

Exploring public-private partnerships in Singapore : the success-failure continuum

Kim, Soojin; Kwa, Kai Xiang

2019

Kim, S., & Kwa, K. X. (2019). Exploring Public-Private Partnerships in Singapore: The Success-Failure Continuum (Routledge Focus on Public Governance in Asia) (1st ed.). London & New York: Routledge.

<https://hdl.handle.net/10356/146350>

<https://doi.org/10.4324/9780429290701>

This is an Accepted Manuscript of a book chapter published by Routledge in Exploring Public-Private Partnerships in Singapore: The Success-Failure Continuum on 9 December 2019, available online: <https://doi.org/10.4324/9780429290701>

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Exploring Public-Private Partnerships in Singapore

The Success-Failure Continuum

Soojin Kim

[Orcid.org/0000-0003-3141-8621](https://orcid.org/0000-0003-3141-8621)

Kai Xiang Kwa

[Orcid.org/0000-0002-9916-9142](https://orcid.org/0000-0002-9916-9142)

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Acknowledgements

This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2018S1A3A2075609); and HASS Incentive Scheme for the Development of Competitive Research Grant (No. M4082261.SS0) from Nanyang Technological University, Singapore.

Abbreviations

A*STAR	Agency for Science, Technology and Research
ARTC	Advanced Remanufacturing Technology Centre
BBO	Buy-Build-Operate
BDO	Buy/Lease-Develop-Operate
BOO	Build-Own-Operate
BOT	Build-Operate-Transfer
CHAS	Community Health Assist Scheme
CP2M	Centre for Public Project Management
CPIB	Corrupt Practices Investigations Bureau
CRFs	Critical risk factors
CSCG	CS Construction and Geotechnic
CSFs	Critical success factors
DB	Design-Build
DBFO	Design-Build-Finance-Operate
DBM	Design-Build-Maintain
DBO	Design-Build-Operate
DBOM	Design-Build-Operate-Maintain
DBOO	Design, Build, Own and Operate
DBOT	Design-Build-Operate-Turnover
DBW	Design-Build-Warranty
ECC	Emergency Care Collaboration
EOI	Expressions of interest
GeBIZ	Government Electronic Business
HCI	Human Capital Index
HPB	Health Promotion Board, Singapore

ICT	Information and communication technology
IDA	Info-communications Development Authority of Singapore
IT	Information Technology
ITE	Institute of Technical Education
LTA	Land Transport Authority
MINDEF	Ministry of Defence, Singapore
MOF	Ministry of Finance, Singapore
MOH	Ministry of Health, Singapore
MRT	Mass Rapid Transit
NEA	National Environment Agency
NetCo	Network Company
NLB	National Library Board, Singapore
NS	National Service
NUS	National University of Singapore
OECD	Organization for Economic Cooperation and Development
OpCo	Operating Company
P2P	Peer-to-Peer
PFI	‘Private Finance Initiative’
PPI	Private Participation in Infrastructure
PPPs	Public-Private Partnerships
PUB	Public Utilities Board
RFP	Request for Proposal
ROI	Return on investment
RSAF	Republic of Singapore Air Force
SAF	Singapore Armed Forces
SCDF	Singapore Civil Defence Force
SMRT	Singapore Mass Rapid Transit

SMU Singapore Management University

SPF Singapore Police Force

SSC Singapore Sports Council

VFM Value for Money

Chapter 1 Introduction: Why Public-Private Partnerships (PPPs)?

ABSTRACT

This chapter is basically motivated by the need to answer the question: “Why Public-Private Partnerships (PPPs) have received remarkably greater attention in practice and research?”

This chapter first overviews the historical background of PPPs and then explores global trends and features of PPPs by region and service area (sector). In addition, this chapter summarizes how scholars have viewed and described this worldwide phenomenon in defining PPPs and how they have specified various types (forms) of PPPs in the literature. Next, the chapter reviews recent studies regarding the determinants of PPPs. The chapter then discusses both the advantages and disadvantages of PPPs, which continue to be controversial and the subject of ongoing debate among scholars and practitioners in the public administration and policy field. Lastly, the chapter provides a comprehensive review of major theoretical approaches to the study of PPPs.

1. The Historical Background of PPPs

Over the past few decades, spurred on by cost-efficient and business-like government reforms (e.g., Reinventing Government and New Public Management) and the change in demographic structure (e.g., aging population), many developed and developing countries have continued to pursue their production and delivery of public goods and services by awarding contracts to the private sector. Such change in governance, for example, using privatization or contracting-out, has aimed to achieve cost savings and ensure government responsibility toward the modern welfare state without compromising public policy goals and heightened citizens’ needs for more and better services. Scholars and practitioners have

described this global phenomenon using diverse terms like ‘third-party governance’ (Salamon, 1981), ‘government by proxy’ (Kettl, 1988), ‘hollow state’ (Milward & Provan, 2000), and ‘contracting regime’ (Smith & Lipsky, 1993)—all of which encompass the broadening of new public management strategies in the context of contractual relationships between public and nongovernment organizations outside the public sector (Kim, 2015).

In recent decades, this line of discussion has been extended to public-private partnerships (hereafter, PPPs), which are based on long-term cooperation and mutual understanding between the public- and private-sector actors. A huge volume of literature, particularly, evidence-based research on PPPs, has flourished in the area of public administration and policy since the late 1990s (Leigland, 2018). Scholars have started to call PPPs ‘hybrid forms’ (Koppell, 2003), ‘third way governments’ (Hodge & Greve, 2007) and ‘cross-sectoral collaboration’ (Brinkerhoff & Brinkerhoff, 2011).

In history, the concept of using private capital to provide public services, especially public facilities (i.e., repairing the road, paying debt by charging bridge tolls), seems to be quite old (Yecombe, 2007). Western countries, as pioneers in this practice, started to allow private firms to enter the public sphere in the 18th century (Gunawansa, 2010; Kumaraswamy & Morris, 2002). For example, in France, the construction of canals with private capital began through the Concession type of practice (e.g. charging toll fees to pay back the initial investment) (Yecombe, 2007, p. 5). Likewise, most of London’s bridges and tunnels were financed by private investors and the private counterparts were allowed to charge so-called public service fees to bridge users. The Brooklyn Bridge in New York was also built in the same way. This was to help finance the building of public facilities and to substantially lower debt burdens shouldered by governments.

PPPs have started to elicit a great deal of attention globally in the scholarship as well as in practice since the United Kingdom (UK) first introduced PPPs at the national level in 1992

(Gunawansa, 2010; Lam, 2004; Leigland, 2018). As an innovative strategy for effectively delivering public services to the people, the UK government executed the 'Private Finance Initiative' (PFI), which enabled the government to use alternative sources of (private) funds for infrastructure. By April 2003, about 560 PFI contracts had been executed, which made up more than 10 percent of total investment in the UK public sector in 2003-2004 (Corner, 2005, p.44). In response to the UK's successful PPP operations, other European countries (e.g., PPPs were first introduced in France in 2004) and the United States have increasingly relied on PPPs, not only to finance their infrastructure building/renovation, but also to enhance urban renewal and local economic development in the long term (Hodge & Greve, 2007; Osborne, 2001).

Later in the 20th century, Asian countries have not been an exception to this trend. This is so because many countries in the Asian and Pacific region pursued greater efficiency (associated with rapid economic growth) through private involvement in public sector works and subsequently recovered citizens' trust in government through such strategic public management. As a result, PPPs initially tended to appear in the area of large-scale urban infrastructure and related services, mostly in terms of public transport infrastructure projects such as highway (Express lanes), inter-state bridge, airports, harbors, and tunnels (Ni, 2012; (Velotti, Botti, & Vescei, 2012). However, to date, PPPs have spread to other industries (service areas) including IT, medical services, residential services, military/defense, sport stadiums and sewerage (recycled water) treatment, to mention a few.

Notably, it has been argued that PPPs are different from the traditional bureaucratic public service delivery method (including competitive tendering) or privatization (Hodge & Greve, 2007). Rather, PPPs seem to go beyond the traditional government purchase of goods and services through procurement/contracting-out in that the operator or service provider (and its financiers) in the private sector has specific roles even in the design, construction

(including renovation) and financing stages, in addition to their operational roles (Bovaird, 2004; Hodge & Greve, 2005; Wang & Zhao, 2014). To manage PPPs successfully, consistent intersectoral collaborations between the two sector bodies are required for promising long-term contractual relationships (i.e., concession periods)¹ (Forrer, Kee, Newcomer, & Boyer, 2010).

According to Forrer and his colleagues (2010), in a traditional, competitive approach, governments tend to dictate the terms and conditions of service production and delivery, and private vendors are expected to comply with the contractual specifications. However, in a PPP project, both government agencies and private partners are actively engaged in the pre- and post-award negotiations to determine how the good or service might be provided (Forrer et al., 2010, pp. 476-477). In other words, under the PPPs, two or more stakeholders (partners *per se*), at least one of which is a public entity and one a private entity (a private company or consortium), not only proceed with joint decision-making, but also share risks (and costs, and resources related to the products and services if necessary), responsibilities for the outcome, and further returns on investment in the long-term relationship (Evan & Bowman, 2005; Hodge & Greve, 2007; Marques & Berg, 2011; Ni, 2012). However, it should be noted that as in the PPP Handbook developed by the Ministry of Finance (MOF), Singapore, governments utilizing PPPs are allowed to invite private sector entities to finance and develop infrastructure projects *without losing the state control over the regulatory aspects of service delivery*, including, the pricing of services provided by the infrastructure facility (MOF, 2012, p. 4). This is reminiscent of Baker's (2016) argument that "[a] PPP is a hybrid structure that lies between the traditional provision of public goods and services by the government and pure privatization" (p. 433).

Although the public and private partners are expected to work together toward a common goal (e.g., providing better performance of targeted services to fulfil citizens'

expectations) in the PPP relationships, each sector actor needs to play an independent, significant role in improving public services or creating innovation. Under PPPs, a public entity is typically in charge of specifying the outputs or services required, whereas a private company or consortium (known as “*a project developer*”) should be responsible for financing, designing, construction, operation and maintenance of a facility (service) (Gunawansa, 2010; MOF, 2012). More specifically, in the words of Ni (2012),

“[t]he public sector contributes social responsibility, public accountability, political responsiveness, environmental awareness, local knowledge, and job creation and equity concerns; while the private sector encompasses efficiency, access to finance and resources, knowledge of technologies, innovativeness and nimbleness, and entrepreneurship” (p. 256).

2. Global Trends of PPPs

As a result of the widespread popularity of PPPs around the world in the 1990s, diverse public infrastructure projects, such as building and renewing highways, roads, tunnels, sewerage (recycled water) treatment, harbors, airports, or sport stadiums, have been earmarked as a typical example of PPPs. In particular, as noted above, since the UK’s Private Finance Initiative (PFI) in 1992, many European countries have introduced the number of PPPs considerably for the provision of diverse public services, beyond mere infrastructure-related projects.

According to one data portal of the European Investment Bank (2017) dealing with 28 EU countries, Turkey, and countries of the Western Balkans region (1990-2016), it was found that aside from the transport infrastructure projects, other service areas including environment, education, public order and safety, defence, healthcare, housing, and telecommunications, have been provided for in the form of PPPs. As Table 1.1 shows, in terms of total PPP investments in European countries, as predicted, the transport sector has been the most

prolific. Interestingly, healthcare, education, and the environment sectors have a relatively higher portion of total PPP investment value as compared with other sectors.

Table 1.1 Breakdown of Total PPP Value by Sector

Sector	Investment (billion EUR)
Transport	211.992
Environment	24.308
Education	35.997
Public order and safety	12.954
Recreation and culture	6.807
General public services	7.29
Defence	18.271
Healthcare	50.717
Housing and community services	7.456
RDI (Research, development, and innovation)	0.16
Telcos (Telecommunications companies)	7.291

Source: Table was made based on data adapted from European Investment Bank. (2017). Total value of European PPP projects by sector – all countries and Number of European PPP projects by sector – all countries. European PPP Expertise Centre (EPEC) Data Portal. Retrieved August 12, 2019, from <https://data.eib.org/epec>

From a broader perspective, other countries in Asia, Latin America, the Middle East, and Africa have not been spared from such a worldwide governance change toward PPPs. The World Bank’s (n.d.) Private Participation in Infrastructure (PPI) Project database has dealt with over 6,400 PPP projects in approximately 130 low- and mid-income countries. This database has recorded not only the number and investment value of PPI projects (aggregated ones and divided ones by region or sector), but also their historical changes over the period 1990-2018 in six regions of the world—(1) East Asia and Pacific, (2) Europe and Central Asia, (3) Latin America and the Caribbean, (4) Middle East and North Africa, (5) South Asia, and (6) Sub-Saharan Africa (see Table 1.2, Table 1.3, and Figure 1.1 below).

Table 1.2 Breakdown of PPI Projects by Region

Region	Number of PPI Projects
East Asia and Pacific	2,491
Europe and Central Asia	1,206
Latin America and the Caribbean	3,100
Middle East and North Africa	216
South Asia	1,427
Sub-Saharan Africa	590

Source: Table 1.2 was made based on data adapted from World Bank. (n.d.). Private participation in infrastructure (PPI) project database. Retrieved June 30, 2019, from <https://ppi.worldbank.org/en/ppidata>

Table 1.3 Breakdown of Total PPI Investment by Sector

Sector	Investment (million US\$)
Energy	963,246
Information and communication technology (ICT)	123,590
Transport	627,284
Water and sewerage	76,515

Note: Energy represents electricity and natural gas. Transport represents airports, ports, railways, and roads.

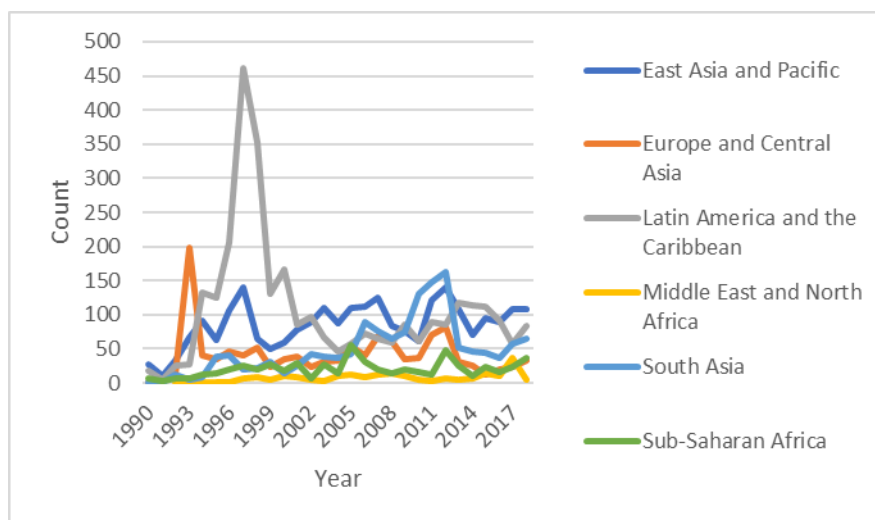
Source: Table 1.3 was made based on data adapted from World Bank. (n.d.). Private participation in infrastructure (PPI) project database. Retrieved June 30, 2019, from <https://ppi.worldbank.org/en/ppidata>

According to Table 1.2, among many countries having transitional economies, with respect to the number of PPI projects, Latin American and the Caribbean region are ranked 1st; East Asia and Pacific ranked 2nd and South Asia is ranked 3rd. In addition, Table 1.3 shows the total US dollar PPI investment by sector. As opposed to expectations, the private sector's involvement in energy service areas such as electricity and natural gas has been quite huge and even bigger than that in transport service areas (see Table 1.3). It is also notable that PPI projects have increased in the industry associated with information and communication technology (ICT) over the last two decades.

Another interesting piece of evidence from the database is that the historical trend of PPI projects across regions during the period 1990-2018 has been non-linear. As shown in

Figure 1.1, in the early 1990s, countries in Europe and the central Asia region were most likely to allow PPI projects in the public sector rather than other countries, but in the mid-1990s, countries in Latin America and the Caribbean region started to introduce PPI projects and in turn, they had a peak in the number of projects during 1997. In addition, it is notable that after their recovery from the financial crisis in the late 1990s, mid-income countries (i.e., Hong Kong, South Korea, Taiwan, Malaysia, Singapore, and Indonesia) in the East and South Asia have exceeded countries in other regions with respect to the number of PPI projects. This change may be due to the rapid growth in economic development (globalization) in those countries during the 1970s and 1980s and by the so-called top-down national planning and development designed to attract foreign direct investment which in turn helped to bring modern jobs and goods to the region (Common, 2000, pp. 135-136).

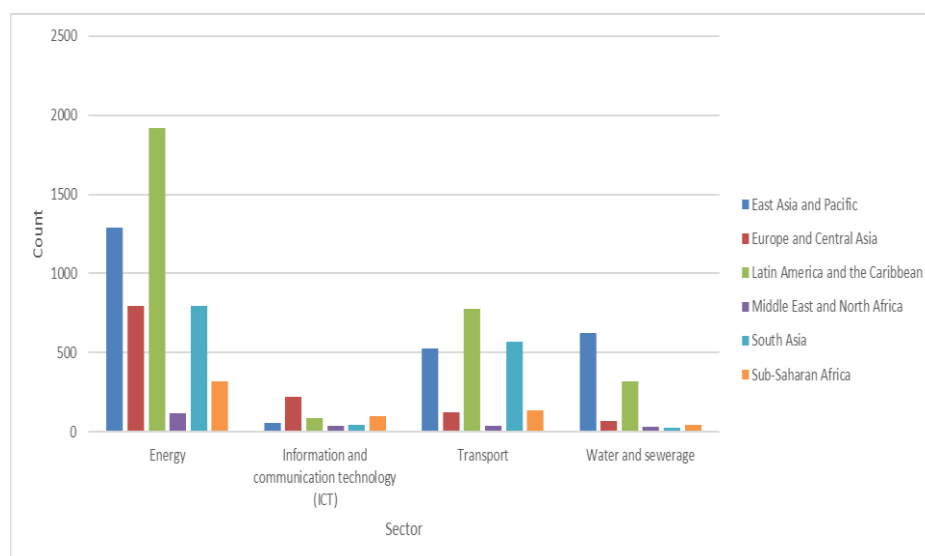
Figure 1.1 Historical Trend of PPI Projects by Region (over the period 1990-2018)



Source: Figure 1.1 was made based on data adapted from World Bank. (n.d.). Private participation in infrastructure (PPI) project database. Retrieved June 30, 2019, from <https://ppi.worldbank.org/en/ppidata>

Furthermore, Figure 1.2 shows the degree to which countries in each region have implemented PPI projects across industry sectors (service areas). It appears that in East Asian countries, PPI projects are largely implemented in the areas of energy and water and sewerage services. In South Asian countries, the projects have come about to support public energy services as well as transport services. Other countries in the remaining regions including Europe, Latin America, Middle East and Africa seem to have actively allowed the private sector's participation (investment) in projects in the energy sector rather than in other sectors (see Figure 1.2).

Figure 1.2 PPI Projects by Sector (Disaggregated by Region)



Source: Figure 1.2 was made based on data adapted from World Bank. (n.d.). Private participation in infrastructure (PPI) project database. Retrieved June 30, 2019, from <https://ppi.worldbank.org/en/ppidata>

3. Definition of PPPs

Despite the widespread attention given to PPPs and their growing popularity in practice around the world, it is interesting to note that there is a lack of an agreed-upon definition of PPPs. According to scholars (e.g., Hodge & Greve, 2005, 2007; Teisman & Klijn, 2002),

defining and describing PPPs is indeed a language game. Notions of PPPs still remain multifaceted and inconclusive (Brinkerhoff & Brinkerhoff, 2011; Hodge & Greve, 2007; Smith et al., 2018). Therefore, Hodge (2010) and Hodge and Greve (2013) have pointed out that “[P]PPs can be understood as a specific project or activity, a management tool or organizational form, a policy, a government tool or symbol, or an historical context and a cultural set of assumptions” (Hodge & Greve, 2013, p. 3).

Given this challenge, based on the widely quoted definitions and descriptions of PPPs in the literature, this present study has compartmentalized the PPP concept into three different perspectives at large: (1) institutional, (2) managerial, and (3) relational perspectives. Some representative examples pertaining to each viewpoint found in the public administration and policy literature are as follows:

First, from an institutional perspective, Savas (2000) defines a PPP as “[a]ny arrangement between government and the private sector in which partially or traditionally public activities are performed by the private sector” (p. 4). Similarly, Bovaird (2004) views a PPP as “[w]orking arrangements based on a mutual commitment between a public sector organization and any other organization outside the public sector” (p. 200). Ni (2012) states that “[a] PPP is an institutionalized form of relationship of public and private actors who, in pursuing their respective objectives, work together toward a joint goal” (p. 254). More specifically, Grimsey and Lewis (2007) note that PPPs are “[a]rrangements whereby private parties participate in, or provide support for, the provision of infrastructure” (p. 2).

Interestingly, from somewhat another angle, Hodge and Greve (2007) envision PPPs as “[f]inancial models that enable the public sector to make use of private finance capital in a way that enhances the possibilities of both the elected government and the private company” (p. 546). Indeed, PPPs can be defined as organizational and financial arrangements between

two main actors—the public sector and the private counterparts (Hodge & Greve, 2007; Rossi & Civitillo, 2014).

Second, from the managerial perspective, for example, Van Ham and Koppenjan (2001) define a PPP as “[c]ooperation of some sort of durability between public and private actors in which they jointly develop projects and services and share risks, costs, and resources which are connected with these projects” (p. 598). In a similar vein, Koppenjan (2005) describes a PPP as “[a] form of structured cooperation between public and private partners in the planning/construction and/or exploitation of infrastructural facilities in which they share or reallocate risks, costs, benefits, resources, and responsibilities” (p. 137). Marques and Berg (2011) characterize a PPP as “[a] form of public procurement with cooperation between a public authority and a private partner aimed at ensuring the funding, construction, renewal, management and/or maintenance of infrastructure, or the provision of a related service” (p. 1585). Forrer et al. (2010), Engel, Fischer, and Galetovic (2011), and Baker (2016) go further to argue that a PPP is “a long-term contractual arrangement” where the public and private entities can share the design, financing, provision, and management of a public service or an infrastructure project, in addition to both the risks and benefits.

Third, from the relational perspective, Rosenau (2000) argues that PPPs refer to public policy networks in which loose stakeholder relationships are emphasized. More specifically, Koppenjan and Klijn (2004) and Steijn, Klijn, and Edelenbos (2011) view that a PPP should be regarded as one type of governance network that has more or less stable patterns of social relations between mutually dependent actors (Steijn et al., 2011, p. 1235). According to Boyer and Newcomer (2015), a PPP is defined as “[a] mutually dependent relationship between the public sector and the private counterpart to construct, renovate and operate a major infrastructure system” (p. 130). Consistent with this viewpoint, Singh and Prakash (2010) and Velotti et al. (2012) point out that a dyadic relationship made up of two

organizations in a wider network embodies the nature of PPPs. Further, Brinkerhoff and Brinkerhoff (2011) discuss the broader implications of a PPP (a cross-sectional collaboration), noting its some critical features including joint determination of goals, collaborative decision-making, non-hierarchical (horizontal) structures and processes, trust-based and informal relationships, shared accountability for outcomes, and synergistic interactions among partners (p. 4).

From the aforementioned approaches and definitions of a PPP, it can be reasonably concluded that PPPs have been explained in somewhat different ways among scholars. No single dimension (approach) has been able to describe and define the central underlying rationale of PPPs. Given this, it is worthwhile reviewing conceptual emphases and finding some common features embedded in the various definitions of PPPs. Hence, more than 50 scholarly works pertaining to PPPs from recently published articles in public administration and policy related journals have been examined and the main (common) components related to PPPs have been set out below (see Table 1.4 and Figure 1.3).

Table 1.4 Word Frequency Query Results (Selective ones)

Word	Count	Word	Count
Public	58	Private	49
Long (Term)	22	Sector	20
Services	15	Partnership(s)	14
Infrastructure	14	Government	13
Risks	13	Actors	12
Project	10	Organizations	9
Provision	8	Costs	8
Partnerships	7	Contractual	7
Joint	6	Financing	6
Contract	4	Shared	6
Responsibilities	4	Cooperation	4
Collaboration/Collaborative	3	Resources	4
Hybrid	3	Contracting	3

Source: Author's own calculations

Figure 1.3 Word Cloud Output of Public-Private Partnerships (PPPs)



Source: Author's own elaboration

In an attempt to cluster various definitions of PPPs found in the literature and look at stemmed word(s), we used a qualitative software program, NVivo 12. As Table 1.4 and Figure 1.3 display, the absolute and relative frequency (counts) of the word(s) were reported by running “word frequency queries” and exporting “word cloud visualizations.” It was found that ‘public,’ ‘private,’ ‘long(term),’ ‘sector,’ ‘services,’ ‘partnership(s),’ ‘infrastructure,’ ‘government,’ ‘risks,’ ‘actors,’ and ‘project’ are among the most frequently referenced word groups.

Overall, it can be acknowledged that PPPs tend to be defined in the following aspects in a broader manner: (1) public and private sectors (actors), (2) long-term impacts, (3) infrastructure projects (government services), (4) service provision, (5) shared risks and responsibilities, (6) contractual relationships, (7) collaborations, (8) cooperation, (9) joint/hybrid works, (10) costs/financing, and so on. They seem to be in line with previous studies (e.g., Gunawansa, 2010; Hodge & Greve, 2005, 2007; Klijn & Teisman, 2003; Savas, 2000; Warsen et al., 2018) emphasizing the significance of long-term partnering relationships,

risk-sharing, joint decision-making (projection), and cooperation between public and private entities.

4. Types of PPPs

Similar to the definitions of PPPs, no single type (form) of PPPs can explain the entire set of PPPs. From a macro-level perspective, PPPs have been somewhat differently implemented and managed depending on the service areas (industries), market contexts, and institutional settings (e.g., legal and political institutions) in many countries around the world. For instance, focusing on the purpose of PPPs, Brinkerhoff and Brinkerhoff (2011, p.8) argue that there are five major types of PPPs at large, noting that each PPP type has diverse organizational structures and related processes as follows: (1) Policy PPPs (Network, Task force, Joint committee, and Special commission), (2) Service delivery PPPs (Co-production, Joint venture, Contract, and Partnership agreement, also known as MOU), (3) Infrastructure PPPs (Joint venture, Build-operate-transfer, Build-operate-own-transfer, and Design-build-operate), (4) Capacity building PPPs (Knowledge network, Twinning, Contract, and Partnership agreement), (5) Economic development PPPs (Joint venture, Contract, Partnership agreement).

From a micro-level viewpoint, in practice, types of PPPs appear to vary depending on the degree of private involvement in each stage of PPP projects – largely ranging from design, build, finance, ownership, operation, to transfer (Hodge & Greve, 2007). Scholars in the area of public administration and policy have named the types of PPPs in very different ways. Acknowledging this, this section narrows the focus to introduce some of the most widely cited PPP types in past and recent scholarship.

First, Hodge and Greve (2007) noted a three-way classification regarding infrastructure projects: (1) BOT (build-own-transfer), (2) BOOT (build-own-operate-transfer), and (3) sale-and-lease-back arrangements. The first and second types of PPPs commonly represent that a private partner (firm) should be in charge of building a facility (building) at its own expense and then sometimes operating that facility, and upon completion of the project (or at the time the concession period ends), transferring property rights to the government agencies. But it should be noted that the second type of PPP requires the private firm retaining the right to operate the facility because the firm uses its own funds to proceed with the project. The third type of PPP occurs for example, when governments sell their buildings and then rent them back later from a financial organization via contract over periods of about 20 to 30 years (Hodge & Greve, 2007, p. 546).

Similarly, Silvestre and Araújo (2012, pp. 321-322) viewed recently implemented PPP contracts in one or another of the following four different forms: (1) Lease-Build-Operate (LBO), (2) Build-Transfer-Operate (BTO), (3) Built-Own-Operate-Transfer (BOOT), and (4) Buy-Built-Operate (BBO). The first form of PPP represents one where the private partner should be responsible for building and operating certain public services (or a facility) but needs to pay a fee to the government. The related long-term return on investment (ROI) as revenue derives from user fees. The second type of PPP occurs when, after building and delivering the public services, the private partner needs to transfer property rights to the public sector but may continue to run the services under a contract. For this, user fees are also collected as revenue. The third kind of PPP is the same as the BOOT type in Hodge and Greve's (2007) classification. In other words, the private partner can continue to operate the related services and collect user fees to recover the ROI by themselves. The last type is different from the aforementioned kinds of PPPs. In this case, the private organizations initially purchase property rights for the government-owned facility or public services from

government agencies and then develop and operate them in the long term. Interestingly, sometimes a franchise payment to the government will be expected.

More specifically, other scholars (e.g., see Perez & March, 2006; Ni, 2012) have categorized the means by which public services are categorized and delivered (project delivery options *per se*) through PPPs into the following six approaches: (1) Design-Build (DB), (2) Design-Build-Operate (DBO), Design-Build-Maintain (DBM), and Design-Build-Operate-Maintain (DBOM), (3) Design-Build-Operate-Turnover (DBOT), Build-Operate-Transfer (BOT), and Design-Build-Warranty (DBW), (4) Build-Own-Operate (BOO), Buy-Build-Operate (BBO), and Buy/Lease-Develop-Operate (BDO), (5) Maintenance and Operation, and (6) Program Management and Strategic Planning (Ni, 2012, pp. 255-256).

Although research has documented apparent categorical differences and private sector service-delivery foci among the different types of PPPs, for typical (traditional) types of PPP projects, there has been a commonly held perception that private partner(s) are able to participate in designing, building and/or operating (maintaining) a facility in accordance with the contract agreement, within an agreed-upon time frame and at a predetermined price. In addition, once completed, the private counterparts can transfer the facility to government agencies. In this case, they tend to provide a warranty to guarantee the facility's condition. If necessary, they also should be engaged in renovating, modernizing, and expanding the facility. And then the private partners may operate it under a contract with government agencies. Of course, government agencies are able to simply outsource the maintenance and operation of the facility to private companies. Further, the private partners are expected to support government projects (mostly large, complex projects) improve program management or develop strategic planning associated with the design, construction, and activities of a facility.

5. Determinants of PPPs

Why do some governments adopt PPPs and while others do not? Generally speaking, it can be reasonably argued that PPPs have been adopted because governments need to meet growing public needs (demands) more effectively by using the private sector expertise, information, and capital (resources) (MOF, 2012). In the words of Forrer et al. (2010),

“[I]n a globalizing world that is more integrated, complex and volatile, governments simply may not possess the prerequisite knowledge, capacity or managerial skills ... governments need to engage partners that have the necessary expertise, know-how, and managerial adeptness needed to carry out government responsibilities” (p. 477).

In recent years, governments’ willingness to adopt PPPs is likely to be more conditional and strategic and appears to be intertwined with a government’s desire for smoothing the effect of widespread fiscal stress and achieving improved public performance, cost reduction (cost savings), higher levels of competition in the global market, or environmental protection (Miller, 2000; Ni, 2012). Therefore, to answer the aforementioned basic policy adoption question more specifically, there is a need to closely look at the set of motivating factors (determinants) of PPPs within the developed-developing economy dichotomy (developed-versus-developing countries), such as socio-economic and demographic conditions and their historical changes, political environment/ideology, election cycles (years), legal institutions, interest groups, societal and cultural expectations, and previous PPP experience in each country (e.g., for more information, see Hammami, Ruhashyankiko, & Yehoue, 2006; Hyun, Park, & Tian, 2018; Wang & Zhao, 2014).

As discussed earlier in this chapter, some European countries (i.e., UK and France) had struggled with a lack of (public) funding sources to support their infrastructure projects, which can help lead to enhanced community development and economic growth in the long term (Hodge & Greve, 2007; Osborne, 2001). This appears to be the main reason why PPPs have been initially implemented in developed countries. Moreover, the need for sharing and

allocating risks associated with a project between all stakeholders was another key reason for developed countries to lower the burden for risk-averse public actors (Gunawansa, 2010, p. 442). For developing countries having transitional economies, Gunawansa (2010) argues that the need for sufficient financial resources, modern technology, and efficient management skills for economic development have been considered as the main determinants of PPP operations (p. 442).

Beyond such generally accepted rationales, recent empirical research has provided evidence indicating PPPs in developing countries are likely to be affected by diverse internal and external factors. For example, during 1990-2003, Hammami et al. (2006) explored determinants of PPPs for infrastructure in developing countries based on the World Bank's Private Participation in Infrastructure (PPI) database. They basically posited that the PPP drivers vary across service areas (industries) and depend on the nature of public infrastructure. In their study, it was found that “[P]PPs are more likely to be common in countries where governments suffer from heavy debt burdens and where market size is large enough to allow for cost recovery” (Hammami et al., 2006, p. 4). Their findings also revealed that countries with less corruption, experience with PPP operations, and effective rule of law are more likely to adopt PPPs rather than countries where this is not the case.

Drawing upon Berry and Berry's (1990) widely cited policy adoption/diffusion framework—internal determinants versus external (neighboring) influences,² Wang and Zhao (2014) investigated the case of Toll Road Financing through PPPs. Based on US data during the period 1985-2010, they empirically examined which factors (determinants) have been highly influential in the adoption of PPPs for highway tolling projects in state governments. In terms of internal determinants of PPPs, citizens' demands (e.g., traffic control), fiscal pressures, state wealth (e.g., a higher state income level), PPP legislation, and the number of PPP projects in the state (earlier experiences of PPPs) turned out to have a significant and

positive influence on the take up of PPPs. On the other hand, liberal political ideology and public employees' resistance to change turned out to be negatively associated with the adoption of PPPs. With respect to external influences, somewhat unexpectedly, the number of neighboring states that have adopted PPPs appeared to have a negative impact on PPP adoption. This implies that governments indeed learn from each other because the effects of seeing unsuccessful PPP cases may certainly work as a strong barrier to a state's willingness to adopt PPPs.

Focusing on PPP investments in infrastructure in developing countries (mostly in Asia), Hyun et al. (2018) found that macro-economic factors such as the degree of economic growth or inflation are the most relevant determinants of PPP projects. Consistent with Hammami et al.'s (2006) and Wang and Zhao's (2014) findings, it was also found that the least corrupt (or corrupt-free) countries and ones having previous PPP experience are more willing to implement innovative project operations through PPPs than others.

6. The PPP Debate: Advantages and Disadvantages

It should not be surprising that some scholars and practitioners are more likely to prefer adopting and implementing PPPs for civil infrastructure, while others tend to be more critical of them. Notably, the argument in favor of PPPs and the counterarguments should be viewed as providing only suggestive rather than conclusive evidence because the impact of PPPs on each state or society still remains an ongoing topic of debate.

Despite mixed and inconclusive arguments and evidence, first of all, one can argue that "better value for money (VFM)" has long been held as one of the primary advantages of a typical PPP project in the literature and government documents (e.g., Hodge & Greve, 2007; Hwang, Zhao, & Gay, 2013; MOF, 2012; Smith et al., 2018; Warsen et al., 2018). In PPP

projects, by switching the role of government from a service provider to a service purchaser, public agencies are expected to keep utilizing private sector resources (mostly finance capital) and experience much lower levels of financial burden in delivering goods and services over the project's whole life-cycle (Savas, 2000; Smith et al., 2018). Thus, as Hodge and Greve (2007) argue, because pressure on government budgets is reduced, PPPs allow governments to have a greater capacity to spend on other policy priorities (p. 548).

Second, PPPs enable the public sector not only to enjoy financial and material benefits (e.g., profits and increased transport capacity) through private partner engagement in the projects (Klijn & Teisman, 2003), but also to have access to the intangible, special expertise (knowledge) and management know-how of the private sector, including better technology, enhanced commercial potential of the project, competitiveness, and innovative solutions for the desired public service delivery (Brinkerhoff & Brinkerhoff, 2011; Forrer et al., 2010; MOF, 2012). In doing so, it can be reasonably expected that PPPs provide better performance (improved service quality or diversity) compared to more traditionally tendered projects (Ewoh & Zimmerman, 2010; Hodge & Greve, 2005; Savas, 2000; Warsen et al., 2018).

Third, while allocating or sharing risks embedded into PPP projects to either side (according to each party's expertise), stakeholders in the public and private sectors are more likely to focus on the ways of seeking desired service production and delivery together (Hodge & Greve, 2007; MOF, 2012). For example, as in the Public Private Partnership Handbook of Singapore (MOF, 2012), while government agencies can take on political and regulatory risks, business firms can deal with risks pertaining to design, construction, and financing in a boarder manner. In pursuit of common (mutual) goals, government and private firms can work together as partners in the long term. For this, in practice, a few critical conditions may be required, such as a commitment between two or more parties engaged in a PPP project, consistent communication between government and private partners, well-

defined responsibilities and authority, trust-based relationships, and consensus-based decision making (e.g., see Brinkerhoff & Brinkerhoff, 2011; Zhang, 2005).

Lastly, PPPs can offer a so-called, win-win-win solution for all stakeholders in the public sector, the private sector, and with the public (the people sector) (MOF, 2012, pp. 6-7). Specifically speaking, through PPPs, the public sector can basically benefit from the private firms' cost-efficient (cost-saving) operation of services within the given timeframe (Savas, 2000; Yang, Hou, & Wang, 2013). Besides, the private sector can also benefit from government support towards more business opportunities and by introducing new services or innovation into the financing and management of government assets and services (Marques & Berg, 2011). With the support from the public sector, the private counterparts can gain various tax incentives, stable cash flow, and further reasonable returns on their investments (profit generation through recurrent income streams over the certain period of time) (e.g., for more information, see Hwang et al., 2013; Kouwenhoven, 1993; Ni, 2012; Ping & Trager, 2014; Yang et al., 2013). Furthermore, PPPs can ensure greater benefit to the public eventually, in that civil infrastructure is a way to meet public policy goals and needs (Li et al., 2005).

On the other side of the coin, there are, of course, several noted disadvantages of PPPs. First, without proper legal safeguards and strong (and specific) managerial guidelines, PPPs will easily fail to provide a satisfactory level of service performance. Although the PPP stakeholders are expected to be more accountable to the government and customers (citizens) due to the presence of rewards and penalties in the contract (Marques & Berg, 2011), the greater the scale of PPP projects, the greater the likelihood of being exposed to mismanagement and corruption (Coghill & Woodward, 2005; Landow & Ebdon, 2012). From this perspective, some scholars (e.g., see Bloomfield, Westerling, & Carey, 1998; Greve, 2003; Hodge & Greve, 2007; Marques & Berg, 2011; Warsen et al., 2018) point out

that compared to traditional procurement (e.g., public works or outsourcing contracts), PPPs in infrastructure projects have been more associated with time delays, financial risks, and scandals such as fraud, waste (cost overrun), abuse, false accounting (disguising the real costs), thereby leading to more debt for governments or higher taxes for citizens. Presumably, this is attributable to uncertainty within PPPs and the complexity in their nature (largely due to a longer period of time), the inexperience of the public and private sectors (unfamiliarity with the PPP mechanism), or the reluctance to share risks with counterparts (Gunawansa, 2010; Landow & Ebdon, 2012; Li et al., 2005; Savas, 2000; Van Slyke, 2009).

Second, because the goals of the public sector and the private partners basically diverge, many PPPs may face agency problems that stem from conflicts of interest, self-interested contractor's opportunistic behaviors, or asymmetric information (Edwards & Shaoul, 2003; Savas, 2000; Sclar, 2000; Smith et al., 2018; Van Slyke, 2009). In turn, there is no guarantee that performance expectations can be always met and the public interest can be protected. In this vein, Smith et al. (2018, p. 101) argue that "[a]gency problems are most likely to occur during the effort to achieve *mutuality*, because partners in PPPs come from *different* sectors and possess *unequal power* in the partnership."

In addition, there has been concern over how to measure the service performance of PPPs. While acknowledging that further research into performance evaluation of PPPs is needed, scholars have pointed out the difficulty of identifying clear and relevant performance indicators across diverse PPP projects (Baker, 2016; Smith et al., 2018; Yang et al., 2013). Nonetheless, it can be reasonably expected that performance measures may include the quality of service provided, cost-effectiveness (actual service cost in comparison with expected one), and other public values such as transparency, equity, and accountability.

7. A Review: Theoretical Approaches to PPPs

Initial scholarly attention regarding the positive influence of private involvement in public management can be traced to traditional public choice theory. From this theoretical perspective, public organizations and employees tend to become incompetent or inefficient in providing public goods and services, particularly in managing (reducing) costs. This is attributable to “*typically highly bureaucratic*” organizational structures embedded in the public sector (Hammami et al., 2006, p. 5). These characteristics of public bureaus lead public management systems to become monopolistic and inflexible in their practice. Acknowledging these challenges, scholars have long argued that externalizing service production (market-oriented provision) rather than keeping it under the influence of the bureaucracy (in-house (direct) provision) is likely to ensure the delivery of better services at lower cost, a retention of flexibility and competition in the process, the utilization of specialized technical skills, funding, knowledge, or know-how offered by the private sector, and also the ability to offer greater customer choice (e.g., see Ferris, 1986; Forrer et al., 2010; Hefetz & Warner, 2012; Kettl, 1993; Osborne, 2001; Savas, 2000). In this vein, Hammami et al. (2006) emphasize the significance of PPPs in that by involving private partners in government program delivery, inefficient public spending is reduced and instead public organizations are allowed to respond to market forces and innovation to overcome the lack of their managerial skills in the area of complex infrastructure projects.

In line with the abovementioned generic viewpoint, to date, a large body of literature on PPPs has further relied on two generally accepted theoretical approaches—principal-agent theory and transaction cost theory—to frame their analyses. These theories provide several rationales as to why PPPs can resolve a situation in which governments find it challenging to manage PPP projects effectively and how policy makers can tackle a propensity of mismanagement and corruption problems. First of all, the principal-agent theory implicitly assumes that in a PPP context, there are two rational, self-interested actors—the principal and

agent: the principal represents a public authority, whereas the agent represents its private counterparts (here, investors or developers, called contractors) (Smith et al., 2018). As discussed earlier in this chapter, in long-term on-going partnering relationships, both principals and agents are expected to commonly take up leading roles in making decisions and sharing risks.

Specifically, however, during the contract period, while the public partner (principal) is highly charged with oversight responsibility to control over the quantity and quality of the services delivered to users, the private partner (agent) is obligated to be held accountable for making the best investment choices and optimizing costs, during the construction and operation phases, respectively (Baker, 2016, p. 434; Iossa & Martimort, 2015). Besides, the public partner as a principal tends to play a leading role as a regulator as well as an arbitrator sometimes in cases where regulatory bodies and the courts are subject to the government influences (Baker, 2016, p. 432). In such a situation there is also an unequal power distribution between these two actors in the transaction-based contract. They basically have different orientations/motives (welfare maximization versus profit maximization)³ and subsequent conflicting interests, and in turn, they (mostly principals) are likely to struggle with the challenges associated with asymmetric information (e.g., adverse selection and moral hazard) and uncertainty (e.g., the risk of opportunism) over the period of long-term contractual relationships (Eisenhardt, 1989; Smith et al., 2018; Soomro & Zhang, 2015). Such agency problems appear to jeopardize the efficacy of PPP projects in the short run and hinder the expansion of PPP markets in the long run (Baker, 2016, p. 451).

Second, some of the leading scholars supporting transaction-cost theory (e.g., Coase, 1937; Simon, 1972; Williamson, 1975, 1981) have long viewed that transaction-based contracts are not necessarily complete due to the bounded rationality of human agents and their opportunistic (shirking) behaviors, leading to extra costs and burdens being placed on

governments (principal). Kim (2017) agrees with this point, stating that “[c]ontractors have better information about their day-to-day service delivery operations and more professional expertise than governments do, and information about their behaviors are not easily observed by the principal ... therefore, may cause inefficiency and unavoidable high transaction costs” (p. 757). Brown and Potoski (2005) provide a deeper discussion about these costs, focusing on two service-specific factors initially identified by Williamson (1981)—ease of measurement and asset specificity (p. 329). They argue that “[t]he costs of negotiating, implementing, monitoring, and enforcing contracts are higher when services have outcomes that are difficult to measure and when services require asset-specific investments that increase the likelihood of monopoly markets” (Brown & Potoski, 2005, p. 327). Furthermore, beyond the typical transaction (management) costs associated with the government’s screening (so-called, the ‘tendering’ phase of PPP deals), preparing contracts, negotiating, supervision, or monitoring works, other scholars (e.g., see Baker, 2016; Soliño & de Santos, 2016) maintain a closer look at additional *ex-ante* and *ex-post* costs (including hidden costs) and find them to be mostly stemming from the partners’ opportunistic behaviors motivated by self-interest,⁴ complexity of the PPP project, and unforeseen events that may happen during the contract period of PPPs. When considered together, it seems evident that in cases where transaction costs indeed outweigh potential benefits of PPPs, government agencies will eventually struggle with PPP failure.

In the wake of potential risks of the PPP management process, Baker (2016) insists that the size and scope of such costs can be minimized depending on how well property is protected and rules are defined and enforced (p. 438). In short, a state’s institutional (regulatory) quality such as property and contractual rights, especially in developing countries, matters for the success of PPP projects. On the other hand, to ensure highly risk-averse agents’ behaviors in pursuit of their own self-interest become aligned with those of the

principals, and also to lower transaction costs embedded in PPPs, Soliño and de Santos (2016) point out the necessity of incentives (control mechanisms *per se*) in the tendering, contract-awarding, and operating phases of PPPs. Examples of incentives can be market competition, asset ownership, risk sharing, or enhanced reputation (Soliño & de Santos, 2016, p. 100). Likewise, Warsen, Klijn, and Koppenjan (2019) argue that to ensure the agents perform well and abide by the contract, the role of payments, sanctions, and performance indicators of PPPs is indeed important. In a broader array of government contracting, Kim (2017, 2019) envisions that monitoring-based incentives and penalties can help deter the opportunism of self-interested agents and further decrease transaction costs. While positive incentives (rewards) for satisfactory performance of private partners may include, for example, the granting of contract extensions and renewals, giving constant feedback and/or discretion, and financial inducements (e.g., bonus payments), negative incentives (sanctions) for poor or unsatisfactory performance of private counterparts may involve monetary penalties, contract termination, prohibition from future tendering/procurement practices and legal litigation (Brown & Potoski, 2005; Girth, 2012; Kim, 2015, 2019).

In addition, it is notable that the focus of recent PPP literature has been to uncover why relational factors (conditions) rather than transactional factors matter for the growth and success of PPPs. Now that participating actors (partners) in PPP projects tend to continue to be dependent on each other during the long-term contract period and one (perhaps the private partner) might possess more resources than the other (the government agency) (Klijn & Teisman, 2003), the public-sector actors will need to strategically manage on-going partnering relationships to hold their counterparts accountable for their decisions and subsequent performance. With the view that private-sector actors play a role as more pro-organizational partners (stewards *per se*) than self-interested agents in a government contracting setting including PPPs, this theoretical stream seems to provide useful insights to

supplement the generally accepted theories discussed above, including principal-agent theory and transaction cost theory, and suggests a well-rounded, ideal partnership relationship (Kim, 2015; Kim, 2017, p. 758). In the words of Amirkhanyan, Kim, and Lambright (2012),

“[T]ransaction contracts are short-term, economic exchanges based on carefully detailed contractual agreements and close oversight of the provider’s compliance. In contrast, relational contracts are based on open-ended long-term exchanges in which personal ties and informal communication foster trust and flexible approaches to solving implementation problems” (p. 344).

Consistent with this viewpoint, public administration scholars have highlighted the role of collaborative (network-based) management, cooperation and trust-building between the partners, informational communication and openness in PPPs (e.g., see Klijn & Teisman, 2003; Van Slyke, 2009; Warsen, Klijn, & Koppenjan, 2019). These are believed to help government agencies and managers to be less vulnerable to the opportunism of self-interested agents in the short term, and to reduce transaction costs and ensure accountability in the entire PPP process in the long term. Interestingly, according to Sclar (2000), Brown, Potoski, and Van Slyke (2006), and Amirkhanyan, Kim, and Lambright (2010), relational contracts tend to be used in situations in which government contracting faces high-level asset specificity and uncertainty (Kim, 2015).

Notes

1. The time span of PPPs varies across governments or areas. PPPs often tend to extend beyond 30-40 years (Boyer & Newcomer, 2015). For example, in the United Kingdom, PPPs tend to last for 30 years in general, whereas in the United States, some PPPs have operated for over a century (Ferrer et al., 2010, p. 478).
2. Neighboring influences refer to neighboring governments (other states or countries) that already experienced PPP activities (a policy diffusion factor *per se*).
3. There is a general understanding that both principals and agents are considered as utility maximizers (social utility versus personal/private utility) with bounded rationality (Kim, 2015, 2017; Soliño & de Santos, 2016; Williamson, 1981).
4. The related costs, for example, include renegotiation costs and costs arising from litigation among partners (Soliño & de Santos, 2016, pp, 112-113).

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