Study on Critical Success Factors of Public Private Partnership Reviewed and Analyzed through Systematic Literature

Yin Fang[1, 2], Pengfei He[1]

[1]School of Sports Science and Physical Education, China University of Geosciences (Wuhan), Wuhan, Hubei Province, China

[2]Graduate Institute of Sports, Leisure and Hospitality Management, National Taiwan Normal University, Taipei, China

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Abstract: Public private partnerships are increasingly being used in various fields, and the key success factors is an important research area to ensure the success of the projects of public private partnerships. In this paper, systematic literature review is used to search the literature system and critical analysis of the relevant terms through three databases: Scopus, Science Direct and EBSCO. This study will explore the context and trend of PPP research in the five years from 2014 to 2019, further explore relevant research results based on key success factors, and finally put forward the prospect of PPP application in the future.

1. Introduction

After the global financial crisis in 2008, governments in developed and developing countries are increasingly focusing on the policy of public private partnerships (PPP). PPP is to bring the private sectors (multinational enterprises) into the mode of common governance, hoping to provide basic public facilities for the public sectors with capital and technology input from the private sectors, so as to promote the development of local economy and services, and share risks and responsibilities [1]. Therefore, large-scale projects can be established through PPP, so as to promote development, achieve economic progress, increase local products and meet people's high requirements for public service quality. The development of PPP is the key to economic and social development.

PPP projects often require large investments, but these investments do not always lead to satisfactory results in PPP practices. Some failed cases include the Sydney Cross-city Tunnel project and the Hangzhou Bay Bridge project [2] will be a heavy economic burden for most governments. Therefore, the Critical success factors (CSF) of PPP projects are an important research area.

CSF research of PPP project includes case study [3][4], and CSF research in different implementation phases, including planning phase, design phase, bidding phase [5][6], etc. Robert and Albert (2015) reviewed the literature on PPP projects from 1999 to 2013, summarized and analyzed the CSF research results of PPP [2]. Therefore, based on the above previous studies, although people have studied the critical success factors of PPP at different levels, they still lack the attention to review and analyze the identified studies in the existing literature, especially the systematic and critical review of the literature of CFS during the implementation of PPP. This study will explore the context and trend of PPP research in the five years from 2014 to 2019, further explore relevant research results based on CFS, and finally put forward the prospect of PPP application in the future.

2. Research Methods

In this study, the keywords “public-private partnership”, “critical success factors”, “critical factors”, “success factors” and other search terms were used to search three databases, including Scopus, Science Direct and EBSCO. The three search engines were chosen because they cover publications databases in different research areas.

The search focuses on peer-reviewed and referenced articles published in academic journals in

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the five years from 2014 to 2019. Several criteria are used in the selection process. Firstly, the critical success factors of PPP projects are main points, including CSF in different PPP implementation phases and CSF of PPP in various countries, rather than theoretical, introductory or retrospective articles. Secondly, both quantitative and qualitative studies are included in the selected articles. Thirdly, the language is English.

After preliminary database search and selection based on title and keywords, age, language and journal articles, 24 articles were searched by Scopus, 122 were searched by ScienceDirect. 29 by EBSCOhost, 175 in total. On the basis of reading Abstract, after excluding the uncritical factors of PPPs, 23 articles were searched by Scopus, 7 were searched by ScienceDirect, 21 by EBSCOhost, 51 in total. 26 remained after deleting repetitive articles and retrospective articles. Then, the Abstracts or full texts of the remaining 26 articles were further examined, excluded 6 articles on the correlation study between key factors, approaches and risks of the success of PPP, study on the correlation between success criteria and factors, and non-English ones. Finally, 20 articles were included.

After careful screening, this study has a total of 3 qualitative studies and 17 quantitative studies. The literature quality assessment method of Denis (2005) was used for inspection and screening [8], Liu et al. (2014) and Vaughan et al. (2019) did not explain the cases [7] [9]. Neema and Nicholas (2018) invited officials and employees with sufficient knowledge and experience in the field of PPP and other personnel at different levels to be interviewed. Structured interviews, semi-structured interviews and focus groups were used to increase the data quality. Data reliability was enhanced by content analysis and NVivo 12 software analysis [10]. It is found in quantitative research of survey methods that most studies are conducted by focus group discussion and PPP expert's inspection, so as to check the lists of CSF collected from the literature and modify/add/delete the questionnaires [11-19]. There are studies that have not been tested before questionnaires [20], and studies that didn't select standards particularly or describe how to sample [21].

3. Study Results

3.1 Literature attributes

This paper reviews 20 critical success factors of PPP, among which the research objects are mainly divided into: (1) Infrastructure construction and services; Transportation facilities[22], highway facilities[16][21][23], airport facilities and operations [9], port facilities [10][19], prison services [7]and water supply services [14]. (2) Engineering construction projects, from the perspective of housing [11][21]. (3) Research is carried out with the country as the object, or comparative research [12] [24-25]. (4) At different phases of the PPP projects, the critical success factors of the management phase and the planning phase are studied [12-13][17][26]. (5) The organization departments [20]. (6) Analysis of successful PPP cases [27].

Hong Kong, India and Nigeria are the countries with the largest number of CSF articles involved in exploring PPP. The trend of publishing journals in developing countries is more obvious. Hong Kong journal articles are published by different researchers from the same research institution. In developing countries such as mainland China, the concept of private sectors is defined as social capital. PPP is still in the early phase of development and lacks of direct practical experience, which motivates researchers to be interested. In addition, although the research on PPP policies in developed countries has been well implemented and developed, there are still researchers in developed countries studying this topic, which confirms the great interest of global researchers in strengthening the implementation and practice of PPP. (Table 1)

Table 1 General List of the Countries of Authors Who Published Journal Articles of the CSF study of PPP

The first author	Article number	Research center	Country	General number
Robert	3	The Hong Kong Polytechnic University	Hong Kong	5
Tang	1			
Ernest	1			
Vimlesh	1	Savitribai Phule Pune University	India	3
Vijayabanu	1	SASTRA Deemed University		
Rakesh	1	University of Petroleum and Energy Studies		
Vaughan	1	Bells University of Technology	Nigeria	3
Babatunde	1	Obafemi Awolowo University		
Olabode	1	University of Lagos		
DU	1	Southeast University	China	1
Neema	1	Ardhi University	Tanzania	1
Alis	1	Damascus University,	Damascus	1
Zayyanu	1	Universiti Teknologi Malaysia	Malaysia	1
Geoffrey		Vrije Universiteit Brussel	Belgium	1
Ali	1	University of Tehran	Iran	1
Khalid	1	the British University in Dubai	Dubai	1
YUN	1	University of Texas at Austin	USA	1
Junxiao Liu	1	Curtin University,	Australia	1
Andreas	1	Bauhaus University in Weimar	Germany	1

3.2 Summary and Analysis of research results

Any project has a life cycle. The researchers found that some CSF are more or less heavily weighted during certain project phases. The cycles of PPP projects in this study were supported by the study of Kavishe et al. (2018). Analysis on PPP CSF was conducted according to the five phases of preparation, planning, procurement, building and operating [28].

In the published studies included in this paper, some CSF of the PPP run through the life cycle of PPP projects. The financial support and security of the government, sound and sTable policies and supportive laws, appropriate institutional framework; Trust and integrity, such as time commitments [21], commitments to eradicate corruption, continuity commitments to maintain policy continuity [24]; Competent public institutions; Professional teams to monitor and manage PPP projects; Project transparency; Appropriate risk allocation; RepuTable developers. They are all critical success factors throughout the life cycle of PPP projects.

3.2.1 Preparation phase

"Pre-contract" phase. Interest is the primary concern of all participants in a PPP project [27]. The main CSF in this phase mainly are: Appropriate PPP policies and laws [10], sTable macroeconomic environment, feasible financial market [17][19][21]; All parties are highly enthusiastic and willing, and get public/community participation and coordination [11-12][19]; Team building and training [21].

3.2.2 Planning phase

Feasibility study report phase. The main CSF in this phase mainly are: Project condition evaluation and PPP implementation process [16][27]; Full financial analysis [10][22]; Whether it has profitability and investment capacity[27]; Pass realistic cost/benefit evaluation, project technical feasibility, available financial market, multi-benefit target evaluation[12][17][21][25].

Tang et al. (2014) proposed 15 CSF in this phase. They respectively are: Clear goals and

objectives; Clear end-user requirements; Experience of collaborators; Fully understand customer requirements; Good decision-making records; Identify customer requirements; Sufficient time to execute the contract; Contract flexibility to accommodate changes; The time to end the contract; Clear and accurate contracts; The feedback of completing projects; Develop an agreed framework; The right priority set; Build consensus; Program control [26].

3.2.3 Procurement phase

The main CSF for this phase are: Competitive and transparent bidding; Adopt a value-for-money procurement process [9][12][21]; Clear procurement rules [24]; Scrutinize PPP project proposals; Sense of ownership [20]; The contract contains an appropriate dispute resolution mechanism [22]; Public/private sector roles; Commitment and common rights/responsibilities [12][21].

3.2.4 Building phase

The construction phase requires adequate monitoring and control. The key CSF are: official and unofficial on-site visits and inspections [10]; Construction capacity [27], including timely delivery of projects, effective coordination among relevant parties, and project completion within budget allocation [23].

3.2.5 Operating phase

This phase will operate in accordance with the agreed contract and will depend on the nature of the project. The CSF are: Reliable service delivery; Technological innovation [12] and technology transfer [21]; Total number of outstanding contractors, experienced/skilled private partners; Involve the private sectors in projects with sufficient capacity [9][10]; Regulated and favorable operating environment [9]; Appropriate fee and income adjustment formula [22], because every stakeholder group believes that an efficient and well-structured payment mechanism is the most important key success factor in operation management; Open and continuous communication among stakeholders; Effectively transform the ownership of private consortia[13].

4. Conclusion

The success of PPP projects is mainly the success of product and management [7]. The product involves the users. In the future, the key success factors of PPP can be studied solely at the public level, so as to have a more comprehensive understanding. It is also important to focus on each phase at the same time, even the actual cost and revenue estimates of the company at the end of the project. The key success of PPP projects can focus on empirically testing and validating CSF. CSF's authenticity relates to the success of the project management.

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