

# Critical Success Factors and Constraints for Public-Private Partnerships in Infrastructure Development: Evidence from Afghanistan

Kardan Journal of Economics and Management Sciences

5 (1) 15–54

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Kardan Publications

Kabul, Afghanistan

DOI: 10.31841/KJEMS.2022.109

<https://kardan.edu.af/Research/CurrentIssue.aspx?i=KJEMS>

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Received: 02 Nov 21

Revised: 12 Jan 22

Accepted: 24 Mar 22

## Abstract

*Like other developing countries, infrastructure development is a major concern for the Afghanistan government. Since Public-private partnerships. In Afghanistan, public-private partnership is considered an appropriate alternative to the traditional procurement method for infrastructure development. Partnering with private sector investors enables the public sector to bridge the financial gap and utilize private sector skills and technology. This research aims to identify and evaluate the critical success factors (CSFs) and constraints for public-private partnerships in infrastructure development based on evidence from Afghanistan. Data collected through a structured questionnaire survey were analyzed to achieve the objectives. The questionnaire was developed based on in-deep and comprehensive review of the literature. Furthermore, the relative importance index method was employed as the analysis technique. This study identifies and assesses 25 CSFs and 25 Constraints for infrastructure PPP. The results indicate that all investigated CSFs and constraints are ranked important. Except for one CSF, which is perceived as highly important, all other CSFs and constraint factors are ranked high to medium important.*

**Keywords:** Public-private partnership, Critical success factors, constraints, public sector, private sector, Afghanistan.

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## Introduction

Infrastructure development is the primary concern in many countries. Almost in every country, whether developed or developing, infrastructure is seen as a critical driver of economic growth, increasing a country's autonomy and substantially raising living standards (Trebilcock & Rosenstock, 2015; Chou & Pramudawardhani, 2015). In developing countries, where basic infrastructure is usually lacking, from one hand investment in basic infrastructure projects is generally seen as an urgent priority; on the other hand, implementing infrastructure projects is considered as a test for governments budgetary and skills, both institutional and technological (Trebilcock & Rosenstock, 2015).

Governments sought alternative policy tools for financing and delivering infrastructure projects to address fiscal constraints and growth concerns in infrastructure projects' complexity, resulting in public-private partnerships in many countries (Kang et al., 2019; Chou & Pramudawardhani, 2015). As a result, during the past decades, the engagement of the private sector in financing and delivery of public infrastructure has increased considerably (Li et al., 2005). The successful implementation of public-private partnership (PPP) projects in several developed countries in Australia, America, and Europe is well evidenced and globally witnessed (Cheung et al., 2012).

In both developed and developing countries, public-private partnerships have emerged as a prominent method for delivering large and complex infrastructure projects, and PPP is popular globally (Bildfell, 2018; Hodge & Greve, 2007). Previous literature indicates that alongside playing a vital role in infrastructure development, PPPs significantly contribute to economic growth, increase the sovereignty and autonomy of a country, raise living standards, address budgetary and capacity constraints in the public sector, minimize project costs, ensure a higher level of efficiency, share or transfer the risks to the private sector, promote invocation, ensure on time and within budget delivery, and enhance accountability (Biygautane, 2016; Boyer & Slyke, 2018; Chou & Pramudawardhani, 2015; Hodge & Greve, 2016; Mwakapala & Sun, 2020; Trebilcock & Rosenstock, 2015; Willems et al., 2017).

For effective and successful implementation of infrastructure PPPs, identification of Critical Success Factors (CSFs) is considered a prerequisite, enabling efficient allocation of limited resources (Zhang, 2005; Chileshe et al., 2020; Li, 2005; Liu et al., 2015). Similarly, researchers suggest that identifying and evaluating constraints for implementing PPPs in infrastructure development is essential to overcome them, avoid delays, and ensure project success (Babatunde et al., 2015; Chan et al., 2010; Osei-Kyei & Chan, 2017; Yang et al., 2010).

On the one hand, most of the previous studies on PPPs are conducted in developed countries' contexts; on the other hand, usually, both CSFs and constraints for PPPs in infrastructure development are investigated in the context of either developed or developing economies or for a specific country (see: Babatunde et al., 2012; Babatunde et al., 2014; Chan et al., 2010; Cheung et al., 2012; Chileshe et al., 2020; Dairu & Muhammad, 2015; Gidado, 2010; Hwang et al., 2013; Ismail, 2013; Ismail & Haris, 2014; Karimi & Piroozfar, 2015; Li et al., 2005; Niazi & Painting, 2018; Sanni, 2016). Moreover, for

countries that are new to PPP, identification of CSFs and constraints is more critical to maximize the benefits of this method while minimizing risks for all parties involved (Cheung et al., 2012). Also, the relative significance of CSFs and constraints for PPP in infrastructure development is less known (Li et al., 2005).

Because of the success of PPP in developed countries, it has become an appealing alternative to traditional methods for procuring public projects. In Afghanistan, the need for private sector involvement is evident to bridge the budget and financial gap and address cost, time, quality, and sustainability concerns, which are usually associated with traditional procurement methods. Therefore, for involving the private sector in financing infrastructure, the Government of Afghanistan launched the program of public-private partnership (PPP). In August 2016, Central Partnership Authority (CPA) was created as a coordinating directorate whitening structure of the Ministry of Finance (MoF). It was transferred to the Investment Facilitation Unit's (IFU) structure in the Administrative Office of the President (AOP) in 2020. Also, the PPP Law was passed and enacted in 2016. Since then, CPA has developed PPP legal framework and policy.

Thus, to bridge this gap of knowledge, particularly in Afghanistan, this research aims to identify and evaluate CSFs and constraints for PPPs in infrastructure development. This study will enable the government and PPPs stakeholders, particularly potential private sector investors, to better understand CSFs and constraints for PPPs implementation in infrastructure development in Afghanistan. Furthermore, the findings of this research are expected to assist stakeholders in PPP strategies to partner PPP markets of Afghanistan and other developing countries successfully.

## **2. Literature Review**

### **2.1 PPP Meaning and Definition**

The actual phenomenon of PPP is not new; public-private cooperation goes back centuries, and private sector engagement in infrastructure development can be traced to Roman Empire (Biygautane, 2016; Bovaird, 2010; Hodge, 2006). Bovaird (2010) argues that the term "Public-Private Partnership" was used in the 1970s, and even books have been written on such partnerships in the 1980s. Scholars agree that PPP is widely recognized and adopted in both developed and developing countries after 1992 when the UK government initiated the Private Finance Initiative (PFI) to provide public infrastructure (Biygautane, 2016; Bovaird; 2010; Cheung et al., 2012; Li

et al., 2005). However, in the 1980s, the term PPP was used for urban development in the US and UK (Greve, 2006).

However, public-private partnerships are widely used for infrastructure projects; Still, there is no standard and widely agreed definition for public-private partnerships. Hodge & Greve (2007, p. 545) consider PPP simply as

*“Cooperative institutional arrangements between public and private sector actors.”*

Garvin & Bosso (2008, p. 163) provided a broader definition of PPP and also defined its features as

*“A long-term contractual arrangement between the public and private sectors, where mutual benefits are sought and where ultimately (a) the private sector provides management and operating services and/or (b) puts private finance at risk.”*

Grimsey & Lewis (2002, P. 108) provide a similar definition while they focus on the roles of the private sector, and they view a PPP

*“An agreement where the public sector enters into long-term contractual agreements with private sector entities for the construction or management of public sector infrastructure facilities by the private sector entity, or the provision of services (using infrastructure facilities) by the private sector entity to the community on behalf of a public sector entity.”*

Other scholars view a PPP as more than a long-term contractual agreement with the characteristics mentioned above. They consider a PPP as durable cooperation between private and public actors; jointly develop products and/or services and share expenditures, risks, resources, and profits that are associated with such products and services (Ham & Koppenjan, 2001; Klijn & Teisman, 2003). The durability of contract shared production and/or service and risk-sharing are the elements shared in almost all definitions.

Garg & Garg (2017) compared more than ten definitions of PPP. Considering different definitions, some scholars believe that PPP is a broader phenomenon. For instance, Cheng et al. (2021) argue that PPP is currently defined as a family of concepts for efficient communication between PPP actors from various backgrounds. Similarly, Hodge & Greve (2016) consider a PPP to cover five meanings: project/activity,

organizational/project delivery method, policy, governance tool, and culture and context.

Warsen et al. (2018) argued that many forms of PPP possibly caused a variety of definitions. They stated that PPPs could have various sizes and shapes, from broadly mutual collaborative efforts to ratios to strict contractual partnerships (Warsen et al., 2018). In addition, the degree to which the risks, ownership, and responsibilities are transferred from the public to the private sector within a project causes a PPP to possess various structures (Morallos & Amekudzi, 2008).

Risk sharing is a common aspect that is discussed in almost all definitions. Scholars also discussed it as an integral and vital aspect. Sharing of risk is stated explicitly as a key aspect of PPP almost in every definition, which differs from previous views on risk-sharing through other arrangements that were more implicitly, such as outsourcing/contracting out (Hodge & Greve, 2016). Integrated risk-sharing agreements which make both parties accountable for the project's success are the defining characteristic of infrastructure PPPs (Boyer & Slyke, 2018). Literature indicates that private and public sectors have specific qualities, and while integrating these qualities, risk-sharing is a significant consideration for each sector (Hodge & Greve, 2007)

However, PPPs were originally considered as a derivative of the privatization movement, but to a high extend, scholars agree that PPP is not a market introduction mechanism or privatization; rather, it is a sort of collaboration (Jamali, 2004). In privatization, the role of government is reduced to regulation, and ownership of the facility is transferred to the private partner. However, in PPPs, the public sector owns the facility and maintains some fundamental roles, risks, and responsibilities (Boyer & Slyke, 2018). Therefore, although the asset remains with the private sector after completion of the contract period, such arrangements would not be considered PPPs (Trebilcock & Rosenstock, 2015).

The reasons for PPPs adoptions are context-specific (Biygautane, 2016). There is no single reason and Rationale for PPPs; there are many reasons for organizations and institutions to adopt a partnership approach for public services or goods delivery (Muraguri, 2010). Muraguri (2010) further argues that each partnership is a function of its specific economic, social, and political context.

Alongside reducing the financial gap, utilizing private sector capacity to minimize costs, ensure higher efficiency; sharing or transferring larger risks

to the private sector – beyond construction, i.e., design, operation, management, and maintenance of public asset; innovation, better timely and within budget delivery, enhanced accountability for performance are other reasons in support of PPPs (Biygautane, 2016; Boyer & Slyke, 2018; Hodge & Greve, 2016; Mwakapala & Sun, 2020; Willems, Dooren, & Hurk, 2017).

Hodge & Greve (2016) identified 24 objectives of PPP, which include both technical or explicit and non-technical or implicit goals. In addition, a study investigated rationales for implementation of PPP in Malaysia, and the results highlighted “to enhance private sector involvement in economic development” as the most significant among all five rationales (Ismail & Haris, 2014).

## **2.2 Critical Success Factors (CSFs) For PPP Projects**

In the 1960s, Ronald Daniel presented the concept of CSFs, and he used the term “success factors” for the first time (Chien, 2014). Almost two decades later, in the late 1970s, John F. Rockart of MIT Sloan School of Management built on this concept and popularized it; he used it broadly to assist businesses in implementing their business projects and strategies (Chien, 2014; Sanni, 2016). CSFs are defined as

*“The few key areas of activity in which favorable results are necessary for a particular manager to reach his goals”* (Bullen & Rockart, 1981, p. 3).

Since then, the CSFs methodology has been broadly used in various industries, and several authors have applied this concept to different fields (Liu et al., 2015; Sanni, 2016).

Past researches have evaluated the CSFs of construction projects in general (Ismail, 2013). Since the 1990s, studies on CSFs within the context of PPP projects have emerged, and since then, significant researches have been conducted in this area (Liu et al., 2015; Ismail, 2013). Ismail (2013) divided available literature on CSFs of PPP into two types, a) studies which study the CSFs of PPP projects in general; and b) studies that examine the CSFs of a particular PPP project. Also, studies examined CSFs from the perspective of various sectors and countries (Osei-Kyei & Chan, 2018).

Many authors have investigated and identified critical success factors of public-private partnerships in both developed and developing territories. For example, Osei-Kyei & Chan (2015) reviewed studies from 1990 until 2013 on CSFs for PPPs implementation, concentrated on specific countries and

regions, and found that the interest of researchers has increased in this field since 1990. Also, the study identified more than 35 CSFs for PPPs, and it indicates that allocation and sharing of risk, a strong private consortium, political support, public or community support, and transparency in the procurement process are the most common CSFs addressed by the studies (Osei-Kyei & Chan, 2015).

According to a cross country comparison of CSFs for PPPs by Chou & Pramudawardhani (2015, in Indonesia, desirable legal framework, responsibility, and commitment of both sectors, transparency in the procurement process, clarity of roles and responsibilities, and favorable governance/governmental success, and in Taiwan, stability of macroeconomic condition, and appropriately organized and committed public agency are considered to be the most significant CSFs. Similarly, In Singapore, committed and properly organized public agency, appropriate allocation and sharing of risk, and a robust private consortium, in China, desirable legal framework, appropriate allocation and sharing of risk, and responsibility and commitment of both sectors, and in the United Kingdom, a robust private consortium, appropriate allocation and sharing of risk, and availability of financial market are considered as the top “most important” CSFs (Chou & Pramudawardhani, 2015).

Using the case of Hong Kong and Ghana, Osei-Kyei & Chan (2017) compared CSFs for PPPs in developing and developed countries and found that in both countries, two factors are ranked very critical, four are rated lower, and 16 factors are rated differently. The research also reveals that in Ghana, CSFs related to economic and socio-political and economic situations for PPP projects are mostly considered more important, whereas, in Hong Kong, CSFs directly related to the organization and relationship of PPP projects are ranked higher (Osei-Kyei & Chan, 2017).

Political support and acceptability for PPPs, government’s positive attitude towards private sector investments, stable political environment, the existence of a favorable legal framework and policy, and committed and well organized public authority are the top five important CSFs, and tax rebate in imports is the most less important CSF for PPPs in developing countries (Osei-Kyei & Chan, 2017).

Other studies investigated CSFs for PPPs concentrating on specific countries. Niazi & Painting (2018) explored CSFs for PPP in the construction industry of Afghanistan, and they identified and ranked 18 CSFs. It is found that favorable legal framework, political support, and transparent procurement process are the top-ranked CSFs which are followed by good

governance, available financial market, and adequate risk allocation and sharing (Niazi & Painting, 2018).

Some authors studied CSFs for PPP by segregating the results based on the private and public sectors' participants. In the Nigerian context, for example, favorable socioeconomic factors, political support and good governance, a short construction period, and providing publicly needed services are considered key success factors for the private sector, while leadership focus, economic policy and risk allocation, and project feedback are key success factors for the public sector (Sanni, 2016). Similarly, according to Ismail (2012), in Malaysia, good governance is regarded as the most important success factor by participants from both sectors, followed by responsibility and commitment from both sectors, the technical feasibility of the project, transparency in the procurement process, and the availability of a favorable legal framework. Whereas, from the perspective of private sector participants, the availability of a financial market, a favorable legal framework, the responsibility and commitment of the private and public sectors, and sound economic policy are the other four most important success factors (Ismail, 2013). Ismail (2013) stated that rating the importance of success factors between private and public sectors was most significantly different.

Many authors identified CSFs for PPP projects in different countries. Table 2.1 presents the CSFs of PPP from the literature review.

**Table 2.1 CSFs for PPPs from literature review**

| CSF  | Source   |
|--|--|
| Appropriate/favorable legal and regulatory framework | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Dulaimi et al. (2010); Hwang et al. (2013); Ismail (2013); Jamali (2004); Jefferies et al. (2002); Li et al. (2005); Mladenovic et al. (2013); Ng et al. (2012); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018) |
| Political/Government support                         | Ahmadabadi & Gholamreza (2019); Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Dulaimi et al. (2010); Ismail (2013); Jacobson & Choi (2008); Jefferies et al. (2002);  |



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|   | Jefferies (2006); Li et al. (2005); Ng et al. (2012); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018)   |
| Good governance                                       | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Ismail (2013); Li et al. (2005); Niazi & Painting (2018)  |
| Political stability                                   | Dairu & Muhammad (2015); Mladenovic et al. (2013); Ng et al. (2012); Osei-Kyei & Chan (2017, 2018)   |
| Transparent PPP process                               | Hwang et al. (2013); Jamali (2004); Mladenovic et al. (2013); Osei-Kyei & Chan (2017, 2018)  |
| Appropriate risk allocation and sharing               | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Dulaimi et al. (2010); Hwang et al. (2013); Ismail (2013); Li et al. (2005); Liu & Wilkinson (2014); Meng et al. (2011); Mladenovic et al. (2013); Ng et al. (2012); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018); Sanni (2016) |
| Competitive tendering process                         | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Ismail (2013); Jefferies (2006); Li et al. (2005); Liu & Wilkinson (2014); Meng et al. (2011); Mladenovic et al. (2013); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018)  |
| Existence of a PPP project champion                   | Osei-Kyei & Chan (2017, 2018)  |
| Government providing guarantee                        | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Ismail (2013); Li et al. (2005); Ng et al. (2012); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018)   |
| Well organized and committed public agency/department | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Hwang et al. (2013); Ismail (2013); Li et al. (2005); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018)   |

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| Mature and available financial market           | Ahmadabadi & Gholamreza (2019); Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Ismail (2013); Li et al. (2005); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018)   |
| Sound economic policies                         | Ahmadabadi & Gholamreza (2019); Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chou & Pramudawardhani (2015); Ismail (2013); Li et al. (2005); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018); Sanni (2016)   |
| Stable macroeconomic indicators/conditions      | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Dulaimi et al (2010); Ismail (2013); Li et al. (2005); Niazi & Painting (2018); Mladenovic et al. (2013); Ng et al. (2012); Osei-Kyei & Chan (2017, 2018)            |
| Government providing financial support          | Ng et al. (2012); Osei-Kyei & Chan (2017, 2018)   |
| Technological innovation                        | Osei-Kyei & Chan (2017, 2018)   |
| Technology transfer                             | Jefferies et al. (2002); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018)   |
| Public/Community participation and coordination | Ismail (2013); Osei-Kyei & Chan (2017, 2018)  |
| Public/Community support                        | Ahmadabadi & Gholamreza (2019); Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Jefferies (2006); Jefferies et al. (2002); Li et al. (2005); Ng et al. (2012); Jacobson & Choi (2008); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018) |
| Environmental impact of the project             | Jefferies (2006); Jefferies et al. (2002); Li et al. (2005); Ng et al. (2012); Osei-Kyei & Chan (2017, 2018)  |
| Clear project brief and design development      | Osei-Kyei & Chan (2017, 2018)   |
| Reliable service delivery                       | Ng et al. (2012); Osei-Kyei & Chan (2017, 2018)   |

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| Employment of competent transaction advisors            | Meng et al. (2011); Osei-Kyei & Chan (2017, 2018); Tang & Shen (2013); Tang et al. (2013)  |
| Choosing the right private consortium                   | Osei-Kyei & Chan (2017, 2018)  |
| Reasonable user fee charge                              | Ng et al. (2012); Osei-Kyei & Chan (2017, 2018).   |
| Streamline of/efficient approval process                | Liu & Wilkinson (2014); Osei-Kyei & Chan (2017, 2018); Sanni (2016)  |
| Long-term demand for the project                        | Ng et al. (2012); Osei-Kyei & Chan (2017, 2018).   |
| Right project identification                            | Jefferies (2006); Jefferies et al. (2002); Osei-Kyei & Chan (2017, 2018)   |
| Technical feasibility                                   | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Ismail (2013); Jamali (2004); Jefferies (2006); Jefferies et al. (2002); Li et al. (2005); Niazi & Painting (2018)  |
| Detailed project planning                               | Mladenovic et al. (2013); Osei-Kyei & Chan (2017, 2018).   |
| Strong and good private consortium                      | Ahmadabadi & Gholamreza (2019); Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Dulaimi et al. (2010); Hwang et al. (2013); Ismail (2013); Li et al. (2005); Ng et al. (2012); Niazi & Painting (2018); Osei-Kyei & Chan (2017, 2018) |
| Clear goals and mutual/multi-benefit objectives         | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chou & Pramudawardhani (2015); Ismail (2013); Jacobson & Choi (2008); Li et al. (2005); Osei-Kyei & Chan (2017, 2018); Sanni (2016); Tang et al. (2013)   |
| Thorough and realistic cost/benefit assessment/analysis | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Li et al. (2005); Niazi & Painting (2018); Sanni (2016)  |
| High level of enthusiasm and willingness from parties   | Jacobson & Choi (2008); Osei-Kyei & Chan (2017, 2018)  |

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| Commitment and responsibility of public and private sectors | Babatunde et al. (2012); Chan et al. (2010); Cheung et al. (2012); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Ismail (2013); Jacobson & Choi (2008); Li et al. (2005); Niazi & Painting (2018) |
| Shared authority between public and private sectors         | Babatunde et al. (2012); Cheung et al. (2012); Chileshe et al. (2020); Chou & Pramudawardhani (2015); Hwang et al. (2013); Ismail (2013); Li et al. (2005); Ng et al. (2012); Niazi & Painting (2018)       |
| Open and frequent communication among stakeholders          | Jacobson & Choi (2008); Osei-Kyei & Chan (2017, 2018); Sanni (2016); Tang & Shen (2013); Tang et al. (2013).  |
| Clarity of roles and responsibilities among parties         | Chou & Pramudawardhani (2015); Hwang et al. (2013); Osei-Kyei & Chan (2017, 2018); Tang & Shen (2013); Tang et al. (2013)   |
| True/strong partnership                                     | Ahmadabadi & Gholamreza (2019); Mladenovic et al. (2013); Sanni (2016)  |
| Alignment with government's strategic objectives            | Ng et al. (2012); Sanni (2016)  |
| Clear and precise briefing documents                        | Sanni (2016); Tang et al. (2013)  |
| Clearly defined coordination mechanisms                     | Sanni (2016)  |
| Nature of contractual agreement                             | Sanni (2016)  |
| Achieving the objectives of the partnership                 | Sanni (2016)  |
| Feedback from completed projects                            | Sanni (2016); Tang et al. (2013)  |
| Clarification of contract documents                         | Chou & Pramudawardhani (2015); Hwang et al. (2013)  |

### **2.3 Public-Private Partnership Constraints**

In addition to numerous perceived advantages and benefits of PPP, some factors hinder its successful implementation. Scholars studied implementation constraints and barriers in PPPs in the context of developing and/or developed economics or for a specific country.

Constraints and their significance differ for different countries. For instance, using the case of Hong Kong and Ghana as an example, Osei-Kyei & Chan (2017) empirically compared implementation constraints in PPP between developed and developing countries. The results indicate that 6 of 15 constraints are differently ranked, two are considered most critical, and the other two are significant in both countries (Osei-Kyei & Chan, 2017).

Osei-Kyei & Chan (2017) argued that a huge difference in the significance of constraints indicates and confirms that features and characteristics of PPP markets are different in developed and developing jurisdictions. This claim is consistent with previous literature in this context. According to Babatunde et al. (2015), socio-political and economic condition-related barriers are critical in Nigeria – which is inconsistent with findings of Osei-Kyei & Chan (2017). According to Babatunde et al. (2015), highly ranked constraints to PPP in developing countries are related to factors such as capacity deficiencies in both sectors, lack of proper political will and administrative problems, social and economic related problems. Based on the case of Nigeria, Babatunde et al. (2015) identified 58 constraints to PPP in developing economics, and it was found that all of them are serious. Conflicts of interests among the stakeholders, political intervention in the process of procurement or politicization of the concessions, lack of political stability or uncertainty of the political environment, lack of accountability and transparency, and improper financial projections and access to funds are the few top barriers out of 16 highest ranked constraints among all 58 (Babatunde et al., 2015).

Some studies focused on exploring constraints to PPP in specific countries. For example, in Malaysia, longer negotiation delays, absence of government procedures and guidelines on PPP, higher charges to direct users, longer delays caused by political debate, and lack of clarity over government goals and criteria of evaluation are the top five - out of 14 - constraints for using PPP schemes (Ismail & Haris, 2014). Corruption is the leading risk and constraint factor for PPP in Iraq, followed by Scarcity of private funds, Insufficient public administration processes, absence of legal framework, and land acquisition-related delays and problems (Rezouki & Hassan, 2019). Dairu & Muhammad (2015) determined 26 constraint factors and grouped them into four main factors – political, economic, legal, and technical/other. Furthermore, political instability (political), imbalance supply and demand (economic), fear of change in tax regulation (legal), lack of government in handling PPP transaction (technical/other) are ranked as the most influential sub-constraints factors in each group of constraint factors in Nigeria (Dairu & Muhammad, 2015).

Many researchers studied barriers to PPPs in a specific sector or a particular type of PPP in a country. For example, Mahalingam (2010) investigated barriers to urban PPPs in India and considered distrust between both sectors, lack of political willingness to PPPs development, absence of enabling institutional environment for PPPs, lack of capacity in the public sector to prepare the project, and poorly structured and designed PPP project as the most important. Similarly, in Tanzania, Lack of proper PPP knowledge and skills, poor tender and contract documents of PPP, public partner improper project management and supervision, inappropriate legal framework, and misinformation about the financial capability of the private partner are the most critical constraints hindering the implementation of PPP housing projects (Kavishe & Chileshe, 2019). Ishawu et al. (2020) identified institutional barriers to PPP adoption from the perspective of the developing economy of Ghana, and the results indicate that lack of government procedures and guidelines was considered the most significant constraint followed by greater risk relying on the public partner, higher charges to direct users, reaching of very few schemes to the contract phase, and high participation cost. Moreover, for implementing small scale PPP projects, being unable to define small projects, same procedures and processes of government for both small and large scale projects, relatively high costs of the transaction, lack of capacity in the public sector, institutional structure-related issues (i.e., additional approval of local government) are perceived as major constraint factors (Thierie & Moor, 2017).

In the context of Afghanistan, only Karimi & Piroozfar (2015) studied constraints in the implementation of PPP. Out of the total of 23 constraint and risk factors, security-related problems, corruption, lack of accountability and transparency, absence of political guidelines, and lack of capacity in the public sector are figured out as the most influential constraints factors, while access to the land, social and cultural environment and difficulties in obtaining foreign exchange are considered as less important constraints (Karimi & Piroozfar, 2015).

Table 2.2 shows the constraint factors for PPP from the literature review with relevant resources.

**Table 2.2 Constraints to PPP from literature review**

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| Constraint                               | Source  |
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| Lengthy delay in finalizing negotiations | Babatunde et al. (2015); Chou & Pramudawardhani (2015); Hwang et al. (2013); Ishawu et al. (2020); Ismail & Haris |

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|--|---|
|  | (2014); Karimi & Piroozfar (2015); Li et al. (2005); Osei-Kyei & Chan (2017)  |
| Lack of experience and appropriate skills in PPP project delivery  | Babatunde et al. (2014, 2015); Dairu & Muhammad (2015); Hwang et al. (2013); Ishawu et al. (2020); Ismail & Haris (2014); Karimi & Piroozfar (2015); Kavishe & Chileshe (2019); Kavishe et al. (2018); Li et al. (2005); Osei-Kyei & Chan (2017); Rezouki & Hassan (2019) |
| Lengthy delay due to political debate                              | Babatunde et al. (2014, 2015); Ismail & Haris (2014); Li et al. (2005); Osei-Kyei & Chan (2017)   |
| Unstable economic and commercial Conditions                        | Osei-Kyei & Chan (2017)   |
| Complex contractual negotiations                                   | Ishawu et al. (2020); Ismail & Haris (2014); Karimi & Piroozfar (2015); Osei-Kyei & Chan (2017)   |
| High cost of project financing                                     | Chou & Pramudawardhani (2015); Ishawu et al. (2020); Ismail & Haris (2014); Osei-Kyei & Chan (2017)   |
| Misallocation and incomplete transfer of risks                     | Chou & Pramudawardhani (2015); Kavishe & Chileshe (2019); Osei-Kyei & Chan (2017); Rezouki & Hassan (2019);   |
| Lengthy delay due to public opposition and agitations              | Babatunde et al. (2014, 2015); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Hwang et al. (2013); Osei-Kyei & Chan (2017)   |
| Absence of comprehensive and clear policy guidelines and procedure | Babatunde et al. (2014, 2015); Dairu & Muhammad (2015); Ishawu et al. (2020); Ismail & Haris (2014); Karimi & Piroozfar (2015); Mahalingam (2010); Osei-Kyei & Chan (2017); Rezouki & Hassan (2019)   |
| High end-user fee charges  | Dairu & Muhammad (2015); Ishawu et al. (2020); Ismail & Haris (2014); Li et al. (2005); Osei-Kyei & Chan (2017)   |
| Weak public institutional structure and capacity                   | Babatunde et al. (2014, 2015); Kavishe & Chileshe (2019); Kavishe et al. (2018); Osei-Kyei & Chan (2017)  |
| Lack of capacity in the public sector                              | Babatunde et al. (2014, 2015); Dairu & Muhammad (2015); Karimi & Piroozfar  |

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|--|---|
|  | (2015); Mahalingam (2010); Rezouki & Hassan (2019)  |
| Negative public perception on PPP transactions               | Babatunde et al. (2015); Dairu & Muhammad (2015); Osei-Kyei & Chan (2017); Rezouki & Hassan (2019)  |
| Immature financial market                                    | Babatunde et al. (2014, 2015); Chou & Pramudawardhani (2015); Hwang et al. (2013); Osei-Kyei & Chan (2017)  |
| High participation and transaction Costs                     | Ishawu et al. (2020); Ismail & Haris (2014); Kavishe & Chileshe (2019); Kavishe et al. (2018); Li et al. (2005); Osei-Kyei & Chan (2017)  |
| High use of unsolicited proposals                            | Osei-Kyei & Chan (2017)   |
| Confusion over government objectives and evaluation criteria | Ishawu et al. (2020); Ismail & Haris (2014); Li et al. (2005)   |
| High risk relying on private sector                          | Ishawu et al. (2020); Ismail & Haris (2014); Li et al. (2005)   |
| Excessive restrictions on participation                      | Ishawu et al. (2020); Ismail & Haris (2014); Li et al. (2005)   |
| Political instability  | Babatunde et al. (2015); Chou & Pramudawardhani (2015); Dairu & Muhammad (2015); Hwang et al. (2013); Ishawu et al. (2020); Karimi & Piroozfar (2015); Rezouki & Hassan (2019)  |
| Lack of /reduced transparency and accountability/ corruption | Babatunde et al. (2014, 2015); Chou & Pramudawardhani (2015); Chou et al. (2012); Dairu & Muhammad (2015); Hwang et al. (2013); Ishawu et al. (2020); Ismail & Haris (2014); Karimi & Piroozfar (2015); Kavishe & Chileshe (2019); Kavishe et al. (2018); Li et al. (2005); Rezouki & Hassan (2019) |
| Difficulties in securing credit                              | Babatunde et al. (2015); Karimi & Piroozfar (2015)  |
| Lack of or inadequate legal and regulatory framework         | Babatunde et al. (2014, 2015); Chou & Pramudawardhani (2015); Hwang et al. (2013); Karimi & Piroozfar (2015); Kavishe &   |



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|  |  |
|--|--|
|  | Chileshe (2019); Kavishe et al. (2018); Rezouki & Hassan (2019)  |
| Difficulties in importing of material & equipment                      | Dairu & Muhammad (2015); Karimi & Piroozfar (2015)   |
| Land accusation problems   | Babatunde et al. (2014, 2015); Chou & Pramudawardhani (2015); Chou et al. (2012); Karimi & Piroozfar (2015); Rezouki & Hassan (2019) |
| Potential conflicts of interests among the stakeholders                | Babatunde et al. (2015)  |
| Low trust between the public and private sector                        | Babatunde et al. (2015); Mahalingam (2010)   |
| Problems of delays in receiving payments                               | Babatunde et al. (2015); Gidado (2010)   |
| Unavailability of large construction companies to deliver PPP projects | Babatunde et al. (2015)  |
| Shortage of professionals to handle PPP project                        | Babatunde et al. (2014, 2015)  |

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### 3. Research Methodology

The researcher identified a list of CSFs and constraints that affect infrastructure PPPs in Afghanistan through an in-depth and comprehensive review of relevant literature and identified 25 potential CSFs (Table 1) and 25 constraints (Table 2). The data were collected by a structured questionnaire that includes three parts. The first section is dedicated to the personal and demographic information of the respondents. It includes respondent name, organization's name, level of education, years of experience, category of industry or sector, and current designation. The second part consists of questions regarding CSFs, and the last section of the questionnaire includes questions on constraints to PPPs in Afghanistan. The second and third section each contains 25 factors derived from an in-depth and comprehensive literature review – Tabel 1 and Table 2 – by considering the context of Afghanistan.

The five-point Likert ordinal scale is employed to measure the data collected through a questionnaire. The respondents rated the importance of each CSF and constraint from 1-5 based on five-point Likert scale, where 1 = least important, 2 = fairly important, 3 = important, 4 = very important, 5 =

extremely important. The five-point Likert scale is suitable because it avoids respondents' social desirability bias and provides more reliable and meaningful responses (Garland, 1991). It is also broadly used in construction management, project management, and PPP researches.

The population of this study is project and construction management practitioners, policy and decision-makers, experts, and academia in engineering, development, and economics, and engineering in public, private and academic sectors. Since the study population is unknown, according to Bajpai (2011) and Jr et al. (2019), the sample size should be at four or five times the variables/factors to be analyzed. Therefore, the sample size of this study is 250 individuals – five times the CSFs and constraint factors. Respondents are selected through convenience sampling, a non-random or non-probability method.

The Relative Importance Index (RII) method is chosen to be utilized in this study. This method is usually used to rank the causes and effects in project management. (Holt, 2014) Examined several models of RII models and found that all equations lead to the same results. Therefore, for the study, the below equation will be used:

$$RII = \frac{\sum W}{AN} \quad (1)$$

Where:

RII = Relative Importance Index

W = the sum of scores awarded a variable ( $V_i$ ) from N respondent sample (typically, the sum of n respondents selecting a response point multiplied by the point's integer value for each option on the scaled stem).

A = largest integer on the response scale ( $A_{\max}$  in the present narrative).

Equation (1) can be simplified as below:

$$RII = \frac{\sum_{i=1}^5 W_i \times X_i}{A \times N} \quad (2)$$

Where:

RII = Relative Importance Index

W = Weighting given to each factor by the respondents and ranges from 1 to 5

X = Frequency of  $i_{th}$  response given for each cause

A = Highest weight (i.e., 5 in this case)

N = Total number of respondents.

Following (Akadiri & Olomolaiye (2012) and Chen et al. (2010), five importance levels are transformed from RII values as follow:

**Table 3. Importance Level**

| RII values              | Importance level |       |
|-------------------------|------------------|-------|
| $0.8 \leq RII \leq 1$   | High             | H     |
| $0.6 \leq RII \leq 0.8$ | High – Medium    | H – M |
| $0.4 \leq RII \leq 0.6$ | Medium           | M     |
| $0.2 \leq RII \leq 0.4$ | Medium – Low     | M – L |
| $0 \leq RII \leq 0.2$   | Low              | L     |

Source: Akadiri & Olomolaiye (2012) and Chen et al. (2010).

RII is broadly used to rank the causes and effects, particularly in construction management and public-private partnerships. According to Holt (2014), RII is usually used to analyze the questionnaires in construction management research. RII is employed by Karimi & Piroozfar (2015) to identify the key constraints that affect the implementation of PPPs in Afghanistan, Niazi and Painting (2018) to identify the critical success factors for the implementation of public-private partnerships in the Afghanistan construction industry. Kassem et al. (2020) used this method to develop a risk map in oil and gas construction projects. To explore the effects of construction delays on project delivery in the Nigerian construction industry RII method is employed by Aibinu and Jagboro (2002). Hatkar and Hedao (2016) utilized the RII technique to analyze infrastructure project delays.

#### 4. Data Analysis and Findings

##### 4.1 Background and Information of the Respondents

Table 4.1 lists the demographic and background information of the survey participants. The total number of respondents for this study was 250. Out of the respondents, 35% were employed in the private sector, 43% were public sector employees, and 22% were from academia. Also, 48% of the respondents hold bachelor's degrees, 44% master's, and the remaining 9% are Ph.D. holders. As shown, 31% of the respondents had two to five, 42% had six to ten, 19% of the participants had 11 to 16, and only 8% had 16 years or more of work experience.

Most participants were employed as project managers and made 34% of the total respondents from the job position perspective. Furthermore, 16% of the respondents were construction management practitioners, 22%

were university professors or researchers, and 28% were employed in other positions, including Program Directors, Consultants, Senior Engineers, Procurement Experts, and Contract Managers.

**Table 4.1 Demographic distribution of the respondents**

| Parameter          | Category                        | Number of respondents | Percentage (%) |
|--------------------|---------------------------------|-----------------------|----------------|
| Sector             | Public                          | 107                   | 43             |
|                    | Private                         | 88                    | 35             |
|                    | Academic                        | 55                    | 22             |
|                    | Total                           | 250                   | 100            |
| Education Level    | Bachelor                        | 119                   | 48             |
|                    | Master                          | 109                   | 44             |
|                    | PhD                             | 22                    | 9              |
|                    | Total                           | 250                   | 100            |
| Experience (years) | 2 to 5                          | 78                    | 31             |
|                    | 6 to 10                         | 105                   | 42             |
|                    | 11 to 15                        | 47                    | 19             |
|                    | 16 and above                    | 20                    | 8              |
|                    | Total                           | 250                   | 100            |
| Job                | Project Manager                 | 86                    | 34             |
|                    | Construction Manager            | 39                    | 16             |
|                    | University Professor/Researcher | 55                    | 22             |
|                    | Other                           | 70                    | 28             |
|                    | Total                           | 250                   | 100            |

Source: Data output from SPSS v 28.0

#### 6.1 4.2 Data Reliability Test

The internal consistency of the survey data of this study is assessed by using Cronbach's alpha. As shown in Table 4.2, the Cronbach's alpha value for CSFs with 25 items is 0.939 and for constraints with 25 items is 0.905. Both values are above the acceptable value of 0.70 indicated by Taber (2018). Since the alpha value of CSFs is in the range of 0.93-0.94, and similarly, in the range of 0.91-0.93 for the Constraints statement, it signifies excellent and strong internal consistencies, respectively.

**Table 4.2 Data Reliability Test**

| Variables   | Cronbach's Alpha | N of Items |
|-------------|------------------|------------|
| CSFs        | 0.936            | 25         |
| Constraints | 0.905            | 25         |

Source: Data output from SPSS v 28.0

### 4.3 Descriptive Statistics Analysis & Findings

This section examines and reports on the mean score and ranking of CSFs and constraints for PPP in infrastructure development in Afghanistan.

#### 4.3.1 Mean analysis and ranking of CSFs for infrastructure PPPs in Afghanistan

Table 4.3 presents every CSF's mean score and relative importance index (RII) analysis. In addition, standard deviation and importance level of factors are also included. The last column indicates the ranking of factors. As shown in the table, out of 25 CSFs, only political/government support is perceived as highly important, with RII 0.82 (82%) and a 4.11 mean score. The importance level of all other factors (24 out of 25) is high – medium with a mean score range between 3.99 and 3.37 and relative importance indices between 0.80 (80%) and 0.67 (67%).

The top five CSFs for infrastructure PPP in Afghanistan are political/government support, political stability, transparent PPP process, clear goals and mutual benefit objectives, and commitment and responsivity of both sectors. Furthermore, stable macroeconomic conditions, technology innovation, and technology transfer are perceived as the least significant factors and ranked 23<sup>rd</sup>, 24<sup>th</sup>, and 25<sup>th</sup>, respectively.

**Table 4.3: Mean score and ranking of CSFs**

| Critical Success Factors                  | Mean | Std. Deviation | RII  | Importance Level | Rank |
|---|------|----------------|------|------------------|------|
| Political/Government support              | 4.11 | 1.047          | 0.82 | H                | 1    |
| Political stability                       | 3.99 | 1.101          | 0.80 | H-M              | 2    |
| Transparent PPP process                   | 3.91 | 1.103          | 0.78 | H-M              | 3    |
| Clear goals and mutual benefit objectives | 3.87 | 1.054          | 0.77 | H-M              | 4    |

|  |      |       |      |     |    |
|--|------|-------|------|-----|----|
| Commitment and responsiveness of both sectors          | 3.86 | 1.059 | 0.77 | H-M | 5  |
| Through and realistic estimation of costs and benefits | 3.86 | 1.115 | 0.77 | H-M | 6  |
| Well organized and committed public agency/department  | 3.82 | 1.089 | 0.76 | H-M | 7  |
| Clarification of contract documents                    | 3.80 | 1.143 | 0.76 | H-M | 8  |
| Open and frequent communication among stakeholders     | 3.80 | 1.030 | 0.76 | H-M | 9  |
| Clarity of roles and responsibilities among parties    | 3.79 | 1.033 | 0.76 | H-M | 10 |
| Government providing guarantees                        | 3.78 | 1.150 | 0.76 | H-M | 11 |
| Favorable legal and regulatory framework               | 3.76 | 1.103 | 0.75 | H-M | 12 |
| Competitive tendering process                          | 3.76 | 1.086 | 0.75 | H-M | 13 |
| Competent PPP unit                                     | 3.71 | 1.013 | 0.74 | H-M | 14 |
| Public/community support                               | 3.70 | 1.131 | 0.74 | H-M | 15 |
| Sound economic policies                                | 3.68 | 1.155 | 0.74 | H-M | 16 |
| Streamline of approval process                         | 3.62 | 1.024 | 0.72 | H-M | 17 |
| Government providing financial support                 | 3.61 | 1.276 | 0.72 | H-M | 18 |
| Appropriate risk allocation and sharing                | 3.60 | 1.042 | 0.72 | H-M | 19 |
| Choosing the right private consortium                  | 3.59 | 1.095 | 0.72 | H-M | 20 |
| Mature and available financial market                  | 3.59 | 1.180 | 0.72 | H-M | 21 |

|                                 |      |       |      |     |    |
|---------------------------------|------|-------|------|-----|----|
| Strong private consortium       | 3.55 | 1.056 | 0.71 | H-M | 22 |
| Stable macroeconomic conditions | 3.53 | 1.113 | 0.71 | H-M | 23 |
| Technological innovation        | 3.40 | 1.258 | 0.68 | H-M | 24 |
| Technology transfer             | 3.37 | 1.186 | 0.67 | H-M | 25 |

Source: Source: Data output from SPSS v 28.0

#### 4.3.2 Mean analysis and ranking of constraints for infrastructure PPPs in Afghanistan

The mean score and relative importance index analysis for constraints for PPPs in infrastructure development in Afghanistan is shown in Table 4.4. The findings indicate that the mean value of all 25 constraints ranges between 3.93 and 3.33. Moreover, the respondents perceived all constraints as high – medium, with a relative importance range between 0.79 (79%) and 0.67 (67%).

Problems of delay in receiving payments, lack of experience and appropriate skills in PPP project delivery, lack of transparency and accountability, lack of capacity in the public sector to develop and manage the PPP process, and land accusation problems are respectively ranked as the five most significant constraints to infrastructure PPP in Afghanistan. Furthermore, three constraint factors, namely immature financial market, highly use of unsolicited proposals, and negative perception on PPP transaction are considered the least important factors and ranked 23<sup>rd</sup>, 24<sup>th</sup>, and 25<sup>th</sup> accordingly.

**Table 4.4 Mean score and ranking of constraints**

| Constraints   | Mean | Std. Deviation | RII  | Importance Level | Rank |
|---|------|----------------|------|------------------|------|
| Problems of delay in receiving payments                           | 3.93 | 1.014          | 0.79 | H-M              | 1    |
| Lack of experience and appropriate skills in PPP project delivery | 3.82 | 1.068          | 0.76 | H-M              | 2    |

|   |      |       |      |     |    |
|---|------|-------|------|-----|----|
| Lack of transparency and accountability                                     | 3.81 | 1.091 | 0.76 | H-M | 3  |
| Lack of capacity in the public sector to develop and manage the PPP process | 3.79 | 1.024 | 0.76 | H-M | 4  |
| Land acquisition problems   | 3.78 | 1.125 | 0.76 | H-M | 5  |
| Uncertainty of political environment/<br>political instability              | 3.77 | 1.080 | 0.75 | H-M | 6  |
| Absence of comprehensive and clear policy guidelines and procedures         | 3.74 | 1.042 | 0.75 | H-M | 7  |
| Unstable economic and commercial conditions                                 | 3.72 | 1.137 | 0.74 | H-M | 8  |
| Low trust between private and public sectors                                | 3.72 | 1.117 | 0.74 | H-M | 9  |
| Weak public institutional structure and capacity                            | 3.68 | 1.084 | 0.74 | H-M | 10 |
| Lengthy delays due to political debate                                      | 3.65 | 1.070 | 0.73 | H-M | 11 |
| Lengthy delays due to public opposition and agitations                      | 3.64 | 1.005 | 0.73 | H-M | 12 |
| Shortage of professionals to handle PPP project                             | 3.63 | 1.064 | 0.73 | H-M | 13 |
| Difficulties in importing of material and equipment                         | 3.62 | 1.024 | 0.72 | H-M | 14 |
| Difficulties in securing credit facility from banks                         | 3.60 | 0.973 | 0.72 | H-M | 15 |



|  |      |       |      |     |    |
|--|------|-------|------|-----|----|
| Unavailability of large construction companies to deliver PPP projects | 3.60 | 1.112 | 0.72 | H-M | 16 |
| High cost of project financing   | 3.58 | 1.020 | 0.72 | H-M | 17 |
| Lengthy delays in finalizing negotiations                              | 3.57 | 0.992 | 0.71 | H-M | 18 |
| Potential conflicts of interests among the stakeholders                | 3.56 | 1.029 | 0.71 | H-M | 19 |
| Complex contractual negotiations                                       | 3.56 | 1.017 | 0.71 | H-M | 20 |
| Misallocation and incomplete transfer of risks                         | 3.53 | 1.003 | 0.71 | H-M | 21 |
| High participation and transaction costs                               | 3.53 | 1.053 | 0.71 | H-M | 22 |
| Immature financial market  | 3.48 | 1.015 | 0.70 | H-M | 23 |
| Highly use of unsolicited proposals                                    | 3.48 | 1.007 | 0.70 | H-M | 24 |
| Negative public perception on PPP transactions                         | 3.33 | 1.089 | 0.67 | H-M | 25 |

Source: Source: Data output from SPSS v 28.0

## 6.25. Discussions

The study aimed to assess the CSFs and constraints for infrastructure PPPs in Afghanistan. The results indicated that all 25 CSFs and 25 constraints are perceived as significant. In this section, results for both CSFs and constraints are discussed.

### 5.1 Critical Success Factors (CSFs)

As shown in Table 4.3, Public/government support is ranked most important CSF with a means score of 4.11 and high importance level. This is consistent with other studies. For instance, according to Osei-Kyei & Chan (2017), political support is ranked the first most CSF for PPP in developing countries. In a study conducted by Niazi & Paintin (2018), this factor is ranked second most significant factor, and the reason can be their relatively

small sample size (76 respondents) and a smaller number of items (18) compared to this study. Political support is essential for infrastructure PPPs, and it can attract investment toward PPPs, decrease the political risks related to PPP projects and ensure the implementation of PPP (Niazi & Painting, 2018; Osei-Kyei & Chan 2017). Without continuous political support, expenditure approvals for public works projects or the public portion of PPPs would not be available (Jacobson & Choi, 2008). Also, politics are inextricably linked to public policy formulation and implementation. Therefore, a favorable political behavior toward the private sector partner of infrastructure projects could help expand PPPs in the host country (Li et al., 2005). While lack of political support, from one side, causes political risks and, on the other side, affects the public opinions toward PPP and commitments of the public sector to PPP projects, which may impact the implementation of those PPP projects (Li et al., 2005; Sanni, 2016). Therefore, the Afghanistan government should provide political backing to PPPs to attract investors and ensure infrastructure development through PPP arrangement.

Political stability is ranked second with a mean score of 3.99 and 0.80 RII. The significance level is high to medium. Studies conducted in developed countries (e.g., Li et al., 2005; Jacobson & Choi, 2008; Ismail, 2013 and Cheung et al., 2012) indicate the insignificance of political stability in implementing infrastructure PPPs. However, Osei-Kyei & Chan (2017) highlighted political stability as an extremely important factor in PPP projects considering developing countries' unstable electoral and political systems. For increasing the private sector's trust in the government, stability of the political environment and enacting relevant regulations and laws should be ensured (Kang et al., 2019). The appropriate level of political stability often motivates private sector investments. Therefore, the Afghan government, civil and political figures, and groups should enhance political stability and take preventive measures to avoid potential sources of political violence and unrest.

The third most significant success factor is the "Transparent PPP process." The mean score for this factor is 3.91, and the relative importance index is 0.78 with high to medium importance levels. Niazi & Painting (2018) also ranked this factor as the third important success factor for PPPs in construction projects. Furthermore, in Ghana, transparency in the PPP process is ranked first (Osei-Kyei & Chan, 2017). Both studies indicate consistency with this result on the importance of the factor mentioned. Osei-Kyei & Chan (2017) argue that transparency is a highly important factor

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because most civil groups are concerned about transparency in traditional procurement in developing countries. Chan et al. (2010) stated that an efficient and transparent procurement process decreases transaction costs, shortens negotiation, and finalizes the deal. Therefore, throughout the project delivery period, there should be transparency not only in bidding, and both sectors, public and private, should be transparent to users or outsider stakeholders (Osei-Kyei & Chan, 2015). In Afghanistan, corruption and the absence of transparency caused negative impacts on project implementation and investment. Therefore, transparency in PPP processes should be ensured for attracting investments and successful PPP practices.

The respondents ranked clear goals and mutual benefit objectives as the fourth CSF, carrying a 3.87 mean score, with a 0.77 importance index and high to medium importance level. This factor is ranked among the most significant success factors for PPPs in the context of developing countries (Osei-Kyei & Chan, 2017; Tang & Shen, 2013). Both private and public sectors have different motives and objectives and compete to achieve them. In PPP arrangements, the public sector seeks to increase public benefits and ensure social stability; the aim of the private investor is concentrated on the profitability aspect of the project (Meng et al., 2011). Lack of clear goals and mutual financial objectives led to conflict between parties. Therefore, there should be common benefits and financial objectives (Osei-Kyei et al., 2019). Alongside being a CSF for infrastructure PPPs, Osei-Kyei et al. (2019) found that clear goals and mutual benefit objectives is perceived as the second measure to prevent conflicts of public-private partnerships in developing territories. Therefore, both parties should outline their objectives in the negotiations stage and clearly define shared objectives for both sectors. Furthermore, they should work toward mutual goals, resulting in a win-win outcome and preventing potential conflicts.

The fifth CSF for infrastructure PPP in Afghanistan is the Commitment and responsiveness of both sectors. The average score for this factor is 3.86, and the relative importance index is 0.77 with a high to medium importance level. Many studies ranked this factor significant for the success of PPPs, which is consistent with this study. For instance, it is ranked a CSF for PPPs USA, Nigeria, Malaysia, China, Hong Kong, UK, and Australia (Jacobson & Choi, 2008; Sanni, 2016; Babatunde et al., 2012; Ismail, 2013; Chan et al., 2010; and Cheung et al., 2012). PPP is an arrangement for the long term that needs high commitment and responsiveness from both parties. A favorable investment environment is required for a PPP project's success, and both sectors' commitment and responsibility are required to facilitate such an environment (Sanni, 2016). Jacobson & Choi (2008) stated that supervision

and unifying vision result in commitment. Therefore, each sector is expected to show a strong enthusiasm and commitment to achieving the agreed shared vision and specific objectives by actively engaging and participating throughout the project duration. Sectors' commitment and responsibly will lead to the best result, and their lack will adversely affect the outcomes.

Among the 25 CSFs, Technological innovation and Technology transfer are ranked 24<sup>th</sup> and 25<sup>th</sup> with 3.40, and 3.37 mean scores, 0.68 and 0.67 relative importance index, respectively. However, the literature indicates that both factors are significant for PPP success, but they are ranked lower. For example, Niazi & Painting (2018) ranked technology transfer 17<sup>th</sup> out of 18. Furthermore, technology transfer is also ranked the last significant factor for construction PPP projects in the UK (Li et al., 2005). Osei-Kyei & Chan (2017) considered both factors as one and ranked it 12<sup>th</sup> out of 15<sup>th</sup> factors for PPP success in developing countries. All these studies are consistent with these findings.

Participants ranked all 25 factors significant for the success of infrastructure PPPs in Afghanistan. As shown in Table 4.3, except for the first, the importance level of all other factors is high to medium, and none is ranked as medium or low significant. Therefore, both public and private sectors have to consider all 25 factors and do their best to enhance and strengthen them.

## **5.2 Constraints**

As shown in Table 4.4, the participants ranked problems of delay in receiving payments with a 3.93 mean score, 0.79 relative importance index, and high to medium importance level. Gidado (2010) ranked this constraint the second most important out of 21 constraints in Nigeria, and his finding is consistent with the current result. However, unlike Gidado (2010), Babatunde et al. (2015) ranked this constraint 21st out of 58 constraints in Nigeria, and its reason can be studying relatively more items. Delays in receiving payments can be a significant constraint in developing countries, which causes delays in project activities and impacts work quality. Therefore, the government should avoid delays in payments by optimizing the processes and procedures.

Lack of experience and appropriate skills in PPP project delivery is ranked the second constraint factor. Its mean score is 3.82 with a 0.76 relative importance index, and its importance level is high to medium. Previous studies also ranked this factor significant. For instance, research

conducted by Osei-Kyei & Chan (2017) figured out that out of 15 constraints, this constraint for PPP projects is perceived as the second most important in Ghana and fifth in Hong Kong. However, Ishawu et al. (2020) found that lack of experience and appropriate skills in PPP is the seventh significant constraint – out of 16 - for PPPs in Ghana. The sample size, target population, and study time can be the main reasons for the gap. Moreover, it is ranked fourth for construction PPP in the UK, third in Singapore, first in PPP for housing projects in Tanzania, tenth in Malaysia (Li et al., 2005; Hwang et al., 2013; Kavishe & Chileshe, 2019; Ismail & Haris, 2014). Therefore, this result is consistent with past relevant studies; and reveals that lack of experience and appropriate skills in PPP project delivery is a significant constraint for infrastructure PPP projects.

Since PPP is a new concept in infrastructure project delivery, public and private sectors do not possess the required skills and experience, particularly in developing countries (Li et al., 2005). Li et al. (2005) further stated that as PPP is a long-term agreement for financing, investment, operation, and maintenance of an asset, the private sector is not familiar with such activities. Therefore, on one side, lack of proper experience and skills cause losses which impact the attractiveness of PPP projects to the private sector, and on the other side, it leads to failure of PPP projects (Hwang et al., 2013; Osei-Kyei & Chan, 2017). To address this constraint, the government should work on the knowledge and skills of public sector employees and ensure the required skills and experience of the private sector partner before engaging with them. Furthermore, many contractors assume risks and responsibilities out of their capacity because they do not have experience in PPPs; others enter into contractual agreements detrimental to the general public's interest (Osei-Kyei & Chan, 2017).

Lack of transparency and accountability is the third significant constraint. Its mean score is 3.82, and the relative importance index is 0.76 with a high to medium importance level. It is consistent with Karimi & Piroozfar (2015), who ranked it third significant constraint for PPP projects in Afghanistan. In 2020, Transparency International also ranked Afghanistan 165<sup>th</sup> out of 180 countries/territories and scored 19 out of 100 (Transparency International, 2021). Lack of transparency and accountability is ranked on the top of barriers to PPP projects in Iraq (Rezouki & Hassan, 2019). Since the Iraqi context is similar to Afghanistan, it justifies the current finding. This factor is also ranked fourth out of 58 in Ghana (Babatunde et al., 2015). Furthermore, according to studies, corruption and reduced accountability are also significant barriers in Ghana, Tanzania, and Malaysia (Ishawu et al., 2020; Kavishe & Chileshe, 2019; Ismail & Haris, 2014). This constraint should

be addressed because lack of accountability and transparency leads to political debates and causes PPP cancelation or failure, resulting in a waste of resources (Ishawu et al., 2020; Osei-Kyei & Chan, 2017). Since the transparent PPP process is ranked as the third CSF, further discussion on transparency is provided in the CSFs section.

Lack of capacity in the public sector to develop and manage the PPP process is perceived as the fourth factor which hinders the infrastructure PPP implementation in Afghanistan. Its mean score is 3.79, the relative importance index is 0.67, and the importance level is high to medium. Karimi & Piroozfar (2015) ranked this fifth factor hindering PPP implementation in Afghanistan, which justifies the importance and ranking of the factor found in this study. Lack of capacity in the public sector is also considered as a constraint to PPPs in developing countries, Nigeria, Iraq, Ghana, and Hong Kong (Osei-Kyei & Chan, 2017; Rezouki & Hassan, 2019; Babatunde et al., 2015). Due to lack of capacity, on one side, the Afghan government often failed to attract funding and investment and repeatedly failed to spend its development budget. On the other side, PPP is relatively new in the country, and it needs complex structures. Therefore, despite motivation, donor community, and government leadership, very few PPP projects are contracted. To overcome this barrier, the government must bring the required changes in structures and processes, improve the Central Partnership Directorate, and equip its employee with up-to-date knowledge and skills.

According to survey land, the accusation problem is ranked the fifth important constraint hindering PPP projects. The mean score for this factor is 3.78, and its relative importance index is 0.76, with a high to medium importance level. In particular, land accusation problems challenge PPPs' success in developing countries. Previous literature indicates that land accusation problems hinder PPP projects implementation in Afghanistan, Taiwan, Iraq, and Nigeria (Karimi & Piroozfar, 2015; Chou et al., 2012; Rezouki & Hassan, 2019; Babatunde et al., 2015). Land acquisition issues cause delays in infrastructure projects. However, to address land issues in Afghanistan, many steps are taken, but still, it is not optimal. Land acquisition in Afghanistan is an extensive discussion, and for the sake of avoiding diversion, it is avoided here.

As shown in Table 4.4, immature financial market, highly use of unsolicited proposals, and negative public perception on PPP transactions are the last three constraints, ranked 23<sup>rd</sup>, 24<sup>th</sup>, and 25<sup>th</sup>, respectively. Furthermore, the survey results indicate that all 25 constraints are ranked

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important, and their importance level is high to medium, with a mean score range between 3.93 and 3.33. Therefore, to address and overcome all 25 constraints should be considered.

## 6. Conclusion and Implications

This study aimed to identify and evaluate infrastructure PPPs' CSFs and constraints hindering the implementation of PPP infrastructure projects in Afghanistan. Furthermore, it sought to address and answer the questions: first, what are the exact CSFs for successfully implementing public-private partnership schemes for infrastructure development in Afghanistan? Second, what constraints hinder infrastructure PPP implementation in Afghanistan? Through a comprehensive and in-depth literature review and structured questionnaire survey (see appendix), the researcher achieved the objectives and answered questions.

The findings show that all 25 CSFs studied in this research are significant for infrastructure PPP in Afghanistan. However, only the first CSF is ranked highly important, and the importance level of remaining all is high to medium. Based on the survey, political/government support, political stability, transparent PPP process, clear goals and mutual benefit objectives, and commitment and responsiveness of both sectors are ranked as the top five CSFs for infrastructure PPPs. Also, stable macroeconomic conditions, technological innovation, and technology transfer are the last three CSFs and ranked 23<sup>rd</sup>, 24<sup>th</sup>, and 25<sup>th</sup>, respectively.

Similarly, the results indicate that all 25 constraints are significant, and the importance level of all is high to medium. Responders ranked problems of delay in receiving payments, lack of experience and appropriate skills in PPP project delivery, lack of transparency and accountability, lack of capacity in the public sector for developing and managing the PPP process, and land acquisition problems as the top five factors hindering infrastructure PPPs. Out of 25, immature financial market, highly use of unsolicited proposals, and negative public perception ranked the last three constraints.

### 6.2 Implications

The markets of PPP are growing in developing countries, and they can attract more private investment than PPP markets in developed countries (Osei-Kyei & Chan, 2017). Therefore, alongside a better understating of CSFs and constraints for PPPs in infrastructure development, this study provides many significant practical and theoretical implications for successfully

implementing PPP projects for infrastructure development in developing countries, particularly Afghanistan.

### **6.2.1 Practical Implications**

This research draws the following implications for PPP stakeholders and policymakers. First, political stability needs to be ensured, and the PPP projects should be backed by political support. In this regard, the government, politicians, and policymakers should have positive thinking toward PPP. Furthermore, laws and regulations should ensure that change in government and leadership does not impact the PPP contract. Second, an effective and strong legal environment is required to successfully implement infrastructure PPPs, which can be ensured by improving and developing laws, regulations, frameworks, and policies. Third, a well-organized, competent, committed, transparent, and accountable PPP unit is essential for PPPs success. Lastly, Public contracting entities should express willingness to enter into partnership arrangements with the private sector and be well-resourced. Also, public entities should be cautious about not offering more desirable terms than usual in the country for private sector investors, which is often in developing countries (Ho, 2006).

### **6.2.2 Theoretical Implications**

The output of this study offers some theoretical implications. The empirical findings of this study on CSFs and constraints contribute to the available body of knowledge and are relevant for future reference. Furthermore, the findings can be used as a base for further research, and academics and researchers can adopt the identified CSFs and constraints to build on and investigate other related aspects. The findings revealed in this study can be compared with CSFs and constraints for PPPs in infrastructure development in a developed country.

### **6.3 Research Limitations**

Every study has its limitations, which are beyond the researcher's control. Therefore, this study also has its specific limitations. First, the lack of relevant literature in the Afghanistan context and PPP relevant data to build upon is a main limitation of the study. Second, as practicing PPP is still relatively new in Afghanistan, the lack of PPP experts and practitioners is the other main issue. Therefore, like other developing countries, they are excluded from sampling.



## 6.4 Future Research Scope

This study focuses only on CSFs and constraints of infrastructure PPP projects, while there is a big room for future researchers. Therefore, other researchers can expand this study by studying CSFs and hindering factors for public service delivery PPPs. Also, they are encouraged to investigate and assess the PPP experience in Afghanistan and examine its success and constraints by representing case studies. Furthermore, identifying and evaluating the reasons for PPP adoption, benefits, risk factors, and success drivers of PPP projects in Afghanistan is encouraged.

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