

**Are Public-Private Partnerships a Healthy Option? A Systematic Literature Review of
“Constructive” Partnerships between Public and Private Actors**

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Are Public-Private Partnerships a Healthy Option? A Systematic Literature Review of “Constructive” Partnerships between Public and Private Actors

Abstract

Governments around the world, but especially in Europe, have increasingly used private sector involvement in developing, financing and providing public health infrastructure and service delivery through public-private partnerships (PPPs). Although PPPs have attracted practitioner and academic interest over the last two decades, there has been no attempt to integrate the general management and health management literatures to provide a holistic view of PPPs in healthcare delivery. This study analyzes over 1,400 publications from a wide range of disciplines over a 20-year time period. We find that despite the scale and significance of the phenomenon, there is relatively limited conceptualization and in-depth empirical investigation. Based on bibliographic and content analyses, we synthesize formerly dispersed research perspectives into a comprehensive multi-dimensional framework of public-private partnerships. In so doing, we provide new directions for further research and practice.

***Keywords:** Public-private partnership, public and private actors, health management, management practice, systematic literature review, content analysis, bibliographic analysis*

Introduction

European countries and indeed governments around the world have increasingly turned to private sector involvement in the development, financing and provision of public infrastructure and services (Maynard, 1986; Zheng et al., 2008; Mahoney et al., 2009; Anderson, 2012; Saussier, 2013). Their advocates argue that by promoting increased diversity of provision and contestability, such ‘partnerships’ secure better quality infrastructure and services at ‘optimal’ cost and risk allocation (Kwak et al., 2009). Although conceptually a public-private partnership (PPP) can be defined relatively simply, as “a long-term contract between a private party and a government agency, for providing a public asset or service, in which the private party bears significant risk and management responsibility” (World Bank Institute, 2012:11), there is variation in practice based on the separation of ownership and risk-bearing between the public and private sector actors. This study focuses on PPPs defined as business models for linked infrastructure and services, excluding, for instance, PPPs for drug research where private sector contributions are of a more charitable nature.

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Over the past decade, the use of PPPs has grown almost five-fold (PWC, 2010), with nearly US\$ 4 billion of health PPP contracts were signed worldwide in 2010 alone (Carty, 2012). It is intriguing to note therefore that despite their global prevalence, empirical evidence of benefits is mixed. Nonetheless, PPPs continue to be deployed for a range of public sector infrastructure and service delivery. In the UK, there are more than 600 PPPs in the form of Private Finance Initiative (PFI) arrangements worth over US \$100 billion for hospitals, schools, prisons, bridges, roads and military equipment (HM Treasury, 2013). More specifically there has been a sharp rise – again predominantly within Europe/UK - in PPPs to deliver healthcare infrastructure including buildings, large technology systems, clinical services, and associated

non-clinical maintenance and facility management services (Barlow et al., 2013; Roehrich et al., 2013). The increasing popularity of PPPs can also be observed in many other developed, developing and emerging economies (e.g. English, 2005; Guasch et al., 2008; Yang et al., 2013).

Although the PPP phenomenon has attracted a wide range of practitioner and academic comment, there is limited systematic review of evidence and the literature remains largely fragmented (Kivleniece & Quelin, 2012). In this article, we engage in a comprehensive review of the PPP literature and published empirical evidence to ask the following questions: (i) *What is the current state of public-private partnership research?* and (ii) *What are the emerging themes of interest for health research?* This study offers a timely analysis of health PPP arrangements, constituting a large proportion of PPPs around the world, rather than a broad overview of PPPs (e.g. Kwak et al., 2009). We address these questions and current limitations in the literature by developing a framework for research on public-private partnerships based on comprehensive bibliographic and content analyses of over 1,400 PPP papers published over the last two decades. Following the suggestions by Ferlie et al. (2012), and in contrast with narrow classification approaches such as Pantouvakis and Vadoros' (2006) review of PPP in construction, we include the wider management literature alongside specific PPPs in the healthcare context, thus accessing a broader range of ideas and theoretical traditions.

The paper is structured as follows: After outlining the systematic review method, we analyze the PPP literature for specific patterns and trends. We then offer a synthesis of PPP research, distinguishing between specific themes connected to the policy and practice of PPPs and their outcomes. The paper concludes by proposing a multi-dimensional framework and drawing out implications for both theory and practice.

Methods

The systematic review adopts an iterative review procedure and search strategy – Figure 2 - aimed at mitigating bias and deploying a comprehensive search and analysis framework, incorporating cross-referencing between researchers, extensive database searches, and applying agreed exclusion criteria (Tranfield et al., 2003; Deneckere et al., 2012). Commencing with an initial scoping study, seminal PPP papers were content analyzed using the software package NVivo. This initial analysis established a focus for the subsequent analysis stages by, for instance, specifying the search period and search terms. In addition, eight subject experts were interviewed to further improve the search strategy and search terms. This led us, for instance, to explicitly consider both macro policy dimensions and more operational processes such as negotiation, governance and stakeholder management.

The analysis was conducted in two parts. In part I, the Web of Knowledge database was searched for PPP-related publications between 1990 and 2011. In part II, we focused on PPP research papers published in diverse journals such as, but not limited to, accounting and finance, strategic management, operations management, economics and healthcare. Based on published reviews and journal ranking lists from the UK Association of Business Schools (ABS) and Web of Science rankings, we selected peer-reviewed journals, because they exhibit high disciplinary standing and can be considered validated knowledge (Podsakoff et al., 2005). This ensured that the publications included had been subject to assurance systems for academic quality and rigor (Lockett et al., 2006). Our systematic review process is outlined in Figure 2.

Please insert 'Figure 2' about here

Subsequently, specific search terms were the subject of an extensive consultation phase including all authors and a research assistant. The terms included PFI, Private Finance Initiative, PPP, Public Private Partnership, Private Finance Project, public or private

infrastructure projects, private sector contracting, risk transfer, value for money, VfM, PFP, DBFO, BOOT, public infrastructure project*, and inter organization* public private relationship*, public non-profit, public enterprise*, public alliance*, and non-profit partnership*. ISI Web of Knowledge is widely considered to be the comprehensive database for scholarly work. The period 1990-2011 was selected because relatively few PPP papers were published before 1990 and this period provides sufficient span to enable a comprehensive and meaningful analysis. After reading the abstracts, we excluded editorials, transcribed speeches, book reviews and books for our subsequent analyses. All remaining papers were then read and evaluated for inclusion by categorizing them against an agreed set of criteria, ensuring that the papers were: (i) focused on public-private relationships; (ii) scholarly publications; and (iii) of conceptual, quantitative or qualitative empirical nature.

Data analysis was supported by NVivo to help summarize, compare and contrast emergent themes. For example, key themes such as risk management, stakeholder alignment and accounting treatment emerged from in-depth analysis and facilitated the data synthesis steps leading to a multi-dimensional framework. The data synthesis and analysis, a key value-added element of a comprehensive review (Crossan & Apaydin, 2010), consisted of two parts. First, basic patterns of PPP publications were examined; and second, themes – policy drivers, strategic processes, operational processes and PPP outcomes – across macro and micro levels of analysis were identified.

Analysis I: Patterns of Publication

Mirroring the upsurge in PPPs over the last two decades, figure 3 illustrates the increase in publications, including a number of special issues, in a wide range of journals. Although PPP has been subject to scrutiny by researchers from various different disciplines, accountancy, finance and public management perspectives predominate. That these areas are particularly

interested in PPP research is not surprising – after all, notions of financial value and risk transfer lie at the conceptual heart of PPP, and public sector specialists should question policies that influence the boundary of the State (Engel et al., 2013). However, given that the phenomenon invokes overlapping issues with various social, political and economic implications, a greater diversity in the conceptual ecology might have been expected. For instance, neither the organizational studies or strategic management fields nor their functional management sub-fields, such as procurement and supply management, human resources, and information systems management, have shown sustained interest. Equally, given that PPPs are intended to influence boundaries, for instance, between state and market, principle and agent, products and services, very little research (with some notable exceptions, e.g. Klijn & Teisman, 2003) has adopted a network perspective.

Articles also cover a number of different sectors with healthcare, transport, housing and education being most prevalent. While PPP publications in the 1990s focused mainly on the healthcare and transport sectors, there was a trend towards other sectors such as urban redevelopment, prisons, and education from the early 2000s (e.g. Cabral et al., 2010). There were few cross-industry studies that capture the variants in PPP arrangements including different sectors, project sizes and ownership structures. Perhaps inevitably this diversity has meant that the specific definition and type of PPP project is often variable and sometimes unclear (see Table 1).

Please insert 'Table 1' and 'Figure 3' about here

To date the predominant countries for PPP research have been the USA and UK (63% of the total PPP-related publication) but, just as PPPs are gaining prominence elsewhere, there is now a growing body of work focusing on both developed economies (Germany, Netherlands and Ireland, Australia) and, increasingly, developing countries such as India and Lebanon (Figure

4). Although relatively limited, there is a promising body of international comparative work such as Boxmeer and Beckhoven's (2005) comparative study of Dutch and Spanish urban regeneration PPPs.

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Problematically, there is no consistency or cumulative development with regard to, for instance, methodology, units of analysis, key findings and sample. Indeed, a relatively high number of papers do not mention or clarify their research methodology. The case study approach tends to be the primary data collection method at the project and inter-organizational level of analysis, with more limited use of a survey methodology. Surprisingly, despite the long-term nature of most PPPs, there is only limited evidence of publications adopting a longitudinal or process perspective (e.g. Roehrich & Caldwell, 2012). Prior publications address 'whole life-cycle' issues in PPPs by primarily relating to important themes such as costing analysis. However, other important whole life-cycle management issues such as staff turnover and relationship management remain neglected and therefore constitute fruitful further research avenues. Table 2, for example, summarizes an illustrative selection of PPP articles highlighting how different authors have studied PPPs at different levels of analysis, adopting different theoretical lenses and emphasizing various key dimensions. Large-scale quantitative and longitudinal studies were, until recently, rare and much of the evidence relies on case studies.

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Analysis II: Emerging PPP Research Themes

In order to clarify the state of the art of PPP knowledge and pave the way for future research, this section provides a summary and critical reflection on the key themes - PPP outcomes, the

policy of PPPs, the practice of PPPs - identified by the review. We acknowledge that there will be thematic overlaps between the subsections, but it is the unit/level of analysis that acts as a key distinguishing factor. More specifically, while the Policy theme focuses on the macro, the Practice theme focuses on the meso and micro levels of analysis.

PPP Outcomes

The theme 'PPP outcomes' focuses on the benefits and disadvantages of deploying PPP arrangements. Extant literature offers an incoherent picture of PPP outcomes with regards to its benefits and disadvantages. Potential benefits are said to include the freedom to allow public sector to concentrate on, for example, clinical services, rather than managing infrastructure, and increased efficiency in project delivery realized by the private sector (Barlow et al., 2013). However, there is a significant number of studies raising concerns over PPP performance: it may stifle improvements because of limited contractor capacity compared to project size, that transaction costs are too high throughout the project life-cycle, there is limited integration between clinical service models and infrastructure design and delivery, and limited innovation in new-build healthcare PPPs (Barlow & Köberle-Gaiser, 2009).

Studies conclude that hospital build quality is not unambiguously better for PFIs, and facilities management services provide actually lower value for money (VfM) when compared to non-PFI hospitals (Liebe & Pollock, 2009; Pollock et al. (2011). There is also a critique that notions such as VfM and risk transfer are regularly conflated; leading to spurious conclusions regarding benefits and costs. English (2005), for example, used the failure of the Latrobe Regional Hospital in Australia as a reminder of both the importance and the difficulty of VfM estimates. In the UK, PFI arrangements have been criticized on all these points and ample concern has been expressed about the cost of the debt and risk incurred compared to government borrowing (Liebe & Pollock, 2009).

The Policy of PPP

Subthemes in this section are mainly concerned with macro-level reflections on finance issues such as accounting treatment, risk allocation, etc. and policy concerns such as the general appropriateness and fit of PPPs for delivering public sector infrastructure and services.

The often-stated policy aim of PPPs, part of the New Public Management logic, is to achieve higher efficiency by bundling investments, infrastructure and service delivery (Boyne, 2002; Engel et al., 2013) in order to draw on expertise and sometimes financial resources, as illustrated by UK PFIs, from the private sector (Hood, 1995). Additionally, it is suggested that working with private sector companies may allow public sector organizations to access idiosyncratic resources and capabilities that may bring about more innovative responses and, for instance, improved health services quality (Kivleniece & Quelin, 2012). This is in stark contrast to a purely contracting out approach where the public sector “hands over” public sector infrastructure and service provision to the private provider with limited control or involvement. Set against these normative policy assertions however is the equally prevalent critique that such ‘partnerships’ are essentially political symbols and political choices (‘PPP or nothing’: Lonsdale, 2005a). As a policy tool, they are simply an attempt to respond to infrastructure shortfalls at a time of budgetary constraints by moving expenditures off-budget and transferring costs on to future governments/taxpayers (Linder, 1999; Winch, 2000).

Extant literature does not offer empirical analyses deploying, for example, longitudinal estimates of the success of moving expenditures off-balance sheet. This gap offers fruitful avenues to strengthen evidence around the (dis)benefits of PPP arrangements. Similarly, there are enduring concerns that by involving private organizations in government decision-making, the dynamics of public accountability are changing (Forrer et al., 2010). No matter how legitimate these criticisms may be, the themes identified by the systematic review were focused

on articles that engage with PPPs as a significant policy reality and seek to deploy them as effectively as possible. It highlighted three specific themes.

There remains a meaningful debate regarding the contingent appropriateness of specific PPPs for the delivery of public infrastructure in different sectors. Our analysis shows that there is no coherent picture emerging from practice. For example, Torres and Pina's (2001) survey of PPPs across EU local governments shows that the majority of these projects are associated with activities that are not typically core public services. In contrast, PPPs in the UK and USA have been deployed in delivering hospitals, schools and defense systems (Brinkerhoff & Brinkerhoff, 2011). Walder and Amenta (2004) conclude that PPPs are best suited for medium-sized projects which can function as stand-alone entities with a low-risk profile. When considering whether to deploy public-private partnerships, attention needs to be drawn to possible power and information asymmetries. Some authors argue that public sector organizations often assume sub-ordinate roles in PPPs which may trap them into post-contractual 'lock-in situations' considering the length of these contracts (Lonsdale, 2005a).

Moreover, risk management and financial evaluation in PPPs continues to attract much attention (e.g. Froud & Shaoul, 2001; Ball et al., 2003). Risk transfer plays a crucial role for achieving value for money in PPPs, but questions such as which risks are more appropriately allocated to the public sector and which may be better shared between partners still remain highly contested (Bing et al. 2005). A number of studies draw attention to the dysfunctional effects of lengthy and expensive contract negotiation periods (Dixon et al., 2005), suggesting that there is still no clarity regarding, for instance, the types of risk that can be transferred to the private sector and when they can be transferred (Froud, 2003; Hodge, 2004; Lonsdale, 2005b). To date there is limited research exploring risk and benefit sharing between partnering organizations and across the whole PPP project network; despite the repeated observation that

(dysfunctional) extended contract negotiation is the direct consequence of risk allocation and quantification at the outset of the inter-organizational relationship (Iossa & Martimort, 2012).

Further research could explore the relationship between risk management, innovation, and other proposed positive outcomes from PPP arrangements, and whether risk management and incentives are effective instruments of PPP governance. The review draws attention to the need for standardization of risk assessment tools, appropriate pricing of risks and the improvement of transparency through the availability of historical data for quantifying risks *ex ante* and selecting the most appropriate private partner. Another challenge of risk transfer is associated with a limited degree of market competition due to a low number of bidders and market entry barriers (Hall, 1998). For instance, Romzek and Johnston (2002) find that contracting partners face barriers such as a lack of management and contract negotiation skills, high participation costs, high project values, project risks and demands on management time.

Closely related to research on risk allocation mechanisms is the consideration of accounting treatments of PPPs (e.g. Broadbent & Laughlin, 2003). Some commentators are concerned that accounting treatments may turn out to be the leading motive behind PPPs, so that “governments may not take the care to properly design contracts to ensure that appropriate incentives are in place” (Mintz & Smart, 2006: 21). The value for money assessment involves a so-called public sector comparator (PSC), a process that has been described as ‘surreal’ and can lead to sub-optimal decision making (Heald, 2003). Shaoul (2005) suggests that limited reliable evidence for PPPs is available due to the inappropriate methods used for quantifying cost savings and accessing financial risks *ex ante* and *ex post*. A study by Engel et al. (2013) argues that the allocation of risk under the optimal contracting arrangement suggests that PPPs are closer to public provision than to privatization.

The Practice of PPPs

The practice theme focusing on the micro and meso levels of PPPs such as issues and concerns around inter-personal and inter-organizational levels of analysis. The Practice theme includes sub-themes such as transferring lessons learnt from one PPP project to subsequent projects, incentives and contract issues across inter-organizational relationships and the management of stakeholders in these complex PPPs. The subset of the literature that explores PPP practice highlights a number of specific ‘viability criteria’ (e.g. Walder & Amenta, 2004). First, the intrinsic complexity of PPP arrangements results in the need for robust and appropriate performance regimes. Surprisingly, our analysis reveals there is limited understanding of the interplay between performance-based contracts, incentive mechanisms and subsequent service performance; with much of the specific research on incentives being conceptual (e.g. Hart, 2003; Benette & Iossa, 2006). Exceptions, such as the study by Ng and Wong (2007) on performance-based payment in maintenance services, have emphasized the potential for performance management systems to undermine PPP arrangements.

Grout (1997) notes that when private companies are only remunerated for successful delivery of services, their implicit incentives focus on cost minimizing rather than service enhancing activities. Similarly, studies that draw attention to the lack of innovation realized by PPPs (e.g. Barlow & Köberle-Gaiser, 2008) attribute this, at least in part, to inappropriate or missing performance incentives. When the UK’s PFI program was initiated for example, there was a clear recognition that life-cycle costing systems were necessary to realize innovative approaches to the delivery of higher quality buildings. More than two decades later, research highlights that this approach, and by corollary, these benefits have not been achieved (Barlow & Köberle-Gaiser, 2009). Similar criticism emerged from reviewed PPP projects in Europe, North-America and Australia (e.g. Hodge & Greve, 2007; Pollock et al., 2011). Considering incentives across the supply network, there is significant scope for further research to

investigate how performance management regimes and specific incentives are passed on from the primary public-private relationship to the subsequent tiers of sub-contractors. Similar research highlights the barriers for integrating SMEs in supply chains related to payment issues, missing early supplier involvement and a misalignment of inter-organizational systems (Dainty et al., 2001).

Second, in examining current practices of knowledge management and learning in and across PPP projects, research points to a lack of knowledge and information retention. For example, Akintoye et al. (2003) argue that the availability of appropriate information management systems is particularly important in these long-term relationships as they are characterized by high staff turnover. Learning has been acknowledged as a vital component for achieving successful project outcomes (Schofield, 2004). Extant literature also suggests that PPPs provide greater learning opportunities through learning cycles between different, but interdependent, project stages (Brady et al., 2005). Barriers to learning for public actors include the limited repeatability of PPP projects (Erridge & Greer, 2002) and a lack of reliable and consistent data which has also been identified as a main barrier to the successful implementation of whole lifecycle costing approaches (El-Haram et al., 2002). To overcome these barriers it may be vital to establish close cooperation to enable inter-organizational learning and knowledge transfer (Kivleniece & Quelin, 2012).

Third, several operational issues emerge from the nature of the interface between private and public organizations. The network of relationships in a 'typical' PPP includes technical and financial advisers, funders and investors, government departments and users of public assets and services (Ramiah & Reich, 2006) and it is widely asserted in the literature that these PPP networks differ from other inter-organizational relationships and hence a different skillset is needed for managing them (Nobel & Jones, 2006). Somewhat ironically, given that their avowed purpose is to access the additional capabilities of the private partners, several

research studies note the problematic impact of asymmetric skills between public and private actors (Dixon et al., 2005; Akintoye et al., 2003). While public actors were found to have limited abilities to engage in strategic planning with private actors, private actors have been criticized for their purely commercially driven outlook of public-private partnerships.

This research stream highlights the lack of internal and external stakeholder involvement and alignment as a main cause for problems across PPPs. For instance, seeking input from clinicians in the design and procurement stage of healthcare PPPs may lead to more innovative project outcomes (Barlow & Köberle-Gaiser, 2008). Further PPP research should investigate the optimal balance of skills and capabilities between public and private partners. Those investigations directly question, for instance, the extent to which public sector services such as medical services should be provided by public or private partners. With regard to external stakeholder alignment, extant literature illustrates the importance of establishing and maintaining inter-organizational trust. Similarly, Koppenjan (2005) draws attention to the importance of early interactions between public and private actors. Frequent early interactions help to facilitate information sharing during the contract negotiation phase (Zheng et al., 2008). Similarly, the importance of developing inter-organizational trust is seen to be a crucial factor for private actor's bidding decisions. Zitron's (2006) research study, for example, concludes that bidding decisions are based on comprehensive risk assessments and the perception of commitment trust as a crucial factor influencing private actors' perception of risks during the bidding phase. Further research should investigate how information and power asymmetry might impact on stakeholder alignment in PPP arrangements.

Fourth, concerns exist on the implementation of governance mechanisms (Ball et al., 2003; Lonsdale, 2005b) that together coordinate actors, resources and activities over an extended period of time (Zheng et al., 2008). With respect to the use of formal contracts, in addition to offering legal enforceability by acting as safeguards against future contingencies

and providing guidance for conflict resolutions (Deakin et al., 1997), the literature suggests that contracts can play a vital role in managing long-term PPP relationships. Contracts can clarify partnering parties' responsibilities and provide an effective risk allocation mechanism (Luo, 2002). However, the effectiveness of PPP contracts is mitigated by problems of incompleteness as partnering organizations cannot foresee every single future contingency (Froud, 2003; Rufin & Rivera-Santos, 2010). Similarly, with an increased number of parties involved, governance costs can be expected to rise as well (Rangan et al., 2006). Extant literature draws attention to contracting problems associated with bundling the design, build, finance and operation phases of these long-term projects within a single contract. Martimort and Pouyet (2008) for example, argue that when performance contracts can be written, tasks should be performed together by the same firm if a better design of the infrastructure also helps to save operating costs. While long-term contracts may encourage commitment and stability in PPPs, they can also face problems with over-dependency and complacency. For instance, Dixon et al. (2005) found that a lack of flexibility in these contracts has been a major concern in projects across various sectors.

A private partner's commitment to innovation may be constrained by such complex contracts with rigid specifications. In addition, research shows that contracting parties need to be able to specify service quality *ex ante*, or to ensure the availability of appropriate and measurable performance indicators that reward or penalize service providers on an on-going basis (Hart, 2003). While prior literature argues for collaborative relationships as coordinating mechanisms for inter-organizational networks (Koppenjan, 2005), empirical studies have revealed that many PPP projects are characterized by non-collaborative relationships (Klijn & Teisman, 2003). Collaborative partnerships in health PPPs are difficult to establish and maintain because of barriers such as an imbalance of power, value and partnership goals between public and private partners (Ramiah & Reich, 2006). The extent to which contractual

and relational governance mechanisms are deployed in public-private partnerships may also be influenced by various political, social, ideological and legal factors (Essig & Batran, 2006).

Essig and Batran (2006) illustrate that the particular choice of contracts is highly influenced by the strategic importance and specificity of individual goods and services. Limited research has explored the dynamic relationship of governance mechanisms over a long-term PPP lifecycle. A notable exception is Grubnic and Hodge's (2003) study showing that in the absence of trust during early relationship stages, a far more extensive set of contractual clauses is likely to be negotiated and applied during the course of the relationship.

Synthesis and Implications

Bringing together the three key themes - PPP outcomes, the policy of PPPs, the practice of PPPs – and their corresponding sub-themes across different levels of analysis – macro, meso and micro - we propose a multi-dimensional framework (Figure 5). Such a literature map, integrating the manifold research streams, should provide the basis for advancing both research and practice. The systematic literature review emphasizes a distinct divide across the three 'building blocks' - the policy of PPPs, the practice of PPPs and PPP outcomes – with very limited research spanning across the three distinct, yet inter-related, themes. For instance, while the policy of PPPs theme mainly draws out the benefits of deploying PPPs to justify the use of these partnerships for public sector infrastructure and service delivery, prior literature concerned with the practice of PPPs draws on the disadvantages of these partnerships.

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Limitations and further research

This study has its limitations, some of which can stimulate future research. First, the goal was analyze and synthesize prior research, not generate detailed hypotheses. Second, this review deployed the ISI Web of Knowledge database. While aiming for a comprehensive coverage by

following rigorous, systematic review and synthesis procedures, the database selection and filtering processes may have omitted relevant research. Third, deploying an analytical framework for such a multi-dimensional concept of public-private partnership highlights some previously under-researched linkages while failing to capture others. With further operationalization, it could form the basis for empirically testing PPPs across different countries and sectors by encapsulating the three distinct, yet inter-related, themes. Additionally, further research could examine the performance of health PPP by comparative analysis using matched pairs of public and PPP hospitals of similar vintage, size and catchment population, to examine whether a public solution is better than a PPP arrangement. This future research avenue would offer well-grounded empirical evidence on whether and how PPP arrangements may succeed in achieving some of the benefits ascribed to them.

Managerial and policy implications

Our research has managerial and policy implications; we highlight two pragmatic themes that will help maximize the realized benefits from the public-private nexus. First, although accessing strategic private sector resources and realizing apparent cost savings (depending on the accounting treatment) are vital considerations for managers and policy makers engaging with health public-private partnerships, these public actors also need to actively consider how the capabilities associated with more operational processes (e.g. negotiating, specifying and monitoring services) can have significant, positive and negative, impact on macro policy objectives. Second, managers and policy makers need to reflect more fully on their use of incentive mechanisms. In addition to targeting the focal public-private dyad, what behaviors/performance are being encouraged in the ‘total’ PPP network? Moreover, given the performance impact of a sustained emphasis on inter-organizational learning across the total

life cycle of the PPP, incentives should be carefully designed to drive both short and long-term innovations.

Conclusions

We began this article with the observation that in spite of the scale and scope of PPPs, there remain important gaps in scholarly and practitioner understanding of how the concept has been applied. We set out to examine the foundations of the PPP literature, firstly exploring the patterns of publications and then parsing the research into policy and practice meta-themes. From this systematic analysis and synthesis of PPP research, conclusions can be derived for public and private healthcare actors in particular and for the management field in general.

Public-private partnerships can combine the strengths of private actors, such as innovation, technical knowledge and skills, managerial efficiency and entrepreneurial spirit, and the role of public actors, including social responsibility, social justice, public accountability and local knowledge, to create an enabling environment for delivering high quality health infrastructure and services. Through these partnerships, public and private actors may realize benefits such as the creation of jobs, educational development, incentives for innovation and competition and health infrastructure development. However, the study illustrates that while the popularity of deploying PPPs is steadily rising; further empirical research needs to explore evidence gaps. For instance, future research should develop a richer understanding of the circumstances for creating alliances between private and public actors from a strategy perspective, explore the impact of incentive mechanisms and risk management procedures on health service performance throughout the extended project life-cycle, and to create conducive environments to foster inter-project learning. Future work can investigate the causes behind PPP failures across different sectors and countries to draw out guidance on when (in terms of sector and service delivery specifics) and to what extent (in terms of whether to include

sensitive service delivery such as medical services) PPP arrangements should be favored. Thus, research can investigate the limitations of PPP arrangements in delivering public sector infrastructure and services. These proposed research avenues will help integrate the private, political and social perspectives at the public-private nexus in health public-private partnerships.

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Tables

Definition	Dimensions
An arrangement between two or more entities that enables them to work cooperatively towards shared or compatible objectives and in which there is some degree of shared authority and responsibility, joint investment of resources, shared risk taking, and mutual benefit (HM Treasury, 1998)	<ul style="list-style-type: none"> • Inter-organizational relationship; • Cooperation; • Shared objectives; • Joint investments; • Risk sharing
Public-private partnerships are on-going agreements between government and private sector organizations in which the private organization participates in the decision-making and production of a public good or service that has traditionally been provided by the public sector and in which the private sector shares the risk of that production (Forrer et al., 2010).	<ul style="list-style-type: none"> • Risk sharing • Inter-organizational relationship
A legally-binding contract between government and business for the provision of assets and the delivery of services that allocates responsibilities and business risks among the various partners (Partnerships British Columbia, 2003)	<ul style="list-style-type: none"> • Contractual governance; • Risk allocation
The main characteristic of a PPP, compared with the traditional approach to the provision of infrastructure, is that it bundles investment and service provision in a single long term contract. For the duration of the contract, which can be as long as twenty or thirty years, the concessionaire will manage and control the assets, usually in exchange for user fees, which are its compensation for the investment and other costs. (Engel et al., 2011).	<ul style="list-style-type: none"> • Bundling • Service provision • Long-term contract
Partnerships which includes contractual arrangements, alliances, cooperative agreements, and collaborative activities used for policy development, program support and delivery of government programs and services (Osborne, 2000)	<ul style="list-style-type: none"> • Contractual governance; • Inter-organizational relationship
A relationship that consists of shared and/or compatible objectives and an acknowledged distribution of specific roles and responsibilities among the participants which can be formal or informal, contractual or voluntary, between two or more parties. The implication is that there is a cooperative investment of resources and therefore joint risk-taking, sharing of authority, and benefits for all partners (Lewis, 2002)	<ul style="list-style-type: none"> • Inter-organizational relationship; • Shared objectives; • Mutual investments • Risk sharing • Benefit sharing
A relationship involving the sharing of power, work, support and/or information with others for the achievements of joint goals and/or mutual benefits (Kernaghan, 1993)	<ul style="list-style-type: none"> • Inter-organizational relationship; • Cooperation; • Power and information sharing • Shared objectives

Table 1 Differing conceptualizations of public-private partnerships

Unit of Analysis	Study	Method / Data	Study Focus	Key Dimensions	Outcomes / Conclusions
Country	Broadbent and Laughlin (2003)	Conceptual	New Public Management/ Modernization	Financial management and accounting	Modernization of the UK state to justify PFI projects
	Deakin (2002)	Conceptual	Policy; partnership; social exclusion	Accountability; power	Problems of accountability; top-down partnership; power asymmetries
	Grout (2003)	Report analysis	Accounting treatments	Accounting for PFI projects	Roles of Treasury, NAO; fragmented views and interests on accounting treatments
	Hodge (2004)	Conceptual	Incentives/risks; procurement processes	Ownership; risk transfer; incentives	Ex ante competition; accessing rare skills; better risk management; economies of scale
Project / Wider Network	Barlow and Köberle-Gaiser (2008)	Case studies (6)	Public procurement policy	Innovation; project delivery; relationship management; adaptability	PFI has increased the complexity at the inter-face between project delivery and hospital operational functions, resulting in a project delivery model which yields less innovative outcomes.
	Bing et al. (2005)	Survey (53 respondents)	Procurement processes/risk allocation	Risk allocation/risk identification	Some risks should be shared while others are better managed by individual partners
	de Bettignies and Ross (2004)	Conceptual	Incentives/risks; procurement processes	Ownership; risk transfer; incentives	Ex ante competition; accessing rare skills; better risk management; economies of scale
	Dixon et al. (2005)	Case studies (11 interviews)	PFI process and development	PFI success factors and benefits	Improvements in Value for money (VfM) assessment, end-user needs, developing competitive markets; skills in public sector
Inter-organization	Essig and Batran (2006)	Case study (1)	Relationship management; TCE; contracting	Contracts; decision making	The decision on public-private cooperation is not driven only by economic principles.
	Lonsdale (2005b)	Case studies (2)	TCE; relationship management; contracting	Risk transfer; accounting treatments; opportunism; VfM outcomes; contracting	Importance of when and not whether risks are transferred in PPP projects.
	Zheng et al. (2008)	Case studies (2)	Relationship management; TCE; contracting theory	Contracts; trust; governance interplay	Relational and contractual governance mechanisms are complementary forms of exchange governance.

Table 2 Public-private partnerships: conceptualization and operationalization issues *(The studies listed are representative rather than exhaustive).*

Figures

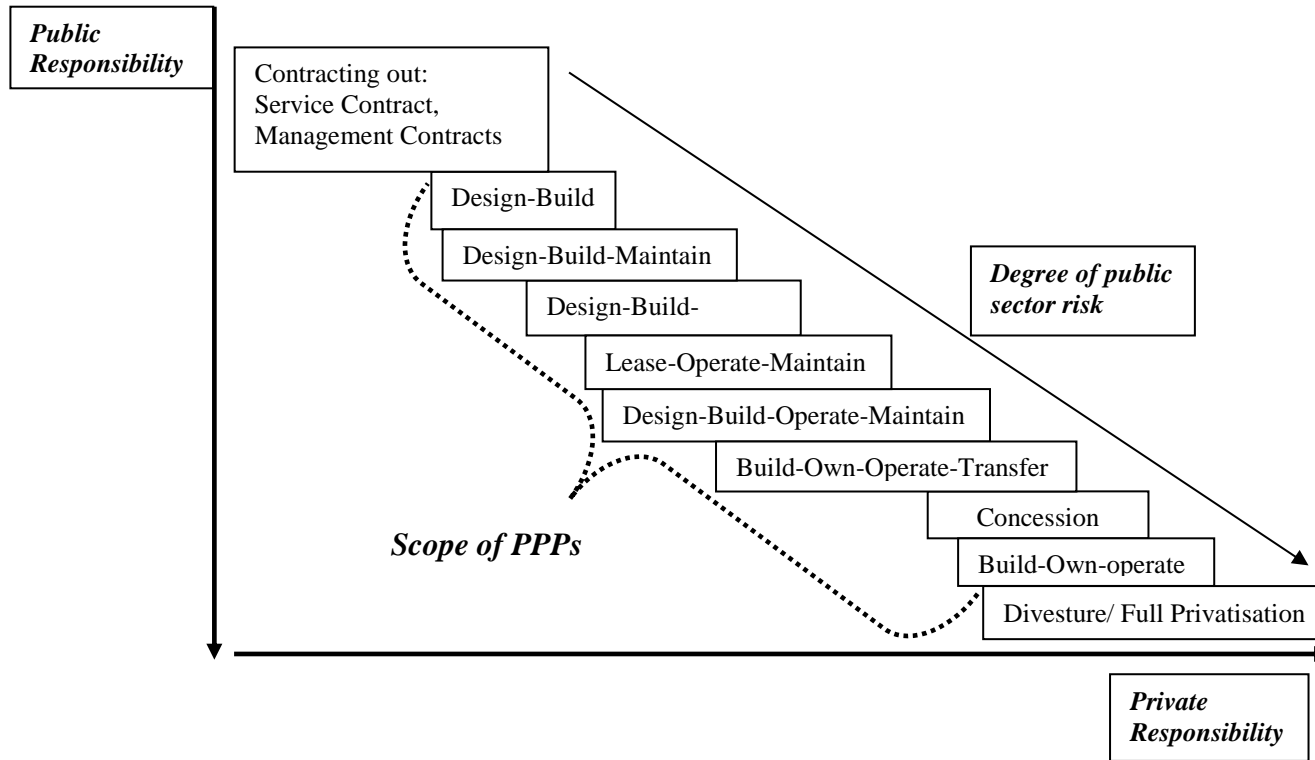


Figure 1 Scale and scope of private and public responsibility
 (Adopted from: Canadian Council for Public-Private Partnerships, 2011; Deloitte, 2006)

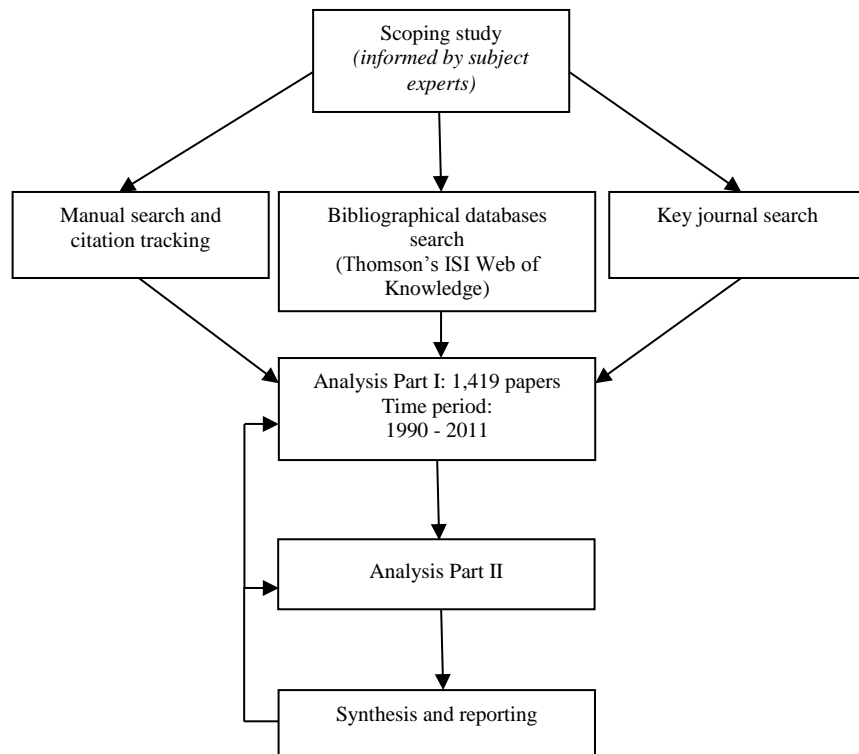


Figure 2 Summary of systematic review process

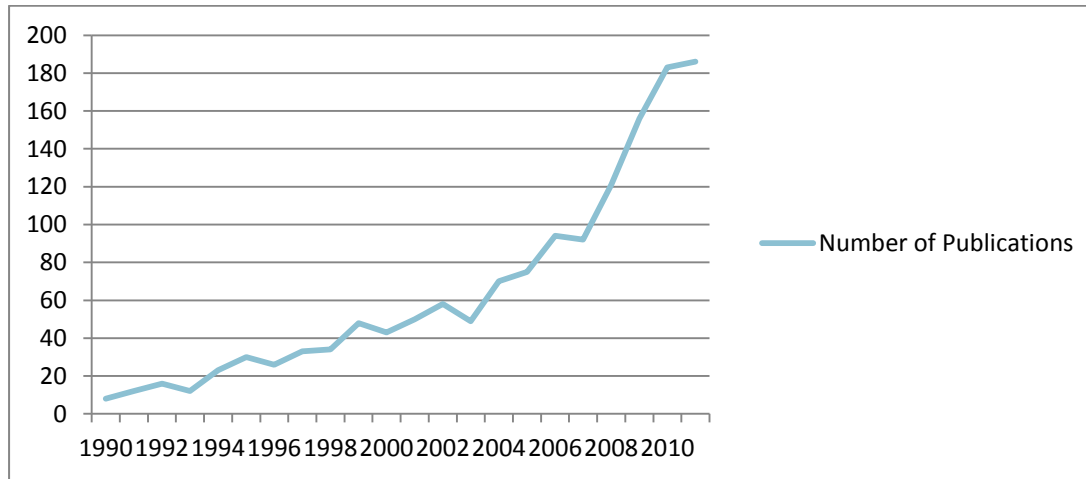


Figure 3 Number of papers published on PPP over time (from 1990-2011)

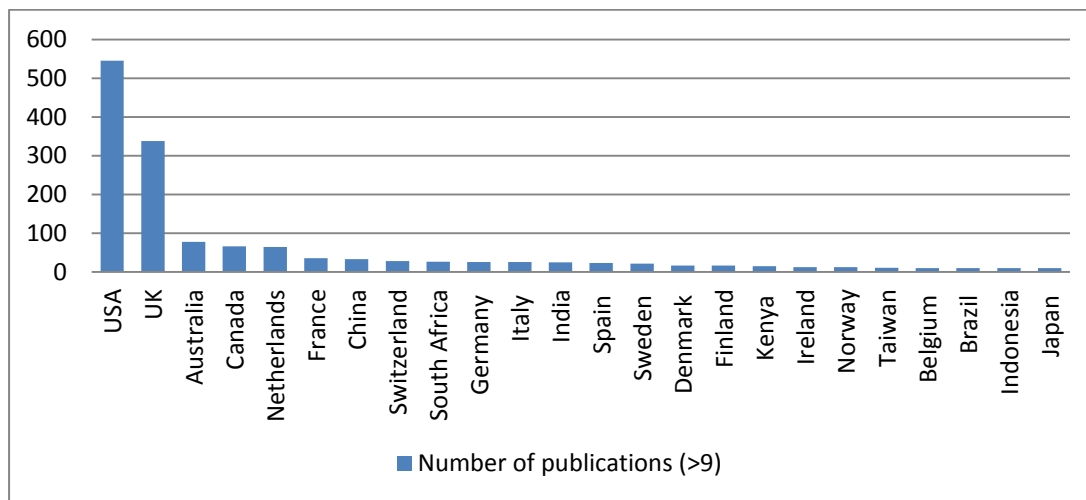


Figure 4 Country focus of PPP publications

The Policy of PPPs

Increased efficiency through bundling

(Engel et al., 2011; Roehrich et al., 2013)

Access to idiosyncratic resources

(Kivleniece & Quelin, 2012)

Risk management and financial evaluation

Accounting treatment (Broadbent & Laughlin, 2003)
 Risk transfer (Froud, 2003; Hodge, 2004)
 Risk allocation/sharing (Ball et al., 2003; Bing et al., 2005)
 Risk identification across relationship phases (Iossa & Martimort, 2012)
 VfM assessment (Heald, 2003)

Appropriateness and fit of PPPs

Information and power asymmetry (Lonsdale, 2005a)
 Delivery of public (sensitive) services (Brinkerhoff & Brinkerhoff, 2011)
 Political symbols, political choice and 'PPP or nothing' (Lonsdale, 2005a)

PPP Outcomes

Benefits

Solution for public-sector capital shortage (Fitzgerald, 2004)
 VfM considerations (Pollit, 2005)
 Healthcare provider can focus on medical service delivery (Barlow et al., 2013)
 Introduction of private sector efficiency (Fitzgerald, 2004)
 Risk transfer (Pollit, 2005)

Disadvantages

Higher capital costs (Froud & Shaoul, 2001; Liebe & Pollock, 2009)
 Stifle innovation (Barlow & Köberle-Gaiser, 2008)
 Limited competition due to low number of contractors (Hall, 1998; Roehrich & Caldwell, 2012)
 Misalignment of clinical and infrastructure models/design (Barlow & Koeberle-Gaiser, 2009)
 Relationship management problems (Akintoye et al., 2003; Zheng et al., 2008)
 Inappropriate risk allocation (Ball et al., 2003)
 Low VfM (Liebe & Pollock, 2009)
 High transaction, monitoring and set-up costs (Lonsdale, 2005b; Pollock et al., 2011)

The Practice of PPPs

Stakeholder alignment

Relationship management (Zheng et al., 2008)
 Suppliers, service providers, financial institutions and government (Ramiah & Reich, 2006)
 Incorporating clinician inputs (Barlow & Köberle-Gaiser, 2008)
 Collaboration, cooperation and early public/private partner interaction (Koppenjan,

Incentives and performance

Financial (Grout, 1997)
 Whole-life cycle (El-Haram et al., 2002)
 Performance-based payment mechanisms (Ng & Wong's (2007)
 To drive innovative practices and service quality (Barlow & Köberle-Gaiser, 2008)

Inter-organizational governance mechanisms

Contracts / contractual and negotiations (Lonsdale, 2005b; Dixon et al., 2005)
 Trust / relational (Zitron, 2006)
 Integration and dynamics (Zheng et al., 2008)

Inter-project learning and knowledge management

Information management systems (Akintoye et al., 2003)
 To achieve successful outcomes (Schofield, 2004)
 Barriers to learning (Erridge & Greer, 2002)