemed rich in information and had creditability with both academia and industry. For instance, the CSF1.1 (experienced technical and financial experts) was cited from Duffield (2001), Mistarihi et al. (2013) and the World Bank Checklist for PPP (2015), respectively. Similarly, the CSF4.5 (the continuation of the PPP projects with the same contract terms under future governments) was cited from Velotti et al. (2012), Girth (2014), and Hardcastle et al. (2016). It is worth mentioning that somehow similar approach has been adopted by previous studies as well, including the one by Hsueh and Chang (2017) that investigates success factors for PPP infrastructure in Taiwan. Next, face-to-face interviews/discussions were conducted with two high level government officials (one at the local level and the other at national level), a private business owner (knowledgeable of PPP projects), and a non-profit organization consultant to the Afghan government. The objectives of these interviews/discussions were (1) to

ascertain of the compiled success factors (CSFs) from the literature review were important/applicable for the success of PPP projects in Afghanistan, (2) to classify the identified CSFs into categories that echo the current political, economic and social context of Afghanistan, and (3) to customize the wordings of each factor with some additions and modifications to make it more understandable to interviewees and specific to the context of Afghanistan. The final version is listed in the second column of Table 1. Finally, to examine the public and private sectors' view on the influence of the identified success factors in the implementation of PPPs in Afghanistan and to determine the differences in their perception of the importance of these CSFs, a survey questionnaire that included the paraphrased version of the CSFs was developed. The sampling frame for the questionnaire consists of individuals who satisfied two metrics: (1) were knowledgeable of and/or had experience with PPP delivery method, and (2) had years of experience working in Afghanistan's construction industry. The collected data was then analyzed using the Relative Importance Index (RII) and the t-test, as explained later under Survey Questionnaire.

### **3.1 Classification Categories for Critical Success Factors (CSFs)**

Based on the results of the face-to-face interviews/discussions, the CSFs were classified into four main categories based on their attributes: 1) Legal Framework and Institutional Setup, 2) Finance and Economics Issues, 3) Associated Risks, and 4) Sociopolitical Issues. The establishment and institutionalization of a comprehensive and fair legal framework was considered to be a prerequisite for the success of PPP projects especially in the case of a post-conflict country where there is little trust between the private and public sectors. PPP projects should make technical, economic, fiscal and financial sense with an adequate business case that provides value for the money as well as sufficient return for investors on their investments. The identification, quantification and optimal allocation of risk is vital for the success of PPP projects in many countries. Finally, it is extremely important that PPP projects have a broad stakeholder support including the political commitment and stability as well as leveraging the role of the locals in supporting PPP projects in their area. The rationale for classifying success factors in four categories was to group CSFs in a way that is relevant to the context of Afghanistan and thus to provide an exclusive list of CSFs for PPP implementation in Afghanistan. Similar classifications have been developed by other researchers as well. For instance, studies conducted by Zhang (2005a) and Hardcastle et al. (2006) grouped CSFs into five main groups, each with a number of sub factors.

### **3.2 Survey Questionnaire**

The data was collected through a quantitative survey questionnaire. The questionnaire included two sections. The first section encompassed background information for the respondents including type of organization, respondent's designation/title and years of working experience. The second section of the questionnaire was related to the objectives of the study which was to identify key factors (CSFs) influencing the success of PPPs in the infrastructure development of Afghanistan. This section of questionnaire included the four main key factor categories for the CSFs, along with sub-factors specifically addressing each main key factor. However, only key questions that were considered to be important for the successful development and implementation of PPP projects were included, without going in-depth into the technical and contractual issues, since the approach toward PPP delivery method is in its early stages in Afghanistan.

Closed-ended questions were used for collecting factual data, and for simplicity of analyzing the data. Since, the PPP delivery method is a specific topic, a non-random sampling framework was selected. Therefore, the participants in this study were selected based on two key metrics: 1) their knowledge of/experience with PPP delivery method and 2) their years of experience working in the Afghan construction industry. The participants were asked to provide their level of agreement to the PPP CSFs using a 5-point Likert scale. The rating was: 1= Strongly Disagree; 2= Disagree; 3=Neither Agree or Disagree; 4=Agree; and 5=Strongly Agree. The Likert scale was chosen because it is a useful tool to understand the participant's agreement or disagreement on a statement in a hierarchical way (Hsueh & Chang, 2017). In addition, survey questionnaires containing Likert scale questions are one of the most widely used tools for identifying CSFs for PPP projects (Li et al., 2005; Cheung & Chan et al., 2012; Ismail, 2013). Relative Importance Index (RII) was used to rank the perceived importance of the PPP CSFs. RII has been effectively used in various construction management researches with similar subject including the ones in Nigeria (Akelere & Gidado, 2003), Cyprus (Gidado & Smilas, 2004), and Malaysia (Abdul Kadir & Lee et al. 2005).

The Relative Importance Index (RII) (Somiah & Osei-Poku et al., 2015) is defined as:

$$RII = \frac{\sum W}{A * N}$$

Where:

W = weight given to each statement by the respondent, range is from 1 to 5

A = higher response integer (5)

N = total number of respondents

Based on their Mean score, success factors in each classification group were ranked according to their importance as perceived by all the respondents, then just by the public sector, and then just by the private sector respondents. Finally, an independent t-test analysis was conducted to identify the statistically significant difference in perception between public and private sector respondents. To achieve this objective, the following two hypotheses were developed:

**Null Hypothesis (H<sub>0</sub>):**

There is no significant difference in the perception of public and private sectors with regard to the critical success factors (CSFs) in public private partnerships for the infrastructure development in Afghanistan.

**Alternative Hypothesis (H<sub>1</sub>):**

There is a significant difference in the perception of public and private sectors with regard to the critical success factors (CSFs) in public private partnerships for the infrastructure development in Afghanistan.

## **4. Findings and Discussion**

### **4.1 Respondent Background Information**

The total number of respondents were 30, with 16 (53.3%) from the public sector and 14 (46.7%) from the private sector. The distribution of the respondents was as follows: 14 from central government (46.7%), 2 from local government (6.7%), 10 from construction companies (33.3%), 2 were financiers (6.7%), and 2 were consultants (6.7%). The central government is responsible for development, approval and execution of large infrastructure projects. The local government, which includes provinces, municipalities, districts and villages, may be held responsible for overseeing and the implementation of these projects.

The respondents included experienced individuals and subject matter experts from both the public and private sectors. Approximately 60% of the respondents possessed more than five years of experience while 13% had over 21 years of experience. 30% had 6 to 10 years of experience, 13% had 11 to 15 years of experience, and 3% had 16 to 20 years of experience.

### **4.2 Factors Influencing PPP in Afghanistan**

The Mean score and rank of the Relative Importance Index (RII) for the factors in each group was based on the overall respondents, as well as based on each sector separately (public and private sector). The results show that respondents either “strongly agree” or “agree” that the success

factors (CSFs) mentioned under each group category are influential for the success of PPPs in Afghanistan. The mean score for the factors ranged from 3.10 to 4.83.

The results of the mean and RII rank for each of the sub factors are tabulated in Table 1. Based on the respondents' overall perception concerning the importance of each sub factor for the implementation of PPPs in Afghanistan, the top three most important factors, in descending order of importance were:

*For Legal Framework and Institutional Setup:*

- 1) PPP Unit should include experienced technical and financial experts.
- 2) PPP law should promote various financing mechanisms for PPP projects.
- 3) PPP law should be established.

The two factors that the respondents least agreed with were hiring of external PPP advisors for the development of PPP policies and the ideological antipathy of public sector working with private sector.

The need for experienced and technical experts in Afghanistan's PPP unit was perceived as the most important factor to ensure the successful implementation of PPP delivery method in the infrastructure development of Afghanistan. According to recently published PPP law of Afghanistan, PPP Unit, named as "Central Public Private Partnership Authority", working with the Ministry of Finance, is responsible for regulating policies as well as analyzing, assessing and providing technical and financial support to entities involved in PPP projects (Afghanistan MOJ, 2016). Considering the important role of PPP Unit, it is crucial that the PPP Unit should include experienced individuals who have the expertise to intelligently lead and support the PPP contract preparation process including reducing bid times and costs, improving the quality of the procurement process- areas where most governments have little expertise (UN, 2008; The World Bank, 2015). This could be further supported with comments provided by one of the respondents, a high-level government official, saying that the president of Afghanistan specifically insisted the need for capacity building for the success of PPPs in Afghanistan.

The promotion of various financing mechanisms for PPP projects is ranked as the second most important factor. Despite several efforts in the last two years to increase generating local income to finance national projects, the majority of the national budget of Afghanistan is still sponsored by international donors. Only about 33% of Afghanistan's national budget is from domestic revenues (Ruttig & Bjelica, 2018). This is probably

the main reason why respondents think that the PPP law should encourage the mobilization of various financing mechanism in Afghanistan. Jeffery Delmon (2009) in his book entitled “Private Sector Investment in Infrastructure: Project Finance, PPP Projects and Risks” argues that the development of various financing mechanism can have vital role in the success of PPPs. He states that some of the common PPP financing mechanisms are (but not limited to): a) mobilizing local financial markets which are traditionally not accustomed to financing infrastructure project directly, b) reducing fiscal strain on local companies by sharing financing of PPP projects, and c) enhancing access to foreign financial markets and capital.

Despite the fact that the Afghan government has recently passed the PPP Law, the overall respondents perceive that the establishment and institutionalization of a favorable PPP Law is highly important for the success of PPP in Afghanistan. This is consistent with the findings of the European Bank for Reconstruction and Development (UN, 2008) which states that PPP projects are often successful with a good legal PPP framework. Furthermore, two of the respondents from the private sector made the comment that the PPP laws and policies should be customized based on the Afghan market conditions. This is consistent with the findings of the United Nations (UN, 2008) arguing that “a secure, predictable, stable, consistent and commercially-oriented framework of law and regulation” is needed for the success of PPPs.

Out of the thirteen factors related to the legal framework and institutional setup, “ideological antipathy of public sector working with private sector” with a mean score of 3.23 was ranked last by the respondents. This could be due to the fact that Afghanistan has shifted to a market economy since 2001. Government officials are accustomed to working with the private sector, which is why this factor is being perceived as relatively less critical. However, it should be noted that the move toward market economy and liberalization remains a controversial issue among many Afghans (Fishstein & Amiryar, 2015).

For Finance and Economic Issues- the top three most important factors are:

- 1) PPP project should have well defined objectives and deliverables.
- 2) Cost/benefit analysis should be conducted upfront
- 3) PPP project should have economic viability and adequate business case

The two factors in this group that were ranked last and the ones the respondents least agree with, were the restriction of domestic firms to

borrow money from international sources and the availability of foreign investor to finance PPPs in Afghanistan. The establishment of coherent and clear financial objectives for PPP project is perceived to be the most important factor among the others. This is consistent with the findings of the United Nations (UN, 2008) stating that PPPs should have economically the most efficient objectives with the goal to provide the best “value for the money”. In general, involving private finance is a major objective to build and/or transfer infrastructure projects when the government fund is insufficient. Furthermore, robust demand is considered to be an important factor for the establishment of financial objectives for PPPs (Abdel Aziz, 2007). This is also supported by the comment of one of the participants saying that the financial objectives for PPPs need to be identified in a way that provides acceptable and fair rate of return both for public and private sectors over the time of partnership.

The up-front cost/benefit analysis factor, ranked second, is crucial for the successful development of PPPs. Prior to the approval of a PPP project, government needs to assess the private sector’s bid against public sectors’ benchmarks to determine if the bid is providing the best “value for the money.” Several internationally recognized quantitative benchmarking tools such as Public-Sector Comparator (PSC) can be utilized for a full cost/benefit analysis (UN, 2008). Having economic viability and adequate business case for PPPs is ranked as the third most important factor. This complies with the findings of Abdel Aziz (2007), stating that sufficient knowledge should be obtained about the “market”, various financing options and their implications on the project in various conditions should be assessed. He further explains that new business tools (e.g., the use of performance specification over perspective specifications) should be used to enhance the economic viability and business efficiency of PPPs. Lastly, the majority of the respondents disagree with the belief that “foreign investors are available to finance a PPP project. This could be true to some extent considering the high level of risks associated with investment in Afghanistan. The continuation of on-going conflict, lack of security and transparency for investors, lack of incentives for investors and absence of a clear economic and investment vision to attract and retain investors are considered to be the important reasons for the low level international investments in Afghanistan.

For Major Risks Associated with PPPs in Afghanistan- the top three most important factors are:

- 1) Political and legislative instability

- 2) The lack of expertise in Public Sector to manage the risks; and the lack of expertise in Private sector to manage the risks.
- 3) Long approval and complex bureaucratic process.

The two factors in this group that respondents least agreed with, were the inclusion of the risk outlined in the proposal for the project and the lack of a strong private consortium.

With a mean value of 4.57, the overall respondents perceived that political and legislative instability is the major risk. This is consistent with the results of a questionnaire survey by Zhang (2005b) covering experts from various countries including Australia, China, India, Malaysia, Singapore, United Kingdom and the United States, stating that unstable political situation and instability of government are major barriers to the Public-Private Partnership in the infrastructure development.

The majority of respondents agreed that neither public nor private sector have adequate expertise to properly manage risks associated with PPP projects. This could be due to the fact that the PPP delivery method is new to both public and private sectors in Afghanistan. Similarly, Abdel Aziz (2007) argues that understanding the risk allocation between different parties and consequences of the allocation is crucial for the successful implementation of the PPP projects. Long approval process and complex bureaucracy was ranked as the third major risk associated with PPPs in Afghanistan. According to the United Nations (UN, 2008), unnecessary approval process and bureaucratic burdensome create significant challenges for the private sector and thus delays the start of the project.

Overall, the respondents ranked “The lack of a Strong and Stable Private Consortium” last. The results do not mean that a strong and stable private consortium is not important for the success of PPP projects in Afghanistan. Because, it has been proven in many countries around the world (e.g., UK) that the existence of a strong private consortium will have significant impact in reducing the risks associated with PPP projects (Akintoye & Beck et al., 2008). The reason respondent ranked this as last could be that the current infrastructure projects in Afghanistan are mostly financed either by international donors (e.g., World Bank, Asia Development Bank, and USAID) or the government, not a group of companies (consortium) willing to jointly sponsor a PPP project. Hence, many experts both in the public and private sectors are probably not accustomed with the structure and role of a private “consortium”.

For Political Instability and Security/Sociopolitical Issues- the top three most important factors are:

- 1) Both public and private sector should improve public awareness of PPPs.
- 2) Current Political and security uncertainties have negative impact on the execution of PPPs.
- 3) The existence of substantial land accusations and disputes demotivate private sector.

The one factor that respondents strongly disagreed with was that “The government is not committed to creating a legal framework for PPPs”.

Overall respondents ranked the enhancement of public awareness of PPPs as the most important factor for the successful implementation of PPPs in Afghanistan. Resilience against the implementation of major infrastructure projects can be promoted by meaningful public education that involves various media outlets including newspaper, television and radio (O'Rourke, 2007). The majority of respondents both from public and private sectors provided additional comment insisting on the importance of “Public awareness” since the PPP approach is relatively new in Afghanistan. Rationally, PPP partnerships can affect various group of individuals including employees (both in public and private sector), citizens receiving the services, financiers and developers. Therefore, it is important to openly communicate the objectives and benefits of PPP projects with all the stakeholders in order to minimize the resistance toward PPP projects.

As shown in Table 1 and ranked second with a mean score of 4.50, the negative impacts of on-going political and security uncertainties in Afghanistan was perceived to have negative impact on implementation of PPPs in Afghanistan. Logically, investors do not want to put their money into risk where there is no guarantee that their investment will be safe.

The existence of substantial land disputes was ranked as the third most important factor in this group. Decades of conflict, population displacement, changes in political and economic ideologies, and variable climate conditions (including drought) have created complex land ownerships in the country (ADB, 2014). Therefore, often major infrastructure projects such as roads can be delayed due to the disputes on land ownership.

Finally, respondents strongly disagree with the factor that government is not committed to creating a legal framework for the implementation of PPPs in Afghanistan. This could be true, since Afghan government has already passed the PPP Law which could be an indication of the government’s commitment to initiate judicial reforms concerning PPPs in Afghanistan. This is also consistent with the findings of PPP knowledge Lab

stating that Afghan government is committed to establishing long-term PPP programmes.

**Table 1: Results of the Mean and RII Rank for each Sub Factor**

Factor	Public Sector		Private Sector		Overall		
	Mean	Rank	Mean	Rank	Mean	RII Rank	
<b>No. Legal Framework and Institutional Setup</b>							
1.1	PPP unit should include experienced technical and financial experts	4.69	1	4.64	1	4.67	1
1.2	PPP law should promote various financing mechanisms PPP act/law should be established	4.63	2	4.43	2	4.50	2
1.3	PPP law should promote the delivery system that provide	4.38	5	4.43	2	4.4	3
1.4	Value for Money(VFM) PPP law should be incorporated to the annual development plan of government	4.44	3	4.29	4	4.37	4
1.5	Private Sector should provide training for their PPP personnel The government should provide training for their PPP personnel	4.44	3	4.29	4	4.37	4
1.5	training for their PPP personnel The government should provide training for their PPP personnel	4.31	6	4.29	4	4.30	5
1.6	PPP law should enforce the development of PPP guideline Ideological antipathy of private	4.19	7	4.21	8	4.2	6
1.7	sector working with the public sector negatively impact the PPP projects	4.13	8	4.29	4	4.2	6
	Procurement process should be shortened in order to expedite the execution of PPP projects	3.75	10	4	9	3.87	7
1.8	PPP unit should only focus on PPP policies, other government	4.00	9	3.64	11	3.83	8
1.9	departments should deal with the implementation External PPP advisors or 3rd Party experts should be hired to develop PPP policies	3.63	12	3.86	10	3.73	9
1.10	Ideological antipathy of public Sector working with the private	3.69	11	3.5	12	3.60	10

sector negatively impact PPP projects							
1.11		3.06	13	3.43	13	3.23	11
<b>No.</b>	<b>Finance and Economics Issues</b>						
2.1	PPP project should have well defined objectives and deliverables	4.81	1	4.86	1	4.83	1
2.2	Cost/benefit analysis should be conducted upfront	4.50	2	4.50	2	4.50	2
2.3	PPP Project should have economic viability and adequate business case	4.50	2	4.36	3	4.43	3
2.4	National Banking system should be strengthened in order to support financing a PPP project	4.38	4	4.29	4	4.37	4
2.5	Lessons learned from similar projects should be incorporated to the business case of a PPP project	4.25	6	4.21	5	4.23	5
2.6	Risk mitigation sources (bonds) should be available	4.31	5	3.70	7	4.03	6
2.7	Domestic and international sources should be available to finance a PPP project	3.64	9	3.93	6	4.00	7
2.8	The restriction of domestic firms to borrow money from international sources negative impact on PPP Projects	4.31	5	3.57	8	3.6	8
2.9	Foreign investors are available to finance PPP projects	3.88	8	3	9	3.60	8
<b>No.</b>	<b>Associated Risks</b>						
3.1	Political and legislative instability is a major risk	4.56	2	4.57	1	4.57	1
3.2	Private sector should enhance its expertise to manage the risk (lack of risk management experts in private sector)	4.56	2	4.29	5	4.47	2
3.3	Public sector should enhance its expertise to manage the risk	4.63	1	4.21	6	4.47	2
3.4	Long approval process and complex bureaucracy is risk	4.13	8	4.5	2	4.30	3
3.5	Economic instability and immaturity of financial market is a risk	4.25	6	4.36	3	4.3	4
	The lack of transparency is a risk						

3.6	Inappropriate and unfair risk transfer to the private sector	4.19	7	4.36	3	4.27	5
3.7	have negatively impact on PPP projects	4.38	5	4.21	6	4.27	5
3.8	The project proposal should include an outline of risks	4.44	4	4.07	9	4.23	6
3.9	The lack of a strong and stable private consortium is a risk	3.94	9	4.14	8	4.03	7
<b>No. Sociopolitical Issues</b>							
4.1	Both government and private sector should increase public awareness of PPP projects	4.63	1	4.79	1	4.70	1
4.2	Current political & security uncertainties have negative impact on the execution of PPP projects	4.38	2	4.64	2	4.5	2
4.3	The existence of land accusations and disputes demotivates private sector	3.81	3	4.07	3	3.93	3
4.4	Insufficient public support has negative impact on the implementation of PPP projects	3.38	4	3.57	5	3.47	4
4.5	The lack of a clear plan to ensure the continuation of PPP projects with the same contract terms under future governments	2.94	6	3.93	4	3.40	5
4.6	Government is not committed to creating a legal framework for PPP projects	3.25	5	2.93	6	3.10	6

Source: Data output from SPSSv.24

### 4.3 Perception of Public and Private Sectors Regarding the Identified Factors

An independent t-test was conducted to investigate the difference between the perception of public and private sectors regarding the level of their “agreement”. The results are tabulated in Table 2.

#### Null Hypothesis (H<sub>0</sub>):

There is no significant difference in the perception of public and private sectors with regard to the critical success factors (CSFs) in public private partnerships for the infrastructure development in Afghanistan.

#### Alternative Hypothesis (H<sub>1</sub>):

There is a significant difference in the perception of public and private sectors with regard to the critical success factors (CSFs) in public private partnerships for the infrastructure development in Afghanistan. Table 2

shows the statistically significant difference between the perceptions of the private and public sectors for each CSF. As shown in the table, for the majority of the identified CSFs (33 out of 36) there is no statistically significant difference between the perceptions of the public and private sectors with the calculated values ( $t$ -Calculated) less than the tabulated value ( $t$ -critical = 1.71) for each factor. The results fail to show a significant difference in the perceptions of the public and private sector participants with regard to the identified factors under each group. These results can either be attributed to the newness of the concept of PPP delivery method in Afghanistan and thus the participants from both sides consider the identified factors as critical for the successful execution of PPP projects for the infrastructure development of Afghanistan or to sampling error.

However, only three factors: availability of foreign investors to finance PPP projects with  $t$ -Calculated = 2.19, the need for public sector to enhance its expertise to manage the risk with  $t$ -Calculated = 1.83, and the lack of a clear plan to ensure the continuation of PPP projects with the same contract terms under future government administrations with  $t$ -Calculated = 2.33 are greater than their tabulated values ( $t$ -critical = 1.71). This means that there is a significant difference in the perception of public and private sector participants; hence, it leads to the acceptance of the alternate hypothesis. This difference can be attributed to the fact that the public and private sectors are two different stakeholders with different ideologies, responsibilities, and risks under a PPP contract. Therefore, each party may have different views about these factors in terms of importance for the successful implementation of PPPs in Afghanistan. For instance, respondents from the private sector are more concerned about the ideological instability of politicians regarding the implementation of long lead infrastructure projects. Therefore, they may consider the lack of a clear and promising plan that will ensure the PPP projects will continue with the same contract terms under future governments as a major risk for their investment. Similarly, the public sector (with a mean of 3.88), may think that foreign investors are available to finance PPP projects, whereas, private sector (with a mean of 3.00), may think that there are not enough foreign investors who are willing to finance PPP project. Finally, the need for public sector to enhance its expertise to manage the risks associated with PPP projects is more important to the public sector (with a mean 4.63) than the private sector (with a mean of 4.21). Rationally, private sector may not be concerned as much about public sectors' expertise, instead they are more concerned about enhancing their own expertise so that they can

successfully plan and execute a PPP project and thus obtain a sound financial return on their investment.

**Table 2: T-Test Analysis Results**

Critical Success Factors	t-Calculated	t-Critical	P value	Significance	Decision
<b>Category 1</b> 1.1	0.18	1.71	0.43	NS	Accept H <sub>0</sub>
1.2	0.83	1.71	0.21	NS	Accept H <sub>0</sub>
1.3	-0.14	1.71	0.45	NS	Accept H <sub>0</sub>
1.4	0.45	1.71	0.33	NS	Accept H <sub>0</sub>
1.5	0.73	1.71	0.24	NS	Accept H <sub>0</sub>
1.6	0.09	1.71	0.47	NS	Accept H <sub>0</sub>
1.7	-0.08	1.71	0.47	NS	Accept H <sub>0</sub>
1.8	-0.46	1.71	0.32	NS	Accept H <sub>0</sub>
1.9	-0.66	1.71	0.26	NS	Accept H <sub>0</sub>
1.10	0.73	1.71	0.24	NS	Accept H <sub>0</sub>
1.11	-0.61	1.71	0.27	NS	Accept H <sub>0</sub>
1.12	0.44	1.71	0.33	NS	Accept H <sub>0</sub>
1.13	-0.98	1.71	0.17	NS	Accept H <sub>0</sub>
<b>Category 2</b> 2.1	-0.32	1.71	0.38	NS	Accept H <sub>0</sub>
2.2	0.50	1.71	0.50	NS	Accept H <sub>0</sub>
2.3	0.51	1.71	0.31	NS	Accept H <sub>0</sub>
2.4	0.30	1.71	0.38	NS	Accept H <sub>0</sub>
2.5	0.15	1.71	0.44	NS	Accept H <sub>0</sub>
2.6	1.08	1.71	0.15	NS	Accept H <sub>0</sub>
2.7	0.16	1.71	0.44	NS	Accept H <sub>0</sub>
2.8	2.19	1.71	0.02	S	Accept H <sub>1</sub>
2.9	2.19	1.71	0.06	S	Accept H <sub>1</sub>
<b>Category 3</b> 3.1	-0.04	1.71	0.48	NS	Accept H <sub>0</sub>
3.2	1.09	1.71	0.15	NS	Accept H <sub>0</sub>
3.3	1.83	1.71	0.04	S	Accept H <sub>1</sub>
3.4	-1.50	1.71	0.07	NS	Accept H <sub>0</sub>
3.5	-0.46	1.71	0.33	NS	Accept H <sub>0</sub>
3.6	-0.80	1.71	0.21	NS	Accept H <sub>0</sub>
3.7	0.51	1.71	0.31	NS	Accept H <sub>0</sub>
3.8	1.57	1.71	0.07	NS	Accept H <sub>0</sub>
3.9	-0.74	1.71	0.23	NS	Accept H <sub>0</sub>
<b>Category 4</b> 4.1	-0.95	1.71	0.17	NS	Accept H <sub>0</sub>
4.2	-1.17	1.71	0.13	NS	Accept H <sub>0</sub>
4.3	-1.21	1.71	0.12	NS	Accept H <sub>0</sub>
4.4	-0.51	1.71	0.31	NS	Accept H <sub>0</sub>
4.5	-2.33	1.71	0.01	S	Accept H <sub>1</sub>
4.6	0.67	1.71	0.25	NS	Accept H <sub>0</sub>

Note: NS: Not statistically significant difference S: Statistically significant difference Level of significance,  $\alpha = 0.05$  or confidence level of 95 %

Source: Data output from SPSSv.24

## 5. Conclusion and Recommendation

This study examined and ranked key factors that play a critical role in the success of PPP projects in Afghanistan- a country where there is an overwhelming need for public infrastructure development. In general, the results indicate that the respondents either agreed or strongly agreed with most of the factors, which were grouped under four principle categories: 1) Legal Framework and Institutional Setup, 2) Finance and Economics of PPP, 3) Associated Risks, and 4) Sociopolitical Issues. Furthermore, the results of an independent t-test revealed that only three factors were perceived differently by the public and private sectors. The results, particularly the three factors that were perceived significantly different by two parties, could be useful to the government as a regulator in understanding private sector's need and priorities in addressing PPP issues. For instance, the results indicated that the private sector perceived "the lack of a clear plan to ensure the continuation of PPP projects under future governments" as an important risk for their investment in PPP projects. Hence, the Afghan government in the future may want to consider providing a grantee to the private sector that it will ensure the PPP projects will continue with the same contract terms under future governments.

The findings of the study can be useful to contractors, financial institutions, the government of Afghanistan, and researchers in various ways. First, by identifying and ranking a comprehensive list of factors affecting PPP projects in Afghanistan, stakeholders will be able to prioritize them in addressing their concerns. Second, understanding the difference in ranking and perceived importance of identified CSFs between the two principle parties in a PPP contact- the private sector and public sector- can help the government, as the regulator, to address the needs of the private sector while engaging them in PPP projects. Finally, this study provides a distinctive framework, a "checklist," which could be adopted for future empirical research studies in Afghanistan and other developing countries that intend to navigate the success of PPPs.

### 5.1 Limitations of the Research

The study has its limitations. While every PPP project has unique characteristics and nature, the factors mentioned in this study may not specifically address the issue concerning different types of PPP projects. Therefore, future researchers may want to investigate factors for a specific sector or a project. Secondly, the response of the 14 participants may not be representative of the entire private sector population, although it is not

easy to find the right experts in Afghanistan where PPP is a relatively new concept. Finally, the factors in this study are not exhaustive and do not include every conceivable question that could be asked. Despite its limitations, the authors believe that the study provides essential information to all stakeholders about some of the fundamental factors that need to be addressed in order to better the likelihood of successful implementation of PPP projects in Afghanistan, and therefore the paper recommends that the identified CSFs should be given utmost consideration.

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