Putting the pieces together:

Combining contractual and relational governance for successful public-private partnerships

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Putting the Pieces Together: Combining Contractual and Relational Governance for Successful Public-Private Partnerships

De puzzel in elkaar zetten
het combineren van contractuele en relationele sturing voor succesvolle publiek-private samenwerkingen.

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The governance of public–private partnerships: contracts, good relationships and performance.

1.1. INTRODUCTION

In autumn 2016, construction works on the Princess Beatrix lock started. This monumental lock, dating back to 1938, is one of the largest inland navigation locks in the Netherlands. Situated on the Lek canal, this lock is part of the most important and only direct waterway connection between the ports of Rotterdam and Amsterdam. Because of the increasing number of large ships passing through this lock, it had to be expanded and renovated to prevent it from becoming a bottleneck for shipping traffic. Widening the Lek canal and adding a new and longer third chamber to the lock should future-proof the Princess Beatrix lock (Heijmans, 2019; Rijkswaterstaat, 2019). In order to realize these changes, the Dutch executive agency of the Ministry of Infrastructure and Water Management, Rijkswaterstaat, collaborated with private construction firms in a public–private partnership (PPP).

The Princess Beatrix lock project is a clear example of a PPP, but it is by no means the only one. Nowadays, PPPs are common practice for many public organizations. Governments and public organizations use this form of collaboration to realize public goods and services (see Klijn & Teisman, 2003; Hodge et al., 2010). The use of PPPs requires governments and public organizations to rethink their role in this respect. Rather than these entities being the sole deciding actor, the use of PPPs raises questions regarding their role in the governance of these partnerships. How can public organizations best collaborate with private partners in the realization of public services and goods? In an attempt to safeguard public interests and balance often competing values, public organizations need to think about how and which governance mechanisms to adopt (Koppenjan et al., 2008). What form of governance does justice to these partnerships? And how can partnerships be steered in such a way as to lead to successful performance? Many governments and public organizations struggle to find answers to these questions. They search for the right way to govern PPPs. For public organizations, interesting dilemmas are created between control and autonomy, between certainty and flexibility, and between risk and potential rewards. How much control should the public client exert and how much room should be given to the private contractor? How much flexibility should be built into the project to allow for new developments, innovations, and stakeholder input, without running the risk of losing sight of on-time and on-budget delivery? Perhaps the largest governance dilemma in this respect is that between control and collaboration.

The original idea of PPP is highly contractual. PPPs are often considered a form of contracting out, in which strict contract management is the dominant governance mechanism (see Savas, 2000). This also applies to most Dutch PPPs, including the Princess Beatrix lock project. Albeit that contracts are common practice in PPPs (see Hodge & Greve, 2009; Hodge et al., 2010), other ways of governing are not excluded (e.g. Ysa,

2007). In PPPs, relational governance mechanisms are also called upon. Rather than focusing on enforcement of the contract, project partners try to work together as equal partners, and the governance of the project takes place on the basis of open communication, sharing knowledge, and emphasizing the shared interests of both partners (Huxham & Vangen, 2005; Klijn et al., 2007; Smyth & Edkins, 2007; Velotti et al., 2012). In practice, this often results in hybrid forms of governance, in which elements from different models can be combined (Weihe, 2009; Koppenjan, 2012; Hansson, 2013). This is where the quest starts to find the right mix of governance instruments to direct and guide these partnerships. This is challenging, as insight is sparse about which governance mechanisms are actually preferred and how these combinations of mechanisms affect partnership performance. This puzzle is at the heart of the research presented in this dissertation. The central issue in this dissertation thus revolves around the governance of PPPs and the way in which these various governance mechanisms can be combined to realize successful PPPs. Although it is known that various mechanisms can be combined, it is not yet clear what specific combinations of governance mechanisms work in PPPs. Unravelling the specific combinations of various governance forms is one of the unique contributions that this dissertation aims to make to the PPP literature. In doing so, this dissertation also addresses the common assumption that good relationships between project partners matter in this respect. The quality of the relationship between project partners is said to impact the performance of the partnership, as good relationships improve collaboration and leave room for flexibility and joint problem solving (Arinõ et al., 2001, 2005; Van Slyke, 2009). However, empirical studies testing the role of relational quality in PPPs are limited. So, to study the effect of governance on PPP performance, the role of relational quality therein is be addressed in this dissertation.

The remainder of this introductory chapter first addresses the main theoretical concepts in this dissertation. The next four sections elaborate on, respectively, PPPs, their governance, their performance, and the relational quality concept. These sections show what knowledge scholars have already gleaned in previous academic studies in relation to these main concepts. When one considers previous contributions to the research on PPPs, the lacunas that still remain become evident. This chapter then turns to the focus of this dissertation, presenting the central research question, the design of this study, and the contribution that this dissertation aims to make to both academic research on PPPs and to society. It concludes with an outline of the rest of this dissertation.

1.2. THE ROLE OF PUBLIC–PRIVATE PARTNERSHIPS IN INFRASTRUCTURE GOVERNANCE

The development, realization, and maintenance of infrastructure facilities, like the Princess Beatrix lock, is an important government task. The generally accepted belief is that good public infrastructure enhances the accessibility of urban areas, promotes safety and mobility, and stimulates economic growth (Aschauer, 1990). With ever-increasing transport flows, far-reaching technological developments, and growing concerns about the ecological consequences of the world's increased mobility, the delivery of public infrastructure has become not only an important but also a complex government task. It is therefore not surprising that infrastructure is one of the policy fields in which a shift from government to governance is clearly visible. Governments and public agencies often collaborate with other actors to deliver high-quality roads, railways, and waterways (OECD, 2015; Christensen & Greve, 2018). The process surrounding the realization of public infrastructure is often referred to as infrastructure governance. The infrastructure governance concept can be explained as *"the processes, tools, and norms of interaction, decision-making, and monitoring used by governmental organizations and their counterparts with respect to making infrastructure services available to the public and the public sector"* (OECD, 2015: 2). Governments interact in various ways with other stakeholders to realize the delivery of public infrastructure (e.g. Christensen & Greve, 2018).

1.2.1. Defining public–private partnerships

One of these ways in which governments interact with other stakeholders is by engaging in PPPs. The academic debate on infrastructure governance has been dominated by the idea of PPPs for several decades (Hodge et al., 2010; Christensen & Greve, 2018). PPP is a broad term and much has already been said about its meaning and use (see for example Linder, 1999; Hodge & Greve, 2007, 2013). Whereas some scholars define a PPP as *"a long-term contractual arrangement […]"* (see Garvin & Bosso, 2008: 163), others opt for a broader definition. Klijn and Teisman (2003: 137), for example, define a PPP as a *"cooperation between public and private actors with a durable character in which actors develop mutual products and/or services and in which risks, costs and profits are shared."* This definition refers to a variety of forms of partnership between public and private actors, ranging from loosely shaped alliances to strict contract-based agreements. Hodge and Greve (2013) suggest that the debate on PPPs covers essentially five different meanings. In its narrowest sense, a PPP is a single project, used for example to build a road. In a slightly broader sense, PPP is an organizational form or a mechanism with a specific institutional and financial architecture designed for public service delivery. If its meaning is broadened even further, it can be considered a policy preference, i.e.

the preferred way of working in a policy domain. Taking the notion of PPP one step further, Hodge and Greve describe PPP as a governance tool in the toolbox of modern governments. The use of contracts, for example, is a governance tool. Finally, PPP can be considered a phenomenon within the context of a broader national history and set of cultural assumptions (Hodge & Greve, 2013: 4-5). Hodge and Greve (2017[a]) explain how the use of PPP is embedded in a country's historical tradition and can be used in a symbolic way to express change. In this dissertation, we focus predominantly on PPPs as individual projects. These PPPs are often designed to realize transport infrastructure, but they can also be employed to realize social infrastructure (such as housing, schools, hospitals, or prisons), urban renewal, or other public products or services (e.g. Koppenjan, 2005; Reeves, 2008; Abdul-Aziz & Kassim, 2011; Whiteside, 2011; Roumboutsos, 2015).

Although public–private collaboration has been around in one form or another for centuries, PPPs as they are currently used date back to the early 1990s. Most PPPs nowadays are inspired by the Private Finance Initiative (PFI) originating in the United Kingdom (Wettenhal, 2008). A PFI is a form of private involvement in public service delivery and infrastructure projects in which private firms are contracted to realize and manage public projects. Private investments are used to deliver public sector infrastructure according to output specifications defined by the public actor (Ball et al., 2000; Broadbent et al., 2003). Many countries have adopted these ideas, resulting in a variety of PPPs grouped under the term, long-term infrastructure contracts (LTICS) (Hodge & Greve, 2013). These partnerships share a number of key characteristics:

1. First and foremost, LTICs are, as the name suggests, long-term projects. This is a key aspect of PPPs. Because of the partnership's long duration, the focus lies on the entire lifecycle of public infrastructure, meaning that, usually, the partnership not only covers the design and construction of infrastructures, but also extends well into the maintenance and operation phase of the project. Thus, partnerships can easily last for 30 years. The integration of the various aspects of the process is an attempt to minimize lifecycle costs (Savas, 2000; Hodge & Greve, 2013).
2. To structure the involvement of private partners, PPPs – and in particular LTICs – are usually guided by elaborate contracts. These contracts can be used to align the interests of the private contractor with those of the public client (Hodge & Greve, 2013; Van Ham & Koppenjan, 2002). Moreover, they are designed to provide clarity regarding each actor's roles, risks, and responsibilities. Often, the contracts also include output specifications designed by the public partner as well as agreements on monitoring and sanctions (Lam & Javed, 2015).
3. A third important characteristic is the allocation of risks. This is often explicitly mentioned as one of the key aspects of PPPs. The underlying principle is that risks are allocated to the partner who is best able to mitigate these risks and carry the

potential consequences. Risks can be shared between public and private actors or are transferred from the public partner to the private partner. Private partners, for example, carry risks in the design, the realization, and the operational phase of the project to ensure their commitment throughout the project. The relevance of this topic is reflected in the vast amount of research on the allocation and management of risk (see amongst others Ke et al., 2009; Bing et al., 2005[a]; Ng & Loosemore, 2007).

The integration of different phases of the process and the sharing of risks entail a significant involvement of private partners in PPPs. These private partners can become involved in the design, construction, and maintenance of the project. In some cases, they even become responsible for the finance and the operation phase of an asset. Management and payment to the private contractor are based on the provision of previously agreed upon services rather than on product delivery, meaning that private contractors earn their investment back over the years. When the private partner's involvement includes the operation of a road, the private partner can earn back its investments by charging user fees, like the toll on toll roads. In some countries, such as the Netherlands, availability payments are used. In the provision of a new road, private contractors are involved in the maintenance of the road after its construction, but not necessarily in its operation. They earn back their invested money via availability payments, paid by the public client for the accessibility of the road. If the road is closed for maintenance, payments are lower, providing an incentive for the private partner to have taken the maintenance into account during the construction of the road (Lenferink et al., 2013).

As a commonly used form of PPP, LTICs can come in all shapes and sizes. The different forms are often based on the degree of involvement and responsibilities of the private partners. Several forms of PPP refer in their name to the stages of the project carried out by the private partner. Compare, for example, a design-build (DB) type of PPP, in which a private constructor is responsible for both the design and the realization of the infrastructure, with a design-build-finance-maintain-operate (DBFMO) type of PPP. In the latter, the private partner is responsible not only for the design and construction of the infrastructure, but also for the finance, maintenance, and operation for a long period of time after the building of the infrastructure (Hodge et al., 2010).

Alliances are a somewhat different form of PPP. To differentiate them from contractual PPPs like LTICs, the Commission of the European Communities refers to them

as institutional PPPs[1] (CEC, 2004). In contrast to contractual PPPs, these institutional PPPs have a different organizational structure. Rather than a detailed contract being the only interface between public and private organizations, a new organization is established by the joint efforts of all parties in the alliance, in which they share authority and collaborate towards the realization of a specific public good or service (Andrews et al., 2015). Therefore, institutional PPPs have a different risk allocation in which risks are shared rather than transferred between project partners. Moreover, partners operate in a horizontal relationship and consider performance obligations to be collective (Clifton & Duffield, 2006).

Central in this dissertation, however, are not institutional PPPs, but DBFM(O) projects. This type of PPP is an LTIC integrating the design, build, finance, maintain, and – occasionally – operate phases of the project (see also Van Ham & Koppenjan, 2002). DBFM(O) is a frequently used form of PPP and is used by many governments to realize public service delivery. The presence of this type of PPP in several countries is one of the main reasons for selecting this form as the main type of PPP in this dissertation.

1.2.2. Public–private partnerships: A global phenomenon with national differences

Nowadays, PPPs are very much an international phenomenon. Besides well-known early adopters like the UK and Australia, PPPs are used worldwide, both in Western European countries (e.g. Ireland, the Netherlands, Belgium, and Spain) and in Asia (e.g. China, Vietnam), America (Canada), Africa (Ghana), and the Middle East (Jordan) (see amongst others the work of Adams et al., 2006; Hammerschmid & Ysa, 2010; Mistarihi et al., 2013; Mota & Moreira, 2015; Biygautane et al., 2016; Arezki & Belhaj, 2019). Despite PPPs being an international phenomenon, international comparative research into PPPs has been scarce (for some exceptions see Greve & Hodge, 2007; Petersen, 2011; Verhoest et al., 2015). The few studies that do exist show that the development of PPPs varies significantly across countries (e.g. Petersen, 2011; Verhoest et al., 2015). National governments respond differently to PPPs, and macro-institutional factors, such as a country's culture, its economic situation, and its administrative history, affect whether and how PPPs are employed (Verhoest et al., 2015). In a study comparing 20 countries, Verhoest et al. (2015) show that governmental support for PPPs differs per country.

In the Netherlands, there is strong governmental support for the use of PPPs. Particularly at state level, decisions on the construction of public infrastructure have

1 The terminology regarding this topic is not consistent. Various terms are used, like alliance, institutional PPP, or public–private joint venture. The terminology also differs among countries (Andrews et al., 2015).

favoured the use of PPPs. In 1998, the Dutch cabinet rehabilitated PPPs after an initial first wave of PPPs stopped consequent to the high cost of these projects. A knowledge centre was set up to gather knowledge and expertise on the topic. The use of PPP really accelerated in the mid-2000s. A standardized contract was developed, and PPP became the standard way of contracting out for Rijkswaterstaat, the executive agency of the Ministry of Infrastructure and Water Management. Rijkswaterstaat has now put over 20 highways and locks out to tender in the form of a PPP. From 2004 onwards, the central government real estate agency, nowadays called the Rijksvastgoedbedrijf, started putting offices, courthouses, and prisons out to tender using PPPs (Rijksoverheid.nl, n.d.). Political support for the use of PPP boosted their developments in the Netherlands on the national level, and local governments were encouraged to use them too. As a consequence of the strong governmental support for PPPs in the past two decades, more than 30 public infrastructure projects have been realized using PPP, the majority of them since 2008. DBFM and DBFMO are the dominant forms of PPPs used by the Dutch national government (Koppenjan & de Jong, 2018).

The research in this dissertation is focused predominantly on PPPs in the Netherlands, because of recent developments regarding the governance of PPPs in the country. Contractual governance used to be the dominant mode of governance. The standardized contract that is still often used is exemplary of this tradition. However, Dutch ministries and their agencies have lately displayed a rising interest in relational governance and the importance of high-quality relationships in PPPs. This rising interest might be explained by a few PPP projects characterized by serious conflicts and poor performance (Koppenjan & de Jong, 2018). Recent debates on infrastructure governance in the Netherlands have focused on the potential advantages of relational governance in addition to the traditional contract-based governance tools. Similar trends can be seen elsewhere, including the United Kingdom (HMTreasury, 2012). Illustrative of this trend in the Netherlands is the development of the *Marktvisie* (market vision). This document is designed to outline the way in which public and private partners in the Netherlands tend to collaborate in the development, realization, and maintenance of public infrastructure. The Marktvisie was developed jointly by Rijkswaterstaat, other public agencies, and their private contractors. Together, public clients and private contractors address the importance of good relationships when working together on the realization of public infrastructure. The Marktvisie presents an increased focus on horizontal relationships, characterized by openness, respect, and empathy for each other, and suggests the use of relational governance mechanisms that might stimulate the building of such relationships (Rijkswaterstaat, 2016; marktvisie.nu, n.d.). The Marktvisie and its emphasis on relational governance to enhance the quality of relationships between project partners and their performance has not been developed to replace the use of contracts. In fact, most PPPs in

the Netherlands still rely heavily on contracts, taking the form of DBFM(O) projects. Rijkswaterstaat works with standardized, elaborate contracts that consist of a variety of contractual governance tools. Nevertheless, the slowly shifting focus from one governance mechanism to another makes it the ideal setting to study the main topic of this dissertation: the governance of PPPs and the way in which various governance mechanisms can be combined to realize successful PPPs.

1.3. THE GOVERNANCE OF CONTRACTUAL PUBLIC–PRIVATE PARTNERSHIPS

Regarding the governance of public–private encounters, the public administration discipline provides various theoretical viewpoints on this topic. These viewpoints are often clustered into paradigms that are generally accepted and often adopted by public administration scholars: traditional public administration, new public management (NPM), new public governance (NPG), and most recently self-organization. Although this is not a definitive clustering or a complete overview of all ideas regarding governance, these paradigms can be used as a starting point for any study on the governance of public–private encounters, including PPPs. In relation to PPPs, NPM and NPG are particularly useful, as PPPs display elements of both paradigms. This section first addresses the core features of both paradigms and demonstrates how the idea of PPP fits within both the NPM and the NPG paradigm. Then, it turns to the consequences of adopting these different paradigms for the governance of PPPs, presenting a continuum ranging from contractual governance on one end to relational governance on the other.

1.3.1. Public–private partnerships: A New Public Management example?

NPM has led to many reforms in the public sector, on the basis that modern business practices should be implemented in the public sector (Dunleavy et al., 2006). The introduction of competition to allocate resources, privatization, and contracting out to reduce the size of public administration, and the focus on performance rather than process, indicate the introduction of a new set of values. Values like economy, efficiency, and effectiveness become paramount in this paradigm. The intend of NPM-based reforms often was to improve the productivity and performance of the public sector (see Hood, 1991; Pollitt & Bouckaert, 2017). Hence, NPM has a strong focus on performance. Important in NPM is also the separation between the design and the implementation of policies. Policies are made by governments, but rather than doing everything themselves, governments and public agencies outsource tasks related to the implementation of the policy to private organizations (Hood, 1991). ‘Steering, not

rowing' is an illustrative quote in this respect (see Osborne & Geabler, 1992). PPPs fit very well in this context, as they are a clear example of contracting out and transferring tasks from the government to private organizations. In PPPs, the public actor defines goals, but the task to realize these goals is given to the private contractor. The latter carries both risk and responsibility (Savas, 2000). This relationship can be explained by the principal–agent theory (see Jensen & Meckling, 1976) in which the relationship between the public client and the private contractor is strictly governed to prevent the agent acting in its own best interests rather than in the best interests of the principal. In PPPs, steering by the government takes the form of output and performance indicators incorporated in elaborate contracts (Lawther & Martin, 2014). Clearly, PPPs are an epitome of the core idea in NPM, which suggests that governments should steer but not execute all tasks themselves. In PPPs, the private partner is selected through a tendering procedure based on competition, a core NPM characteristic. The tendering procedures is designed to stimulate competition among potential providers in order to realize the best value for money (Colman, 2000; Grimsey & Lewis, 2004[a]; Hueskes, 2019). Finally, PPPs and the NPM paradigm share a strong focus on performance. In PPPs, public partners determine performance criteria for their private counterpart. Both the monitoring system and payments are based on these performance criteria.

All in all, PPPs fits very well with NPM, as it explicitly includes several key features of this paradigm, such as contracting out, competition, and the use of incentives to ensure performance. It is therefore not surprising that studies on PPP are often inspired by NPM or closely related theories such as transaction cost theory and principal–agent theory (Wang et al., 2018).

1.3.2. Public–private partnerships: following the New Public Governance trend?

More recently, New Public Governance (NPG) has received plenty of attention in public administration. Just like NPM, NPG emphasizes that governments and public organizations need other actors to contribute in order to realize public services and goods. However, in contrast to NPM, this paradigm puts particular emphasis on the role of interdependencies between actors (see Osborne, 2010). Given that governments and public organizations are not capable of resolving complex policy issues on their own, collaboration in networks of various public and private actors becomes crucial to realize the delivery of public services and goods (see the literature on collaborative governance: e.g. Ansell & Gash, 2008; Emerson et al., 2012, and the literature on network governance: e.g. Provan & Kenis, 2008; Klijn & Koppenjan, 2016). So, NPG postulates the idea of a plural state, in which multiple actors contribute to the delivery of public services. The interdependencies between these actors implicate that the public actor needs to take into account the goals and interests of its partners. As no single actor is

able to make all decisions, actors need to collaborate. In theory, the relationship then transforms from a principal–agent relationship into a more horizontal relationship in which both partners realize that they need each other for the successful realization of the project (Dickinson, 2016).

The interdependencies between actors in the realization of public infrastructure can lead to the use of both contractual and institutional PPPs. Although contractual PPPs hardly seem to fit the ideas behind NPG, a closer look shows how several elements of the design of PPP pair nicely with this governance paradigm. First, the relationship between public and private actors in PPPs offers interdependent actors the opportunity to avail each other's resources. Second, PPPs adhere to the ideas on collaboration and networks that signify NPG. PPPs can be considered a network of public and private actors with a *joint* focus on realizing public infrastructure. In this case, PPPs are a form of enduring inter-organizational relationships, characterized by network-like interactions and a shared goal. Thus, PPPs may fit in the NPG paradigm. Reaching the goals set in a PPP requires a type of governance that does justice to the more horizontal and interdependent relationships between actors (Weihe, 2009). Hence, NPG lays emphasis on relational governance mechanisms such as relational contracting (Bovaird, 2006; Teicher et al., 2006; Osborne, 2010). Consequently, scholars increasingly espouse the NPG paradigm and closely related perspectives such as the network perspective to study PPPs (Wang et al., 2018).

1.3.3. The contract–relationship continuum

PPPs can thus be positioned within both the NPM and the NPG literature. Each, however, has its own consequences for the governance of these partnerships. On the one hand, PPPs can be governed using the principle of control, which aligns mostly with NPM. This often translates into the use of performance indicators and contracts. On the other hand, building on the ideas of NPG, PPPs can be governed with a focus on horizontal relationships, thus using more relational governance mechanisms. Hence, there is a distinction between contractual and relational governance. This can be a useful tool in our thinking on the governance of PPPs. Just like most distinctions, it is not a dichotomy, but rather a continuum in which PPPs can be governed using more or less strict contracts and more or less relational governance mechanisms. Here, I discuss the theoretical underpinnings of both ends of the spectrum and indicate what these mean for the governance of PPPs.

Contracts as the dominant governance mechanism

Examination of PPP approaches in various countries reveals that PPP governance seems focused predominantly on contractual governance mechanisms (see for example Reeves, 2008). Particularly in contractual PPPs, as the name already suggests,

the use of elaborate contracts, performance indicators, monitoring, and sanctions are day-to-day practice. The use of these forms of incentivization is strongly inspired by economic theories, such as transaction cost theory and principal–agent theory and builds upon concepts like rationality and opportunistic behaviour (Akintoye et al., 2008; Brown et al., 2016). These theories might explain the tendency to use contractual governance mechanisms. Both transaction cost theory and principal–agenct theory suggest that actors behave rationally and will use situations to their own advantage if the opportunity arises. An actor will weigh the advantages and the disadvantages of a certain situation and thereby choose whatever results in the greatest benefits for himself (Jensen & Meckling, 1976; Williamson, 1996). To prevent this kind of opportunistic behaviour, contracts can be used. These contracts stimulate the agent to align with the goals set by the principal. They include all the rules needed to execute the exchange (Brown et al., 2016). For PPPs, this means that the contract includes agreements on the responsibilities of both partners and the division of risks. It states exactly what the contractor should deliver and what requirements are placed on the work of the contractor. Those requirements consist, for example, of technical specifications with which a tunnel or road should comply; for example, regarding lighting, crash barriers, and emergency lanes. The contract also encompasses arrangements about how the contractor's performance will be monitored. These might consist of agreements on performance measurement systems and of the public client conducting regular inspections. In addition, the contract contains formal process agreements regarding force majeure and unexpected exceptional circumstances, making changes to the contract, or premature termination of the contract (see for example Rijkswaterstaat, 2018; Worldbank, 2018). To assist in the arrangement and enforcement of agreements, these contracts usually also include the opportunity to apply sanctions when performance falls short. This way, actors are provided with steering options to make sure that their partners perform and abide by the contract (Savas, 2000). These mechanisms reduce the opportunity for either partner to display opportunistic behaviour. Given the large risks and (financial) interests in PPPs, the use of such contracts has become the go-to governance tool (Parker & Hartley, 2003).

The limits of contractual governance

Despite the importance of contractual governance and the focus on control in governing PPPs, contractual governance has its limitations. The main disadvantage is that such contracts are inherently incomplete (Brown et al., 2016). A contract is not able to cover all potential circumstances and foresee future developments (Davis, 2007). In the first place, this is due to the complexity of the exchange in PPPs. The complexity of a PPP project is hard to capture in a contract. The technical complexity, the involvement of multiple stakeholders with different interests, and the interdependencies between

partners might all provide challenges with which the contract is not equipped to deal. A hypothetical example will clearly demonstrate this issue. Imagine that the national government decides to build a new railway line between two medium-sized cities, crossing two rivers by bridge and including a tunnel underneath a densely populated area. The PPP is designed as a DBFM project, in which the private partner designs, builds, finances, and maintains the railway. An elaborate contract including all output specifications and performance criteria is used to govern the partnership between the public client and the private contractor. The project is technically complex, because bridges and a tunnel have to be built in residential areas. Simultaneously, the complexity of this project stems from the fact that there are several stakeholders involved who have different interests. The unforeseen emergence of a protest group, complaining that the railway will pass through a nature reserve, new regulations regarding nitrogen emissions at building projects, the discovery of soil pollution, the sudden involvement of a neighbouring municipality that also wants to be included as a stop on the new railway line, and protests from the bus operator who fears stiff competition might all be unforeseen events and complications not covered in the contract. This raises questions as to who is responsible for dealing with these issues and who must carry the corresponding costs and delays.

Now, the complexities of the PPP in the example above refer only to the construction phase. However, PPPs are long-term partnerships that can last up to 30 years. The long-term nature of PPPs makes it even more difficult to consider all future developments and potential issues in the contract. Going back to the example of the railway project, what happens if in the 30 years during the operationalization phase technological developments change the way we travel? What happens if the number of train passengers on the new railway line increases significantly and more maintenance is needed? Which of the partners will be responsible for the costs replacing the safety mechanism with a new one as a result of European legislation? The example clearly shows the incomplete character of contracts. Therefore, potential issues or unexpected side effects offer the possibility of discussions about risks, roles, and responsibilities. Contractual governance using incomplete contracts also allows project partners to act in their own self-interest on issues for which the contract does not provide any clear guidelines. In other words, it offers potential for opportunistic behaviour (Bertelli & Smith, 2009; Brown et al., 2016). Contractual governance thus has limitations in its application to long-term, complex forms of collaboration, such as PPPs. Therefore, an alternative way of governing PPPs must be sought.

Relational governance as the dominant form of governance

Relational governance mechanisms present an alternative to contracts. Relational governance is a form of governance based on the idea that inter-organizational

exchanges, like PPPs, are exchanges embedded in social relationships (Granovetter, 1985). Many of these exchanges are characterized by interdependencies. Because of the interdependencies between actors in the realization of public infrastructure, project partners are stuck to each other and to the project. This creates the need to achieve goals through collaboration and make joint arrangements. Governance emerges from the values and processes in these relationships (see for example Macneil, 1978, 1980; Poppo & Zenger, 2002). Frequently used mechanisms include, for example, information sharing, open communication, and joint problem solving (see for example Macneil, 1980; Poppo & Zenger, 2002). These mechanisms safeguard against opportunistic behaviour and stimulate partners to fulfil their part of the agreement (Ring & van de Ven, 1992; Zheng et al., 2008). Thus, relational governance is recognized and emphasized by several theories, including social exchange theory, resource dependency, and network governance theory (e.g. MacNeil, 1980; Zaheer & Venkatraman, 1995; Lee & Cavusgil, 2006; Edelenbos & Klijn, 2009; Schoenherr et al., 2015). The network management strategies presented in the latter theory also fit very well with the description of relational governance, because they focus on the process and try to align partners with different goals, without enforcing strong control. Consider, for example, the connecting strategies presented in network governance theory. These include, amongst others, creating interaction, appointing process managers, removing obstacles to cooperation, coalition building, and so on (e.g. Klijn et al., 2010). All these examples are strategies developed on the basis of processes that emerge in the relationship between actors in a collaboration.

In relational governance, there is no escaping the notion of trust, which is one of the most frequently cited concepts. As a core concept in relational governance, trust is often seen as an alternative to contracts. Just like contracts, trust can mitigate opportunistic behaviour. Trust will lead partners to share information and resources, help each other, and invest in the project (Ring & Van der Ven, 1992; McEvily & Zaheer, 2006). Following this line of thought, in this dissertation, trust is considered an important concept underlying the use of relational governance mechanisms in public–private encounters. Section 1.4 elaborates further on the role of trust, as an important aspect of relational quality, in relation to PPP governance.

Relational governance can be useful in a PPP, because it offers a way to deal with uncertainty and complexity in PPPs (see Lousberg, 2012; Bult & van Engen, 2015). Relational governance stimulates cooperation and consequently joint problem solving and the search for win-win solutions. Actors jointly determine what needs to be done when they encounter an unexpected event. Relational governance also stimulates the focus on best-for-project solutions, in which the goals of the cooperation rather than the individual goals of the project partners are central. Relational governance might help overcome the adaptive limits of contracts, as project partners might adopt a

more flexible attitude, rather than being confined to contracts (Lee & Cavusgil, 2006). Thus, project partners might be safeguarded against risks that are not easily protected by a contract (Poppo & Zenger, 2002).

The limitations of relational governance

The use of relational governance is often presented as the panacea that cures all problems with which contractual governance seems unable to deal. It is a remedy against opportunistic behaviour, addresses the incompleteness of the contract, provides flexibility, and allows for win-win solutions. However, the use of relational governance mechanisms comes with its own challenges (see for example Cao & Lumineau, 2005; Huxham & Vangen, 2005). Relational governance mechanisms, like open communication and joint problem solving, are often very time and resource consuming to develop and maintain (Das & Teng, 1998; Dyer & Singh, 1998). Paying attention to the collaborative process and creating a shared understanding both require the investment of time and resources by all partners involved. Moreover, it is not always easy for all partners to agree on a common aim or a solution to a problem. The variety of organizational agendas, power differences, and the complexity of the underlying issue make reaching agreement difficult (Huxham & Vangen, 2005). Poppo et al. (2008) suggest that relational governance mechanisms do not ensure fully collaborative behaviour. The use of relational governance mechanisms requires actors to let go and trust their project partner, but this might be hard for some organizations to do. Spending too much time on the relational governance mechanisms can take time away from core tasks, and time-consuming struggles to reach agreement may lead to slow progress and a lack of achievements. Huxham and Vangen (2005) describe this as collaborative inertia. Too much attention on the process may result in a partnership that is all talk and no action.

1.3.4. Meeting in the middle

The contract–relationship continuum thus provides two different ways to govern PPPs: one – contractual governance – based on the ideas of rationality and opportunistic behaviour, resulting in the use of contracts and performance indicators; the other – relational governance – based on trust and interdependencies, resulting in the use of open communication and joint problem solving. Albeit based on very different principles, both forms of governance are designed to align interests between project partners and enhance the performance of public–private encounters. Each form has its own pros and cons. Presenting contractual governance and relational governance as two ends of the spectrum should not lead to the idea that these forms of governance are substitutes. In fact, several scholars have shown that contractual and relational governance may complement each other in inter-organizational relationships (see for

example Poppo & Zenger, 2002). Rather than being on one side of the spectrum, PPPs are more likely to be found somewhere in between, making use of both forms of governance.

The question then arises as to how contractual and relational governance might complement each other. As explained in the previous section relational governance might help compensate inherent incompleteness and lack of adaptive ability of contractual governance (MacNeil, 1978; Lee & Cavusgil, 2006; Zheng et al., 2008). Moreover, relational governance may promote improvements in the contract. Lessons learned in earlier phases of the relationship, stimulated by the use of relational governance mechanisms such as information sharing and open communication, can lead to revisions to the contract (Poppo & Zenger, 2002). Conversely, contracts might also complement the use of relational governance, for example in the first, vulnerable phases of a project (Poppo & Zenger, 2002). Zheng et al. (2008) state that contractual governance provides a stabilizing effect in the early stage of the partnership when relational mechanisms are still fragile. As the relationship between project partners still needs to develop, open communication and joint problem solving might be a challenge, because trust and an understanding of each other's goals and interests need to develop over time. The contract holds the expectation of long-term cooperation and therefore stimulates the use of relational governance mechanisms (Zheng et al., 2008). These findings suggest that the balance between various governance mechanisms might differ based on the situation, the project phase, and the partnership's complexity and dynamics. However, research has also shown that it can be difficult to combine the two forms of governance in practice (e.g. Reeves, 2008). With contractual governance still being the dominant mode of governance, these governance mechanisms definitely do not always meet in the middle.

This raises questions about the balance between both forms of governance. When do we use which mechanisms? How does the interplay of contractual and relational governance in PPPs work out in different situations? And what mix is needed to make PPPs a success? Mixing both contractual and relational governance can be a double stimulus: for cooperation and against opportunistic behaviour. Consequently, the combination of both forms of governance is claimed to lead to better results than the use of either one of these mechanisms alone (Klein-Woolthuis et al., 2005; Dewulf & Garvin, 2020). However, knowledge about which combinations of contractual and relational governance work is limited. Several studies have already indicated that governance has a significant effect on PPP performance (see for example Lee & Cavusgil, 2006; Klijn et al., 2010; Van Gestel et al., 2012; Kort et al., 2016). Ergo, the following section addresses PPP performance, which is the dependent variable in this dissertation.

1.4. PUBLIC–PRIVATE PARTNERSHIP PERFORMANCE

This section addresses the performance of PPPs. First, it elaborates on the promise of on-time and on-budget delivery that comes with contractual PPPs. The question is whether PPP is able to deliver on its promise in practice. The second part of this section discusses some methodological issues in measuring PPP performance in academic research.

Despite being frequently used, PPPs are not always a success story. When PPPs were first introduced, they came with great expectations. Because of their long-term focus and the integration of different project phases, they were supposed to minimize lifecycle costs, be more efficient, and lead to better performance. The involvement of private partners throughout the entire project and the use of private finance were supposed to reduce pressure on public sector budgets and lead to better value for money, more innovation, stable incomes for private partners, and better on-time and on-budget delivery (Hodge & Greve, 2013, 2017[b]). Despite these promises, earlier studies show mixed results regarding PPP performance (Hodge & Greve, 2009, 2017[b]; Hodge et al., 2018; Vining & Boardman, 2008). Some studies show an increase in the on-time and on-budget realization of public infrastructure (NAO, 2002; MacDonald, 2002; Pollitt, 2002). Furthermore, the integration of different project phases seems to lead to optimizations and lower lifecycle costs (Grimsey & Lewis, 2004[a]; Eadie et al., 2013). There are, however, also plenty examples of PPP projects that do not perform as well as expected. Using a PPP does not always rule out cost and time overruns (Ghobadian et al., 2004; Shaoul, 2005; Boardman et al., 2005; Verweij et al., 2017). Some disappointing performances can be traced back to the tender phase, where competition forces private partners to put in highly competitive prices and take more risks than they are be able to carry. High tender costs and long dialogues in the tender phase also affect the project's efficiency (see Blanc-Brude et al., 2006; Reeves et al., 2015). Furthermore, research shows that PPP does not live up to its promise of realizing more innovative projects. Contrary to expectations, the transfer of risks from the public to the private partner results in risk-avoiding behaviour by the private partner in which it is unwilling to accept the risks associated with innovation (Hueskes, 2019). In the Netherlands, construction firms state that the risks in large and complex DBFM projects are simply too great (Consultancy.nl; 2019), resulting in lowered enthusiasm to participate in such megaprojects. So, despite the many potential benefits of PPPs, it is not always easy to make them work in practice.

The mixed results for the practice of PPPs already indicates that, regarding PPP performance, multiple dimensions should be taken into account. PPPs need to be on time and on budget, but also deliver high-quality public infrastructure. Simultaneously, they are expected to deliver in terms of innovation. The existence of multiple

relevant dimensions of performance leads to trade-off dilemmas. On-budget delivery might lead to slightly lower quality, whereas innovation in the design and construction might lead to less predictability in the following maintenance period. This makes it difficult to measure success. After all, which of these dimensions matters (most)? Are partners willing to pay more to take stakeholders' demands into account? Or accept time delays in exchange for better quality? This advocates for using multiple dimensions in measuring performance to create a nuanced view of PPP performance. Another interesting question regarding the evaluation of PPP performance is for whom the partnership should be a success (Hodge & Greve, 2017[b]). The public client would like to have high-quality for a low price, whereas the private contractor needs to make a profit. Transferring risks might make it possible for the public client to stay within budget, while the private contractor has to take heavy losses to realize the project. With multiple actors and interests, there is no unambiguous measure of success in PPPs. Therefore, we follow Verweij (2015) in not using only quantitative measures of performance. Instead, the actors' satisfaction is taken into account, as that is a better way in which to address the complex nature of PPP projects (Verweij et al., 2013; Verweij, 2015). All in all, in measuring the performance of PPPs, one should take into account (a) that this is a multi-dimensional concept with a trade-off between the different dimensions and (b) that success is in the eye of the beholder. Different actors with different interests might have different perceptions on the performance of PPPs; this makes it important to include not only objective measurements, but also actors' satisfaction, in measuring the success of PPPs (see Verweij, 2015).

1.5. RELATIONAL QUALITY: MEDIATING THE RELATION BETWEEN GOVERNANCE AND PERFORMANCE?

In the relationship between governance and performance, a third concept plays an important role. This third concept is the quality of the relationships between project partners. The exchange between public and private actors in a PPP is embedded in social relationships. Previous research shows that the control function of contracts may reduce the quality of these social relationships between partners and decrease the likelihood of continuing collaboration (Malhotra & Luminau, 2011). Contractual management focuses predominantly on the outputs that need to be realized and not so much on the social relationships between project partners. In contrast, relational governance focuses on the quality of the relationship between project partners by stimulating communication and joint action.

Social relationships between partners in public–private encounters have been receiving increasingly more scholarly attention (see for example Bartels & Turnbull,

2020). Yet, the quality of the relationships between actors in an exchange, or relational quality as it is called in this dissertation, can be a somewhat nebulous concept. Therefore, a brief introduction to delineate this concept seems in place. Relational quality refers to the state of the relationship between project partners. Relational quality is not an act or an activity; rather, it refers to the condition something is in – in this case the social relationships between partners in a PPP – and indicates how good or bad it is. For example, social relationships can be characterized by different levels of trust and respect. Relational quality refers to the degree to which these characteristics are present. It does not refer to the actions leading to, or resulting from, the state of the relationship. Compare this to governance, which refers to acts, such as applying sanctions, monitoring a partner's performance (in the case of contractual governance), or joint problem solving or making process agreements (in the case of relational governance).

There are surprisingly few studies on relational quality in PPPs. The only exception is trust, which has been frequently studied (e.g. Zaheer et al., 1998; Klijn et al., 2016[a]). However, most of these earlier studies have two limitations. First, some of them use trust as a proxy for relational governance and consider trust itself to be a governance activity, rather than a principle guiding the activity (see for example Zaheer & Venkatraman, 1995; Caniëls et al., 2012). Second, trust is often the only indicator of relational quality, whereas relationships consist of more than mere trust. Social relationships between partners are determined by several relational qualities. Besides trust, which is the belief that partners will act honestly and not take advantage of each other, even if the opportunity arises (Cummings & Bromily, 1996; Edelenbos & Klijn, 2007), respect is another important quality of social relationships. Respect can be understood as recognition of someone because of his/her abilities or achievements, but it also means that partners are considerate of each other's opinions and wishes. Partners need to respect each other, but also each other's opinions, interests, and efforts (Ansell & Gash, 2008; Alam et al., 2014). Furthermore, openness is an important quality of relationships. This refers to a lack of secrecy and suggests that partners are transparent and provide each other access, for example to their ideas, opinions, or information regarding the project (Pomerantz & Peek, 2016). Openness improves communication, allows for the sharing of knowledge, and allows partners to learn from each other and their mistakes (Kumaraswamy et al., 2015). Finally, relationships are characterized by a certain degree of reciprocity (Thomson et al., 2007). After all, it is not without reason that the expression, give and take, is embedded in our thinking when it comes to social relationships. A relationship in which one actor only gives and never receives, while the other only takes and never gives, is not long-lived.

Although related, relational quality is thus not the same as relational governance. Nevertheless, just like governance mechanisms, it is said to affect performance in

public–private encounters (Zaheer et al., 1998; Klijn et al., 2016[a]) and the use of governance strategies might impact the quality of social relationships between project partners. After all, relational governance stimulates interaction and the development of long relationships (Dong et al., 2017), whereas contracts might provide a solid and stable base to start the development of social relations despite the uncertainties and dynamics surrounding PPPs. Zheng et al. (2008) hint towards the possibility that relational quality might be able to partially explain the relationship between governance and performance. In their research, they find that the quality of the relationship determines whether project partners experience the contract as a sign of trust or distrust. This suggests that the quality of the relationship might influence the success governance mechanisms used (see Figure 1.1).

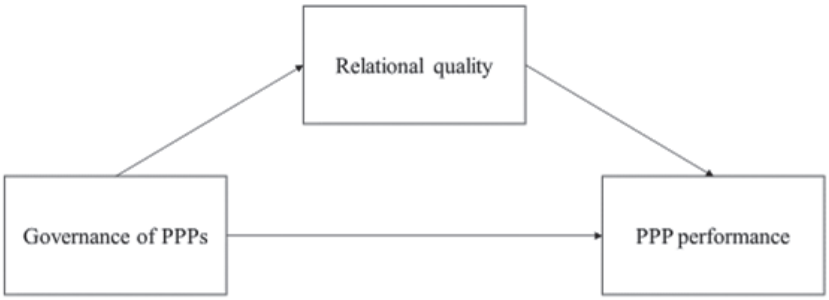

Figure 1.1 Conceptual model

After all, it is not only the use of governance mechanisms, but also the response of project partners to these mechanisms, that ultimately determines the success of the governance efforts. One could imagine that relational governance mechanisms will have less effect if distrust in the relationship means that partners are not willing to fully commit to the implementation of such mechanisms. Strict enforcement of the contract in an already low-quality relationship might lead to further deterioration of the relationship, resulting in rigid attitudes in any discussions about interpretations of contract requirements. Conversely, high-quality relationships between project partners may lead to acceptance of, and commitment to, the governance strategy deployed, making it more likely that the governance mechanisms will achieve their intended effect. This study therefore includes relational quality as a mediating variable in the relationship between governance and performance. This brings us to the central research question of this dissertation.

1.6. FOCUS OF THIS DISSERTATION

This dissertation revolves around the governance of PPPs as the central theme. Within this broad theme, the focus lies predominantly on the balance between various governance mechanisms. It aims to study how different forms of governance are combined in PPPs and how the mix of governance mechanisms affects PPP performance. To do so, the role of relational quality is included as a mediating variable that might be able to explain the relationship between governance and performance (see Figure 1.2). Therefore, the central research question to be answered in this dissertation is:

> *How do contractual and relational governance affect the performance of public–private partnerships, and what is the role of relational quality therein?*

The main research question is supported by four sub-questions. Each of the sub-questions addresses a core concept or one of the supposed relationships between the concepts. To answer the main research question, it is first important to gain more insight into the governance of PPPs. The first sub-question therefore focuses on practitioners' perspectives on PPP governance, asking (1) *What are the different perceptions of professionals working in public–private partnerships regarding the governance of PPPs?* From their experience, these professionals are able to indicate the main considerations regarding the use of various governance mechanisms and which different, hybrid forms of governance might be possible in PPPs. Chapter 2 therefore starts by systematically analysing the perceptions of professionals working in PPPs regarding the ideal (hybrid) form of governance.

A second concept that needs more clarification to answer the main research question is relational quality. Therefore, the second sub-question addresses this concept, with the aim of enhancing our understanding about the meaning of relational quality in PPPs by concentrating on the key aspects of the concept and testing its main determinants. Both practitioners and scholars seem to attach great value to good relationships between partners in any collaboration, and this sub-question helps to understand what good relationships actually mean and how they can be built: (2) *What is relational quality and which determinants have an influence on relational quality in public–private partnerships?* Both Chapter 3 and Chapter 4 aim to answer the second sub-question. Chapter 3 provides an overview of what is known about relational quality in PPPs and offers a first conceptualization of it. Chapter 4 tests the influence of several determinants on relational quality in PPPs. It also includes some governance mechanisms to test the relationship between governance and relational quality.

Next, it is important to understand the relationship between these two concepts – governance and relational quality – and performance, as the dependent variable

of this study. Consequently, the next two sub-questions address, respectively, the role of relational quality and the effect of governance on PPP performance. The third sub-question tests the commonly cited assumption that high-quality relationships improve partnership performance. Aside from being relevant in themselves, do good relationships really matter for PPP performance? The question therefore is (3) *How does relational quality affect the performance of public–private partnerships?* The last sub-question addresses the effect of governance on performance. As PPPs are usually governed by elaborate contracts, this sub-question explicitly raises questions regarding the balance between relational and contractual governance in successful PPPs. What does the mix between both modes of governance look like exactly? This sub-question aims to identify which combinations of contractual and relational governance mechanisms are present in high-performing PPPs: asking (4) *How do contractual and relational governance relate to each other in successful public–private partnerships?* These two sub-questions are answered in Chapter 5 and 6 of this dissertation. To answer the third sub-question, Chapter 5 tests the effect of relational governance and relational quality on the performance of PPPs. Chapter 6 focuses predominantly on the balance between contractual and relational governance mechanisms. This chapter merges all pivotal concepts in this dissertation – relational quality, governance, and performance – into one study. In doing so, it not only provides an answer to the final sub-question, but also has a crucial role in answering the central research question of this dissertation.

Figure 1.2 shows the core concepts and the supposed relationships between these concepts. The circles representing the sub-questions, and the stars representing the chapters in this dissertation, indicate how the empirical studies in this dissertation aim to contribute to different parts of the model and answer the related research questions.

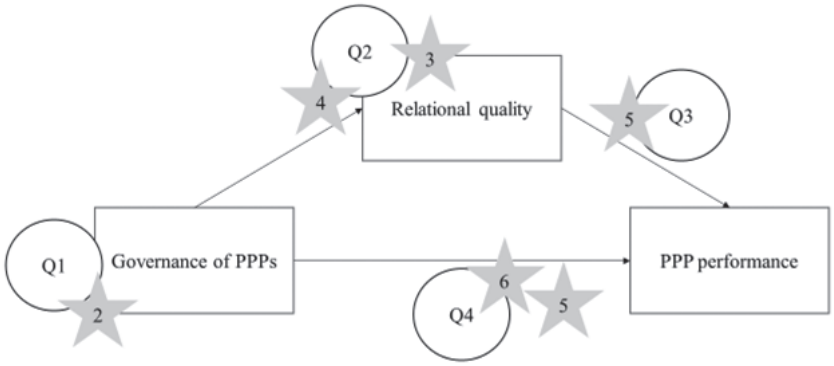

Figure 1.2 Visual representation of the core model, sub-questions, and empirical chapters in this dissertation

1.7. METHODOLOGY AND RESEARCH CONTEXT

To answer the main research question and the four sub-questions, this dissertation consists of five empirical chapters. The studies in each of these chapters espouses a broad range of research methods, both qualitative and quantitative. Therefore, this dissertation has a multi-method design. Some of these methods, such as QCA and Q-methodology, have been scarcely used in PPP research and thus present a methodological contribution to the field. This section addresses the underlying arguments for using a multi-method design and elaborates on the use of the studies and the data collected for Chapter 2 to 6. In this section, I pay little attention to the specifications of the various research methods as those can be found in the respective empirical chapters.

1.7.1. Multi-method design

In this dissertation, I adopt a variety of research methods. In each chapter, one method is central, except for Chapter 2. There, the use of Q-methodology has been combined with a regression analysis. Chapter 3 is based on a systematic literature review; for Chapter 4 and 6 I have worked with fuzzy set Qualitative Comparative Analysis (fsQCA); and Chapter 5 is based on a quantitative, multi-level analysis (MLA).

The choice of a multi-method design in this dissertation was a conscious decision. There are two main arguments for adopting this design. First, the decision regarding the methodology was based on the desire to make a methodological contribution to PPP as a research area. Most studies on PPPs are based predominantly on small N (case) studies. Although these studies provide great in-depth knowledge, they are hard to generalize. Therefore, I felt strongly that PPP as a field of study could benefit from methods other than case studies, of which there are already so many commendable examples. A multi-method design allows for recognizing larger patterns on the one hand, while also interpreting them on the other hand. Moreover, using methods that are not standard in PPP researchers' repertoire allows for the creation of new knowledge. For example, insights into the ideas regarding PPP governance on a micro level – that of individual professionals in PPPs – are scarce. However, this knowledge is important, as the actions of the professionals working in a project are guided by their ideas on governance. Assuming that they give shape to the governance of PPPs in daily practice, their perceptions regarding governance affect the actual use of governance. Moreover, a mismatch between their ideas on governance could influence the rela-

tionship between project partners and their collaboration. Q-methodology allows for systematically testing the ideas regarding governance on a micro level, providing new knowledge on this topic. In particular, Q-methodology and QCA[2] are not yet common practice in research on PPPs.

Second, the sub-questions in this dissertation required a variety of methods. The aim to further develop the concept of relational quality within PPPs required a method that allowed for further conceptualization, whereas testing some common assumptions on the relationship between relational quality and performance required a systematic test on a larger scale. The suggestion that various forms of governance may complement each other required a method that allowed for conjunctural causation, i.e. that the effect of something does not work in isolation but unfolds only in combination with other conditions (Schneider & Wagemann, 2012: 78). With conjunctural causation being one of the underlying principles of QCA, this method is very well suited to studying the balance between contractual and relational governance mechanisms.

1.7.2. Data underlying the empirical studies

For the empirical Chapters 2 to 6, a large dataset was collected. To perform the Q-method study in Chapter 2, 119 Q-sorts were conducted by public and private professionals in three different countries: Canada, Denmark, and the Netherlands. In these Q-sorts, respondents were asked to sort statements regarding PPP governance, to indicate which of these statements they found most important. The literature review in Chapter 3 entailed a quick scan of thousands of scientific, peer-reviewed articles. Only 63 of them discussed relational aspects in PPPs and ultimately met the criteria. These studies were analysed to study the existing knowledge of relational quality in PPPs and solve the fuzziness surrounding the concept. Chapter 4 and 6 built upon the same material. Both QCAs contain qualitative and quantitative material, collected in collaboration with researchers from the University of Antwerp. This dataset consists of 74 interviews and 72 surveys among public and private professionals in PPP projects in the Netherlands and Flanders. This data collection focused on the construction phase, as this is a phase of intense collaboration and frequent communication. The relationship between project partners, which starts in the tendering phase, develops into a more mature relationship during the realization of the project. That makes it a suitable phase to study relationality in these kinds of partnerships. Moreover, at the time of the research for this dissertation, there was only a little experience with these projects in the maintenance phase. Chapter 5 uses survey material from 2014 to test

2 QCA is not yet common practice, but interest in this research method is growing. There are nowadays some good examples of QCA in PPP studies (see for example Verweij, 2015; Soecipto & Verhoest, 2018).

the relationships between relational governance mechanisms and PPP performance. This material consists of 144 surveys completed by professionals working in Dutch PPP projects.

In addition to the material used in the specific chapters, several exploratory conversations were held with professionals about the main topic of this dissertation. Moreover, between 2016 and 2019, the Princess Beatrix sluice project in the Netherlands has been subject of longitudinal case study research. For three years, I observed its monthly contract management meetings, had many conversations with professionals working on the project, and held 12 interviews about the use of governance mechanisms during the negotiations regarding contract changes. Although this material and the analysis thereof came too late to include it in this dissertation as a separate empirical chapter, some of my experiences at the project are incorporated in the introduction and the conclusion to illustrate this dissertation's main findings.

1.8. THE CONTRIBUTION OF THIS DISSERTATION

This section elaborates on the relevance of this dissertation, showing its contribution to both academia and society.

1.8.1. For academia

The contribution of this dissertation to the existing body of academic knowledge lies in three domains. First, it responds to a call to pay more attention to relational aspects in research on PPPs (Weihe, 2009; Verweij, 2018). Previous research on PPPs focuses predominantly on economic assumptions underlying PPPs and closely related topics such as risk, contracts, and performance management (Cui et al., 2018; Wang et al., 2018). This dissertation adopts a different perspective. It contributes to the PPP literature by focusing on the quality of interpersonal relationships between partners in the partnership. In doing so, it offers new knowledge regarding relational quality in PPPs and its effect on the relation between governance and performance. A thorough study of the role of relational quality has not yet been sufficiently conducted. After all, this topic is not often studied in the field of PPP research. It does, however, fit in a recent and growing trend of public administration research that focuses on relationality (see Bartels & Turnbull, 2020). In this dissertation, I aim to explore this relatively new concept by conceptualizing it further and exploring how high-quality relationships can be achieved in PPP projects.

Second, this dissertation contributes to the literature on combining various governance mechanisms. It builds upon the ideas of, amongst others, Poppo & Zenger (2002) who show that contractual and relational governance mechanisms are not substitutes

but complements. This dissertation does not merely confirm their argument but takes it one step further. It shows what the balance between both mechanisms should look like according to public and private professionals (Chapter 2) and how contractual and relational governance mechanisms can be combined in successful PPP projects (Chapter 6). In this dissertation, the perspectives of both public and private actors are taken into account. This is an addition to the existing literature, as most research on PPPs in public administration adopts a predominantly public perspective (see Hueskes et al., 2019). By combining different perspectives on governance, this dissertation aims to provide new insights on governing PPPs, the role of relational quality therein, and its consequences for PPP performance.

Finally, this dissertation aims to make a methodological contribution. Although studies into relational quality in PPPs are scarce, the limited studies available suggest that relational aspects, such as trust, do matter in PPPs (e.g. Edelenbos & Klijn, 2007). Evidence for this often comes from single case studies with low generalizability (see for example Edelenbos & Klijn, 2007; Barretta et al., 2008; Alam et al., 2014). This dissertation aims to systematically test these assumptions, while introducing methods rarely used in this area, including QCA and Q-methodology. With the use of these methods, this dissertation aims to make a methodological contribution to the development of more systematic, larger-N-based research on PPPs.

1.8.2. For society

Besides making a scientific contribution to the body of academic knowledge, this dissertation also provides valuable insights for society. More and more often, public and private professionals meet each other in the public domain to develop public policy, public services, and public goods. Despite their interdependence in this pursuit because they need each other's resources and knowledge, those encounters do not always result in successful collaborations. Each partner has its own goals, interests, and ways of working, and it is often hard to align them. This makes the governance of such partnerships all the more important. Given the many differences between public and private actors, it is unlikely that their ideas regarding the governance of these partnerships are the same. This study aims to provide insight into the different perspectives that exist among public and private professionals on the governance of PPPs (see Chapter 2), which might provide a suitable starting point in the discussions between project partners on this topic.

Second, in emphasizing the importance of relational quality for project performance, this dissertation shows practitioners the relevance of relational and informal aspects of a partnership. It aims to study what determinants contribute to relational quality, hence providing insights that professionals can use to build high-quality relationships with their counterparts in PPPs.

Finally, by extending the governance repertoire beyond the simple idea of collaboration or the use of contracts, this dissertation provides insights for public organizations regarding the balance of various governance mechanisms. As PPP projects are often still dominated by contracts, this dissertation aims to enhance the understanding of the balance between contractual and relational governance mechanisms. More precisely, it aims to identify several concrete combinations that work in successful PPPs. This could inspire public organizations to redesign the governance of their partnerships in order to make them more successful.

1.9. OUTLINE OF THIS DISSERTATION

The outline of this dissertation is as follows. This first, introductory chapter presents the central theme of this dissertation: the governance of PPPs, its effect on PPP performance, and the role of relational quality therein. Chapter 2 to 6 are all empirical chapters and present the studies performed to answer the main research question and the accompanying sub-questions.

Chapter 2 studies the perceptions of public and private professionals regarding PPP governance. This chapter has been published as an article in *Public Administration.* Chapter 3 and Chapter 4 both dive into the concept of relational quality (sub-question 2) and are both single-authored papers. Both papers have been submitted to an international academic journal. The first of these two chapters aims to unravel the concept of relational quality. Chapter 4 provides a first test of the conceptualization presented in Chapter 3, while studying the combinations of conditions present in high-quality relationships. Chapters 5 and 6 focus on the relationship between governance and performance but use very different methods to do so. Both chapters have been published as articles in peer-reviewed, international academic journals, respectively, *Public Management Review (PMR)* and *Journal of Public Administration Research and Theory (JPART).* Chapter 5 conducts a multi-level analysis to test the effect of both relational governance and relational quality on performance. Chapter 6 employs QCA to identify different mixes of governance mechanisms that result in high PPP performance. Finally, Chapter 7 presents four core conclusions and the answer to the main research question of this dissertation. It also discusses the implications of this research, both for academia and for society. Furthermore, Chapter 7 also looks ahead by presenting several avenues for further research on the governance of PPPs.

INTERMEZZO 1.

The existing body of literature on public–private partnerships (PPPs) pays ample attention to the governance and management of these partnerships (e.g. Caniëls et al., 2012; Grimsey & Lewis, 2004[b]; Kort et al., 2016). In this body of research, we can identify two ways of looking at the governance of public–private partnerships, as has been described in Chapter 1 of this dissertation. On the one hand, there is a focus on contracts as the dominant governance mechanism. The contract is the starting point of several forms of PPPs, such as the long-term infrastructure contract (LTIC) (Hodge & Greve, 2013). Nevertheless, more recent studies also suggest the use of relational governance mechanisms, such as trust, horizontal collaboration, and informal communication (for example: Parker & Hartley, 2003; Lee & Cavusgil, 2006; Weihe, 2009). The existence of these two different theoretical ideas regarding the governance of PPPs raises the question how professionals working in these partnerships perceive the governance of the projects they are working in. What are their perceptions and preferences regarding the governance of PPPs? Are they more focused on contractual governance mechanisms to govern the project? Or do they value relational governance mechanisms and strive towards a more horizontal collaboration? These questions formed the starting point for the study in Chapter 2. In this study, Q-methodology is used to study the perceptions of professionals working in PPP projects, hitherto using a rarely used method in PPP research. Although Q-methodology has not been used often in this research area, it is particularly suitable to study the perceptions of individual professionals. Since PPP is adopted, promoted, and implemented differently in different countries, I wanted to adopt a comparative perspective, including professionals from multiple countries. Although most research on PPPs in the field of public administration is focused on the public side of the partnership (Hueskes et al., 2019), this study includes professionals from both public and private organizations working in PPPs. As studies on different topics have shown that public and private organizations differ in many respects (Jacobs, 1992; Bozeman & Bretschneider, 1994; Boyne, 2002), it would be relevant to study the perceptions of professionals from both sides actors to identify common ground and differences in their governance preferences.

Chapter 2

How do professionals perceive the governance of public–private partnerships? Evidence from Canada, the Netherlands and Denmark.

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ABSTRACT

In public–private partnerships (PPPs), the collaboration between public and private actors can be complicated. With partners coming from different institutional backgrounds and with different interests, governing these partnerships is important to ensure the projects' progress. There is, however, little knowledge about the perceptions of professionals regarding the governance of PPPs. This study aims to explore professionals' viewpoints about governing PPPs, and to explain potential differences using four theoretical governance paradigms. Using Q-methodology, the preferences of 119 public and private professionals in Canada, the Netherlands and Denmark are explored. Results show four different viewpoints regarding the governance of PPPs. Experience, country and the public–private distinction seem to influence these viewpoints. Knowledge of these differences can inform efforts to govern PPPs and contribute to more successful partnerships.

2.1. INTRODUCTION

Public–private partnerships (PPPs) are by now a well-established organizational arrangement to provide public goods and services (Grimsey & Lewis, 2004[a]). These partnerships can be defined as *"co-operation between public and private actors with a durable character in which actors develop mutual products and/ or services and in which risks, costs, and benefits are shared"* (Klijn & Teisman, 2003: 137). The most well-known PPP model is the long-term infrastructure contracts (LTIC) in which several project phases (design, build, finance, maintenance) are integrated. This allows for lower coordination costs and optimization gains between project phases (Greve & Hodge, 2013).

PPP is a hybrid arrangement in the sense that it cuts across the public and private domain and aims to combine public and private practices that may prove to be hard to align. The variety of governance ideas and mechanisms associated with it emphasizes its hybrid character (Alam et al., 2014; Quélin et al., 2017). For instance, public–private partnerships reflect elements of the New Public Management (NPM) paradigm, including the strong focus on performance indicators and contracts as safeguard against opportunistic behaviour (De Palma et al., 2012). Simultaneously, there are clear indications of a collaborative governance paradigm, emphasizing collaboration, trust, and horizontal coordination to achieve win-win solutions (Klijn & Teisman, 2003). Because of the different governance ideas associated with PPPs, partners in PPPs can hold very different views on the most appropriate and desired governance perspective and mechanism (Cheung et al., 2010). This may lead to a mismatch of attitudes and expectations.

Currently the literature on PPP governance is well developed on a macro- and meso-level (Van den Hurk & Verhoest, 2015; Hodge et al., 2018; Wang et al., 2018). For example, Hueskes et al. (2017) focus on governance instruments to realize sustainability consideration in PPPs. It is also widely identified that partners in PPPs do not always share the same expectations and perceptions, which may lead to suboptimal performance or straightforward failures (Bowman, 2000; Reynaers & van der Wal, 2018). However, less systematic research has been done on a micro-level, examining the perceptions of professionals regarding PPP governance. Exceptions are Hodge et al. (2017) who study how Australian professionals react to PPP governance after the contract has been signed and Willems et al. (2017) who asked Belgian professionals about their perception of PPPs. Yet, a gap exists with regard to systematic, cross-country comparative research in this respect. Although the application of LTICs is an international practice in which there has been considerable policy transfer and emulation between countries, governance ideas and practices have specific effects and meanings in different administrative contexts (see Hodge et al., 2017). The research presented in this article aims to fill that gap by systematically analysing the percep-

tions of PPP professionals in three countries with various levels of PPP experience: Canada, the Netherlands, and Denmark.

The central question of our study is: *How do professionals involved in public–private partnerships in Canada, the Netherlands, and Denmark perceive the (ideal) governance relationship in these partnerships*? We use Q-methodology which is especially suitable for identifying and systematically analysing these viewpoints (Watts & Stenner, 2012).

In the remainder of this article, we first distinguish the four theoretical governance paradigms used to formulate statements for the Q-methodology. Then, both Q-methodology and the respondent selection are explained. Next, the analysis of the viewpoints of PPP professionals shows four different profiles. Finally, we address important conclusions and limitations and consider avenues for future research.

2.2. GOVERNANCE PARADIGMS AND PPPS: A THEORETICAL EXPLORATION

Within the literature on governance and public–private encounters, we can distinguish paradigms that share a specific focus on values or governance instruments. In this section, we highlight four paradigms that have proven to be recognizable and relevant in the view of both academics and practitioners: Traditional Public Administration, New Public Management, Collaborative Governance, and a private governance mechanism (compare: Christensen & Laegreid, 2011; Ansell & Gash, 2008; Osborne, 2010; Koppenjan, 2012). These paradigms are not the only possible way to distinguish ideas on governance nor are they mutually exclusive (e.g. Pollitt & Bouckaert, 2017). Hence, we do not strive towards a definitive clustering of the governance literature but use the paradigms as a heuristic instrument to identify and distinguish the perceptions guiding actors involved in PPPs and inform the development of the Q-set.

2.2.1. Traditional Public Administration: safeguarding public values

The first theoretical paradigm to typify the way professionals may think about governing PPPs is that of traditional public administration (TPA). TPA focuses on governance as safeguarding public values and achieving political goals (Wilson, 1989). The primacy of politics is an important principle, implying that political decisions are taken by democratically elected politicians and that the administration is under formal control of political leadership. The presence of impersonal and stable rules shields citizens from arbitrariness, power abuse, and personal whims (Hughes, 2018). With regards to the relationship with private partners, this implies that interaction should follow clear regulations. The explicit standardization of roles, processes, and rules makes interaction predictable (Hughes, 2018). Safeguarding public values, like impartial-

ity, equality, and transparency is key now that private parties are involved in public service delivery. The large interests involved and the lack of transparency of PPP-arrangements may threaten democracy and create risks of collusion and corruption (Bowman, 2000). PPP projects should be publicly defined, and politicians maintain the freedom to take political decisions. Private parties might have to be compensated for new policies or political decisions, even if this limits the effectiveness and efficiency of PPPs. This traditional model is now being challenged as rapid changes in society have led to the rise of different paradigms, like New Public Management (Hughes, 2018).

2.2.2. New Public Management: running government like a business

The New Public Management (NPM) paradigm focuses on efficiency and effectiveness using (performance) management and competition (Hood, 1991; Christensen & Laegreid, 2011). Governments define goals, translate these into output- and performance indicators, and then decide through a competitive tendering process who delivers the service (Hood, 1991). NPM both had a principal–agent focus (making managers manage) and a managerial focus (letting managers manage) (Christensen & Laegreid, 2011). When governments act as principals towards private partners that are considered self-interested agents, strict contract management is needed to keep the agent to the contract. However, this principal–agent relationship is vulnerable to strategic behaviour from both sides (Shaoul, 2005). The principal may impose unrealistic contract conditions and the agent will only fulfil the obligations made explicit in the contract and will be inclined to cut corners if allowed (Leruth, 2012). In the managerial focus, a 'letting managers manage' approach may lead to a more balanced relationship between both partners. However, business-like control systems are still used to hold them accountable for their results.

2.2.3. Collaborative Governance: managing performance through joint interaction

The collaborative governance paradigm in the context of New Public Governance focuses on public decision-making and service delivery in networks of mutually dependent actors. It emphasizes the importance of interdependencies, collaboration, and coordination (Ansell & Gash, 2008; Osborne, 2010). Public goals are defined and implemented through a process of interaction and negotiation, aimed at realizing in win-win situations (Klijn & Koppenjan, 2016[a]). Governing PPPs implies collaboration and negotiation between actors in a horizontal way and the creation of conditions that facilitate these processes. Relationships are less defined as principal–agent relationships, but rather as partnerships and stewardship relations, in which actors have a mind-set that stimulates them to collaborate (Koppenjan, 2012). This requires the acknowledgement that interests diverge, the sharing of risks, and a joined effort in

managing PPPs (Grimsey & Lewis, 2004[b]). This paradigm assumes close interaction between partners, or even joint activities and joint teams (Klijn & Koppenjan, 2016[a]). In contrast to NPM, the focus is less on contracts and more on relational governance and mutual trust (e.g. Alam et al., 2014).

2.2.4. Privatized governance

A fourth paradigm represents the business perspective of PPPs and builds upon the ideas of privatization and self-governance. Some scholars consider PPP as a move toward privatization (e.g. Savas, 2000). Promises of more efficient and innovative service delivery require governments to transfer tasks and risks to the private sector (Greve & Hodge, 2013). Governments should leave the daily management of the PPP project to the private companies so they can use their expertise, skills, and creativity to determine how to execute, manage, and monitor their tasks (Bovaird & Sharifi, 1998). This paradigm is very much in line with the original principles of PPPs as it originated in the Private Finance Initiative in the UK. The initial idea for PPP was to let private finance into the project and let the private sector take much of the risks and responsibilities. The Private Finance Initiative was very much about tapping into private sector expertise, both in terms of acquiring finance, but also for using private sector expertise in the design, build, and maintenance (Shaoul, 2005). As such this paradigm emphasizes a form of governance that leaves the daily project management and the initiative to the private sector after the framework conditions have been agreed on.

2.2.5. The four paradigms compared

The governance relationship between government and private parties can thus be perceived in very distinct ways. In practice, of course, mixes of these paradigms are possible and likely, but each paradigm has a distinct focus and approach to public–private partnerships. In this study, we aim to explore and present different perspectives on the governance of PPPs, using these theoretical paradigms as a starting point. Table 2.1 provides an overview of the main characteristics of the four paradigms.

2.3. RESEARCH DESIGN: A COMPARATIVE STUDY USING Q-METHODOLOGY

In this section we will first elaborate on our decision to include professionals from Canada, the Netherlands, and Denmark in this study, and then provide a general overview of Q-methodology and the Q-sort statements we have designed. Finally, we discuss the respondents' selection.

	Traditional Public Administration	New Public Management	Collaborative Governance	Privatized governance
Focus	Achieving political goals and safeguarding public values	Improving efficiency and effectiveness of service delivery	Improving inter-organizational coordination and collaboration	Private partners take most risks and responsibilities
Roles of public officials	Neutral bureaucrat	Monitoring entrepreneur	Partner and Network Manager	Distant facilitator
Relations private parties with government	Safeguarding the primacy of politics and political control	Principal–agent relationship governed by contract (management)	Partnership with intensive interactions aiming at high trust relationships	Limited interactions between partners. Autonomy of private partners.
Core ideas/ management techniques	Rules and regulations	Using business instruments (contracts and performance indicators)	Ongoing collaboration, negotiation and network management	Improving the use of expertise by enhancing and facilitating autonomy of private parties

Table 2.1 Four paradigms on governing public private partnerships

2.3.1. Country selection: Canada, the Netherlands, and Denmark

By now, PPPs have been adopted by many countries around the world. Given the international debate about PPPs (e.g. at the World Bank, the PPP knowledge lab, and the European PPP Expertise Centre) and the fact that most countries base their PPPs on the British Private Finance Initiative- model, one might expect that the use of PPPs is similar in most countries. However, research shows that practices and governance ideas of PPPs vary across countries (Hodge et al., 2018). Besides administrative traditions, the moment of adoption and experience with the PPP-model may influence the development of the discourse regarding PPP in a given country. Therefore, this study adopts a comparative perspective. Canada, the Netherlands, and Denmark all make use of the PPP-model, but differ in their experience with PPPs, their use of PPPs, and national government support for PPPs. Canada is an early adopter with much experience with PPPs, while Denmark is a late adopter and has limited experience with the PPP-model. The Netherlands is an experienced user of the PPP-model. It shares many of its administrative traditions with Denmark (both fit in the Rhineland tradition), but in terms of support for, and policy on PPPs, both countries take an entirely different approach. So, our study includes two countries (Netherlands and Denmark) that differ from each other in terms of active PPP policy, but share the same administrative tradition, and we have one country (Canada) as comparison with a significantly different administrative background (Anglo Saxon).

Canada is considered a global leader in using PPPs. Between the early 1990s and 2018, over 200 infrastructure projects are or have been developed through PPPs. As a result of the constitutional allocation of powers in the country, most PPPs in Canada

are led by the provincial governments, resulting in variations in regulatory structures, practices, and cultures of PPPs across the country. In general terms, PPPs in Canada can be divided into two waves. A first wave of projects beginning in the early 1990s that sought to attract new revenue through user fees, transfer significant risk and responsibility to the private sector, and faced criticisms about high costs and a loss of government control over public assets (Vining & Boardman, 2008). The second wave of PPP projects beginning in the early 2000s maintain considerable government control over policy setting and asset ownership, while aiming to achieve value for money by implementing pay for performance models using availability payments (Siemiatycki, 2015). Based on this history, it would be expected that Canadian practitioners see PPPs within the framework of traditional or new public management approaches to governance, where there remain firm delineations between the public and private sectors and the PPP is seen as a performance based contract rather than a vehicle to govern through collaborative relationships.

Since the late 1990s the Netherlands has proven one of the most committed followers of the British Private Finance Initiative model. Similar to the Canadian context, the initial aim was to attract private investments in public infrastructures. Most PPPs in the Netherlands take place on a national level, with the PPP expertise centre of the Ministry of Finance leading the introduction of these contractual partnerships. However, it took until 2004 until a substantial number of projects were developed. In contrast to many other countries adopting PPPs, availability payments became the dominant financial arrangement in the Netherlands as existing legislation excluded the use of user payments (Koppenjan & de Jong, 2018). In response to challenges with PPPs, the highway and water management agency Rijkswaterstaat and various private parties initiated a new approach to PPPs: the so-called Marktvisie. Despite elaborate contracts, more attention should be given to developing high-trust relationships (Rijkswaterstaat, 2016). The expectation would therefore be that Dutch professionals attenuate some of the importance of contract-oriented governance mechanisms that were originally part of Dutch PPPs and carefully try to combine these with attention for trusting relationships between project partners.

Denmark has traditionally been a slow-moving country in implementing PPP projects. Only in the first part of the 2000's did PPPs make their way onto the policy agenda in Denmark. The first PPPs were realized by local governments. Officially Denmark now counts 47 PPP projects, but only 30 include private finance (Danish Competition and Consumer Authority, 2018). To date, the Danish national government has not endorsed an official PPP policy or strategy nor is there an official, specialized governmental PPP unit. Instead, it is up to ministries and local governments individually to decide if they want to go ahead with the PPP model. In consequence, each PPP is treated as a stand-alone project. Scholars have noted how PPP develop-

ment in Denmark has been marked by a variety of challenges, most of them created internally in Denmark by the government (Petersen, 2011). Nevertheless, the number of PPPs in Denmark is rising, especially in the area of social infrastructure as several Danish local governments are continuing to explore the PPP option. The expectation would therefore be that Danish professionals view PPP from a pragmatic perspective of what will work or not, and that the professionals do not have high expectations for a systematic and coherent PPP policy framework provided by the government.

2.3.2. Using Q-methodology: designing statements

Q-methodology, introduced by William Stephenson in the 1930s, is designed to analyse perceptions of individuals on a specific topic and it is increasingly used by public administration scholars (Watts & Stenner, 2012). Participants in the study (the P-set) are asked to sort a set of statements representative of the debate on a topic (the Q-set) into a distribution of their preference. From this distribution, statistically significant factors can be derived and interpreted (Watts & Stenner, 2012). Each factor distinguishes a group of individuals who have ranked the statements in a similar fashion, and thus share a similar perspective about this topic.

The Q-methodology is done according to a three-step procedure. The *first* step concerns the design of the Q-set. This set of statements can be designed using interviews, policy and media discourses, or academic discourses (Jeffares & Skelcher, 2011). In this paper we take the academic discourse as a starting point using four theoretical governance paradigms to capture the governance debates among PPP-professionals (examples are Durning & Osuna, 1994; Klijn et al., 2016[b]; Nederhand et al., 2018). The academic discourse also allows us to relate the empirical results to existing theoretical debates. The statements in our study stemming from the first three paradigms are derived, but somewhat adapted, from an earlier Q-sort study by Nederhand et al. (2018). The statements based upon the last paradigm were developed specifically for this study. All in all, a total of 24 statements were used (see Table 2.2), which should largely cover the debate on governing PPPs.

2.3.3. The P-set: The participants

The *second* step is to present the study to participants. Potential participants in Denmark and Canada were identified by an online search, using LinkedIn, news items on specific projects, and websites of organizations involved in PPPs. In the Netherlands, invitations were spread among professionals in a Dutch network of PPP practitioners to get a representative sample. Given the demographic of our P set, we decided to administer our study online using an application called POETQ (Jeffares & Dickinson, 2016). All selected professionals received an invitation to participate via email. They were also invited to forward the invitation to relevant colleagues. Besides an initial in-

Ideal type/ basic mechanism	What is steering?	Who is steering?	What does the steering mechanism look like?
Guiding principle: In public–private partnerships, it is important…	1 … to safeguard public values like equality, democracy and transparency.	5 … that political authorities play a significant role in formulating the aim and direction of the project.	9 … that impartiality and the public interest, as the most important values, come first.
	2 … to reward private consortia when they contribute to the efficient realization of policy goals.	6 … to define clear performance criteria to hold private consortia in the partnerships accountable.	10 … to establish a performance-based relationship between public and private partners.
	3 … that collaboration takes place on an equal basis between public professionals, private contractors and other relevant involved actors.	7 … for public professionals and private partners to jointly determine how to support each other during the project.	11 … to compose mutually agreed rules of behaviour so that both partners know what to expect.
	4 … that the private partner makes its own decisions on the realization of the project within the scope of the contract.	8 … that the private partner is given the opportunity to monitor its own performance.	12 …. that the private partner is responsible for the implementation of the project, assisted by public professionals where required.
Role of the public professional: The public professional must…	13 … prevent that the functioning of public–private partnerships results in unwanted situations (like exclusion, arbitrariness).	17 … keep a clear view of, and control on, what happens in public–private partnerships.	21 … check if nothing happens that might conflict with governmental policies or the requirements in the contract.
	14 … apply strict contract management and monitor the performance of the private consortium.	18 … encourage the private partner to be transparent about their performances.	22 … hold private partners accountable for delivering on the output specifications and apply sanctions if performance falls short.
	15 … guarantee the collaborative process between partners and create the right conditions to achieve synergy between them.	19 …encourage an open attitude towards intensive collaboration and consultation between partners in a public–private partnership.	23 … work together with private consortia in public–private partnerships and their partners to achieve public goals.
	16 …. not prescribe how private partners should carry out their duties within the project.	20 … remove obstacles and barriers encountered by the private partner that hinders them in doing their job.	24 … have confidence in the private partners to manage their own consortium based on their own expertise.

Table 2.2 Statement sampling grid

vitation, several reminders were sent out. On average, the response rate was 30.4 per cent. In total, 119 public and private professionals from Denmark (40), Canada (44), and the Netherlands (35) responded. The data was collected between June – September 2017 in Denmark, and from May – August 2018 in Canada and the Netherlands. There are 77 participants working for the public partner and 42 participants working for the private partner, all of them involved in PPPs, either working on actual PPP projects or

operating at a management level in organizations that deal with PPPs. Table 2.3 and 2.4 show the type of organizations and functions they work in.

Type of organization	Number of participants
Central government	36
Local or provincial government	28
Construction firm	21
Consultancy firm	9
Law firm	3
Other	21

Table 2.3 Overview of participants based on the organization they work for

Type of profession	Number of participants
Project leader	38
Private sector manager	18
Public sector manager	14
Contract manager	10
Legal manager/ advisor	8
Technical manager/ advisor	7
Financial manager/ advisor	6
Consultant	4
Other	14

Table 2.4 Overview of participants according to their profession

The *third* step concerns the sorting process. This process takes place in three stages. First, the participants were asked to state whether they agreed, disagreed, or had a more neutral viewpoint towards each of the 24 statements (which were presented in a random order). Then, the participants sorted the statements into a grid, ranging from 'most agree' (+3) to 'least agree' (-3) (see Table 2.5). Respondents had to choose between the statements, as only a limited number of statements could be placed in each pile. It is important to stress that the participants were not presented with the theoretical paradigms.

Ranking value	-3	-2	-1	0	+1	+2	+3
Number of items	2	3	4	6	4	3	2

Table 2.5 Forced-choice frequency distribution

In the third stage, participants are shown their fully sorted grid, and given the opportunity to make adjustments before confirming the order of the sorted statements. This double-check method used in the POETQ program enhances the reliability of

our findings since respondents have to check and confirm their choices. Moreover, participants were asked to reflect on their choices for statements at the extremes of the grid (-3 and +3). The vast majority of the respondents (107 out of 119) used this opportunity to clarify their choices. Finally, as an extra step regarding the robustness of the results we performed a linear regression for each profile to check whether the perceived differences, between countries and between professionals working for the public and the private partner, hold. The results can be found in Appendix IV.

2.4. RESULTS

2.4.1. Four profiles on governing public–private partnerships

The factor analysis, performed with the software package PQ-method (Schmolck & Atkinson, 2013) resulted in the extraction of four factors. For the interpretation of the factors we used factor interpretation crib sheets (for an example, see Appendix II). 55 out of the 119 participants are significantly associated with one of these factors ($p < .01$). The total explained variance of 43% is sufficient (Jeffares & Skelcher, 2011: 199). Since each factor represents a group of respondents with a certain viewpoint towards PPP governance, we refer to the factors as profiles.

Profile 1. Privatized governance within boundaries

Profile 1 has an eigenvalue of 25.15 and explains 10% of the study variance after rotation. Eleven respondents are significantly associated with this factor ($p < .01$). According to this profile, private partners should be given room in the realization of the project. The notion of 'giving room' is based upon one central idea in this viewpoint: that in PPPs risks and responsibilities are transferred from the public partner to the private partner. To deal with these risks and responsibilities private partners need the freedom to realize and manage the project (4: +2; 24: +2).[3] This implies that involvement from the public partner is undesirable. The public partners should not prescribe how private partners carry out their tasks, apply strict contract management nor keep a clear view of what happens in the project during the realization (16:+3; 14: -3; 17: -2). Professionals in this profile suggest that close involvement of the public partner might lead to transferring risks and responsibilities back to the public partner, which undermines the contractual control mechanisms. *"Not to say the public partner cannot support the private partner in a collaborative approach, as long as risk is not transferred back to the public partner."* (Respondent 10). Consequently, this profile places

3 The numbers between brackets refer to: the statement, and the position of the statement in the sorting scheme ranging from -3 to +3.

very little emphasis on close collaboration between both partners (7: 0; 19: 0; 20: -2; 23: -1) compared to other profiles. The freedom of the private partner is only limited by output specifications. If the performance criteria are met or exceeded no additional reward is given (2:-3). However, if performance falls short, sanctions should be applied (22: +3). Thus, this first profile on PPP governance allows for extensive freedom for private partners, as long as they meet the output criteria.

Profile 2. Collaboration is key

Profile 2 has an eigenvalue of 10.01 and explains 13% of the study variance after rotation. 21 respondents are significantly associated with this factor ($p < .01$). This profile places strong emphasis on collaboration. Both partners should be working together on an equal basis (3: +2). Professionals associated with this profile stress that it is important to jointly determine how to support each other (7: +3), to encourage an open attitude towards intensive collaboration (19: +3), and compose mutually agreed rules of behaviour (11: +2). In particular the long term nature of PPPs makes collaboration essential: *"Often PPPs are long term projects – most lasting 30 years. You cannot optimize efficiencies and ensure success for that amount of time without the right synergy."* (Respondent 35). Due to the long term, there are always unforeseen circumstances that require the flexibility a good collaboration provides. This might be beneficial for both public and private partners (Respondent 93, 104). With collaboration comes a certain degree of trust and confidence (24: +2). Strict control is considered less important than horizontal collaboration (17: -2; 22: -1; 14: -2). This second profile emphasizes the risks of incomplete contracts and highlights the role of strong relationships and joint action.

Profile 3. Accountability and performance

Profile 3 has an eigenvalue of 9.62 and explains 10% of the study variance after rotation. Thirteen respondents are significantly associated with this factor ($p < .01$). In this profile, professionals hold the viewpoint that PPPs should be governed as performance-based relationships in which the private partner is held accountable on the basis of clear performance criteria prescribed by the public partner (10: +3; 22: +2; 6: +3; 16: -2). For professionals, clarity is a key factor in PPP governance. There have to be clear expectations, clear rules, and clear performance criteria defining the roles of both partners in the project (Respondents 8, 23, 32). Public professionals should not control the process (17: -2). They do however have an important role: *"…the public sector has to closely monitor and enforce the contract to ensure performance"* (Respondent 23). Collaboration is possible (23: +2, 11: +2), but within the existing roles and responsibilities of each partner. It is not (only) the public partners' responsibility to realize the collaborative processes or remove barriers and obstacles for the private partner (15: -3; 20: -3). Profile 3 thus seems to put strong emphasis on clarity. Collaboration,

although possible, is considered less important than the need for performance criteria and proper monitoring by public professionals.

Profile 4. The private partner leads the way

Profile 4 has an eigenvalue of 6.49 and explains 10% of the study variance after rotation. Twelve respondents are significantly associated with this factor ($p < .01$). In this profile, PPPs are viewed as independent projects rather than as part of a broader public policy. Professionals attach limited importance to the role of political authorities and traditional public values in PPP projects (5: -1; 1: -3; 9: -2). Instead of a strong dominating government, professionals prefer managerial freedom for the private partner. They should be given responsibility and consequently make their own decisions regarding the realization of the project (16: +3; 4: +3; 12: +2). The private partner should be rewarded when they contribute to the efficient realization of policy goals (2: +2). Professionals associated with this profile argue that *"the private consortium has the experience and knowledge to do the job right"* (Respondent 22). The dominant role of the private partner does not dismiss the public partner from all responsibilities. After all, *"the ultimate project is still public."* (Respondent 20). There has to be some public oversight, and public professionals are supposed to enable private partners by removing obstacles that hinder them in doing their job (20: +2). Clearly, this profile leaves the initiative to the private partner in findings ways to organize and realize PPPs, using their expertise to do so.

2.4.2. Comparing the four perspectives

The viewpoints presented in the four profiles can be differentiated upon two relevant dimensions: the most prominent governance mechanism on the one hand, and the degree of managerial freedom for the private partner on the other hand (see Figure 2.1).

Professionals associated with profile one and profile three attach most importance to the accountability of the private partner and suggest that the public partner should enforce some form of control. This is especially the case in profile three. The biggest difference between these profiles lies in the managerial freedom given to the private partner during the construction of the project. This managerial freedom is valued most by professionals associated with profile one and profile four. The latter viewpoint emphasizes the expertise and managerial freedom of private partners most of all profiles. In contrast to profile one, this profile attaches less value to control and accountability. Instead, public professionals are considered enablers, helping private partners to overcome barriers that hinder them in doing their job. This collaborative attitude resonates most with the professionals associated with profile two. In this profile PPPs are viewed as horizontal partnership relations between partners. In neither

of the four profiles, statements regarding traditional public administration are highly valued. On average, these statements score low in almost every profile.

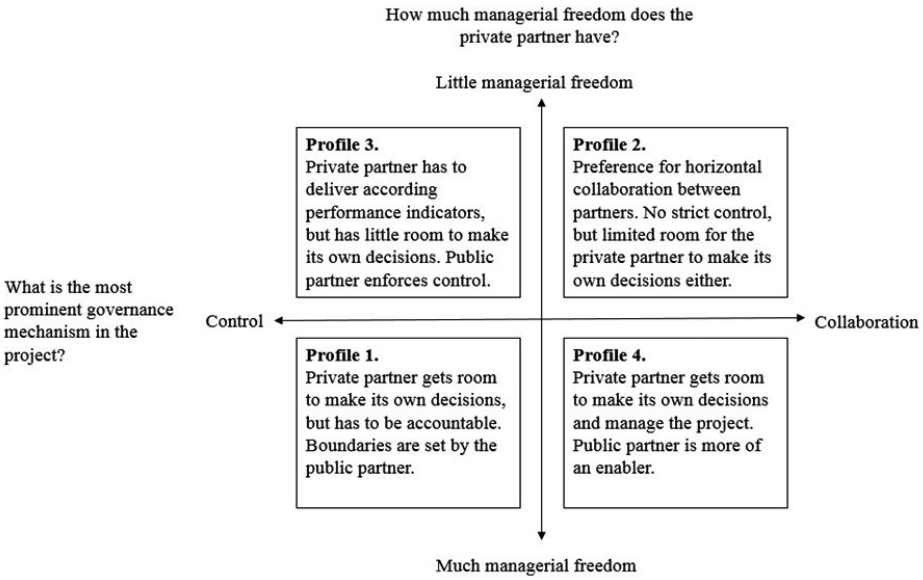

Figure 2.1 Differences between the four profiles.

2.4.3. Variation across country, project partner, and levels of experience

To explain the viewpoints of PPP professionals, we have run a separate analysis per country (see Appendix III) and a linear regression for each of the profiles resulting from the analysis presented above (see Appendix IV). Before turning to the results of the additional analysis, we stress that in each profile a mix of professionals from different countries, with different backgrounds, and different levels of experience is present. A profile therefore cannot be attributed to a single country. Instead, within each country PPP professionals may hold different views towards the governance of PPPs.

However, the results of the additional analysis show that some viewpoints are more dominant in one country than in another. These differences can be explained rather well on the basis of earlier research scholars have done on PPP in the different countries and on the country's administrative traditions. For example, the professionals from Canada are often associated with profile three, in which a performance-based relationship is valued. The preference for this mode of governance might be explained by the publics' expectation that governments are responsible for maintaining the public interest, resulting in a reticence for governments to fully relinquish control. The regression analyses show that their Dutch ($p < .05$) and Danish colleagues ($p < .01$)

are significantly less associated with this profile than the Canadian professionals. In comparison the Dutch professionals in this study are significantly more likely to be associated with profile two ($p < .001$) and prefer a collaborative form of governance. This aligns with the strong Dutch administrative tradition of compromise and horizontal working-relationships. This discourse is also reflected in recent developments like the Marktvisie (Rijkswaterstaat, 2016). Although the notion of collaboration seems dominant, a separate analysis of the viewpoints of Dutch professionals shows several Dutch professionals who share the viewpoints of the other three profiles. Finally, compared to their Dutch and Canadian colleagues the viewpoints represented by profile four are significantly more likely to adhere to professionals in Denmark ($p < 0.01$). An explanation for this preference might be that, due to the lack of a clear PPP policy, the government's role in Denmark is one of confusion and incoherence. Therefore, it might be preferable to leave it to the professionals, and especially the more experienced private partner as local governments rarely have multiple PPP projects and thus limited experience. Regarding the first profile, the country has no significant effect on professionals' viewpoints.

The regression analyses also show some differences between public and private professionals. Again, both can be found in all four profiles, but private partners are significantly more positive about collaboration (profile two; $p < .05$) and managerial freedom (profile four; $p < .01$). There is also a negative correlation between professionals working in the private sector and the preference for profile one ($p < .05$). When it comes to the third profile, there are no significant differences between public and private professionals. Finally, differences related to experience only occur in the fourth profile. Experienced professionals are more positive about managerial freedom for the private partner compared to relatively unexperienced professionals ($p < .05$). This makes sense as experience will allow professionals to grow more comfortable with doing PPPs. Experienced private partners might feel more comfortable taking the lead, while experienced public professionals might have greater willingness to give them the lead. The full results of the regression analyses can be found in Appendix IV.

2.5. CONCLUSIONS

This article contributes to more insight in the nature of the diverging governance expectations among actors involved in PPP governance setting. Using Q-methodology this study shows that professionals hold different viewpoints on the governance of PPPs. Finding the right governance form to deal with complexities might be difficult for practitioners. Certainly because, as Van den Hurk and Verhoest (2015) state, PPP governance should be contingent in order to be effective (2015: 209). The profes-

sionals prioritize elements of the governance relationship in PPPs differently. Even though all respondents value clear performance indicators, mutually agreed rules of behaviour, and the opportunity for private partners to manage their own consortium to some extent, the priority given to these statements varies significantly. One shared viewpoint on PPP governance is that PPP professionals consider less the questions of safeguarding public values and the involvement of political authorities. Professionals indicate that politicians may determine the scope of the project in the early stages, but political influence during the realization of the project is seen as undesirable, as politics may be unpredictable, short term minded, and cause uncertainty to the project. PPP professionals are firmly focused on the project level (see the different levels of PPP in Greve & Hodge, 2013: 4), rather than considering PPPs as policy or governance style. This may be quite natural for them, as they are involved in the implementation of specific PPP projects and might not have time or energy to focus on the broader institutional level.

Given the international character of the PPP phenomenon, the professionals participating in this study were considered part of one community. Therefore, one overall analysis was performed. To a degree, the idea of an international PPP community holds, as most perspectives can be found in all countries. Differences only partially align with positions, domains, and countries. The international discourse on PPP seems to work out only slightly different in each country. Professionals in Canada, which is traditionally more oriented towards the Anglo Saxon tradition where NPM fits better, are more likely to embrace the idea that PPPs should be governed as performance-based relationships. In contrast, Dutch professionals are more likely to value close collaboration. One can clearly see the Dutch political culture of consensus (Hendriks & Toonen, 2001) but also the recent focus on trust and joint responsibility, in the PPP discourse (see Rijkswaterstaat, 2016). Danish professionals seem to attach most value to managerial freedom for the private partner. This viewpoint may result from the less explicit position of the Danish national government towards PPP compared to Canada and The Netherlands. So, there are some differences between professionals from different countries, but each of the four factors in our analysis still included a diverse group of practitioners. This means that the preferences of professionals are hard to predict and not solvable in advance.

Reflecting on how our findings impact upon theory, three lessons can be drawn. First, our empirical findings show that governance ideas of practitioners are of a hybrid nature, combining features of various paradigms. Even though, at first glance, the four profiles seem to resemble the theoretical governance paradigms, a closer look shows something different. For example, the traditional public administration model is almost absent in the viewpoints of PPP professionals. Furthermore, the first profile presents a mix of ideas stemming from New Public Management and

privatized governance. The third profile resembles many of the main NPM features. However, statements suggesting strict control are not preferred by these professionals, even though this is one of the core ideas in NPM. Thus, our study shows that the viewpoints of practitioners do not neatly follow the delineations and logics of the theoretical paradigms as we derived them from the literature. Not all theoretical paradigms are present in practice, and the perceptions of PPP professionals consist of hybrid ideas on PPP governance. Moreover, different hybrid viewpoints regarding PPP governance exist among PPP professionals. In several of the hybrid viewpoints, professionals often seem to combine NPM like features with collaborative governance features. In many theoretical contributions these two paradigms are presented as very distinct, but perhaps we have to reconsider and look at their similarities or at ways how they can be combined. Confirming PPP as a hybrid governance arrangement, this study presents interesting results on how theoretical paradigms are combined in practice. This may also inspire theorizing: where theoretical contributions for instance emphasize the different governance paradigms, we might focus more on the theoretical implications of hybrid arrangements that combine features of various paradigms (Quélin et al., 2017). Second, our research shows that country, level of experience, and the public-private distinction make a difference for the viewpoints of professionals. This is a confirmation that governance ideas and governance modes are dependent on country characteristics (Skelcher et al., 2011). Finally, our study confirms earlier work regarding de-politicization and the technocratic character of PPPs (e.g. Willems & Van Dooren, 2016). PPP professionals seem to struggle with politics and strong control exercised by politicians. This points towards an interesting research agenda: how are politics included in new governance arrangements like PPPs? It raises the question how the democratic legitimacy of these new governance arrangements can be enhanced?

The practical consequences of our findings can be several. The main implication is that, as the viewpoints of professionals may vary significantly, their preferences are hard to predict. It also means that professionals with different viewpoints regarding PPP governance might work in the same project, which could result in potential misunderstanding, disagreement, and even conflict. Therefore, when implementing PPPs, one has to be aware of the viewpoints and potential differences between these viewpoints, since these differences can frustrate the forming and implementation of PPP projects. Knowledge of the differences between professionals and their governance preferences can also foster a dialogue about those differences at the start of a project which helps to clarify expectations of professionals on how to govern PPPs, and if necessary, discuss (process) rules to deal with them. Dialogue within these projects is necessary to prevent misunderstanding, align expectations on governing the project, and thus contribute to successful PPP performance.

Limitations and suggestions for further research

Our results have to be interpreted with care, since only 55 out of 119 respondents are associated with one of the factors. This is an important limitation in our study. The use of theory to design the statements might pose a risk in this respect, as we might miss part of the debate among professionals that is not reflected by the theoretical paradigms. However, the biggest issue regarding these factor loadings is the relatively low number of statements respondents had to sort. With 24 statements to sort, a respondent is significantly associated with a profile if the factor loading is 0.53 or higher (Watts & Stenner, 2012). This greatly reduces the number of respondents that load on a factor (with a significance of $p < .01$). Adding more statements might have prevented this, but this makes it increasingly difficult for respondents to sort the statements, weigh their positions against each other, and argue convincingly which statements they agree with most and least. As some respondents already indicated that they found it challenging to rank 24 statements and given the fact that the explained variance of the study was sufficient, we would not opt for a larger number of statements. Instead, to deal with these factor loadings we would suggest pre-testing the statements to make sure that these statements cover the entire debate on the topic and resonate with the target group. If the statements are well designed, cover the debate, and are recognizable by the participants, this should allow research to have sufficiently explained variance without increasing the number of statements beyond the point where respondents struggle to explain their sorting of the statements.

Further research on PPP governance could follow up on the results found in this study with regard to the differences between professionals' viewpoints in an attempt to better explain and understand differences between the viewpoints of PPP professionals. After all, our study indicates that the public–private distinction, country, and experience do not fully explain the differences between professionals' viewpoints. For example, more international comparative research and widening the set of countries with different administrative traditions (e.g. Southern European or Asian countries) might prove useful in this respect. Other potential explanatory factors should also be included in future research. These could include, but are not limited to, the complexity of PPP projects, the background of the professional, and the different types of PPP projects professionals are working on. Furthermore, the different governance perceptions of professionals may pose a risk in PPP projects, potentially leading to misunderstandings and miscommunication. Further research might focus on how partners in PPP projects deal with the different expectations and perceptions of professionals regarding the governance of PPPs and try to align the viewpoints of professionals working in these projects. Finally, the results of this study may inspire further research into unravelling the implications of differences in governance perceptions among professionals, for example by addressing the relationship between governance

perspectives and PPP performance. To what degree do conflicting viewpoints of professionals on PPP governance have an impact on the projects' performance?

INTERMEZZO 2.

The previous chapter shows that professionals have different preferences regarding the governance of public–private partnerships. Some prefer contractual governance mechanisms and align their governance preferences with the juridical (contractual) form of the partnership. Others prefer a more collaborative way of working, resulting in more relational governance mechanisms to govern the partnership. The suggestions that public and private partners in PPPs might be willing to work together in a more horizontal, collaborative way, turns our focus to the role of social relationships. Compared to the attention for more formal and contract-based forms of governance, the attention for soft and informal governance mechanisms is lacking behind (Verweij, 2018; Weihe, 2009). Besides formal and contractual relationships, informal social relationships exist between the organizations and professionals collaborating in public–private partnerships. What do we know about these social relationships between public and private partners? What is the quality of the relationship between project partners? Relational quality is not an often used concept in PPP research, but nevertheless it is relevant to know more about the quality of the relationship between project partners, in particular if it is to be used in the governance of PPPs. To enhance our understanding of relational quality in PPP, this idea needs to be further conceptualized and operationalized. Chapter 3 of this dissertation addresses this lacuna. It aims to provide more insight into the social relationships in PPPs by conducting a systematic literature review on relational quality in PPPs. If offers an overview of existing knowledge on this topic to present a conceptualization of the concept which can be used in further research into relational quality of public–private partnerships.

Chapter 3

Relational quality in public–private partnerships: understanding social relationships in contract-based exchanges.

This chapter has been submitted to an international peer-reviewed journal

ABSTRACT

In order to explain the performance of public–private partnerships (PPPs), relational aspects play a promising role. Yet despite attention for this topic in closely related fields of study, such as alliance research and collaborative governance, the attention for the quality of the relationships in PPPs is still limited. To understand how relational quality in PPPs can be defined and how it might affect the performance of such partnerships, this article brings together academic research on relational aspects in PPPs. 62 articles were analysed, based on the following themes: the definition of social relationships between partners in PPP projects, the characteristics of these relationships, its antecedents, and the effects relational aspects may have on PPPs. The analysis shows significant conceptual vagueness regarding this topic, and complex and reciprocal relations between the main features of the concept. Based upon this analysis an integrative framework on relational quality in PPPs is developed, which can be used for further research.

3.1. INTRODUCTION

Public–private partnerships (PPPs) are globally popular as a means of realizing public products and services. The opportunity to share costs, benefits and risks, and its potential for innovation, collaboration, and efficient service delivery has led to extensive use of PPPs in many countries. Although these partnerships are often based on elaborated contracts, several scholars highlight the importance of relational aspects between public and private actors for the success of these projects (e.g. Huxham & Vangen, 2000; Weihe, 2009). Empirical evidence for the importance of relational aspects is provided in several studies (e.g. Edelenbos et al., 2007; Warsen et al., 2018). Contracting in these projects tends to be incomplete, as it is unable to capture the full complexity of the project or take into account all potential events and issues in the long-term of PPP projects (Brown et al., 2016). Relational aspects are than necessary to provide flexibility to deal with complexity and unexpected circumstances (Roehrich & Lewis, 2014).

The conclusion that relational aspects are important for successful PPPs seems obvious, but most scholarly attention still goes to contractual aspects of PPPs. This comes at the expense of relational and collaborative aspects of these partnerships (Van den Hurk & Verweij, 2017). Several scholars argue that the attention for these relational aspects in research is limited, both for PPPs (Weihe, 2009; Van den Hurk & Verweij, 2017) as well as for public–private collaborations in a more general sense (see for example Gerard & O'Leary, 2018). Perhaps due to the lack of research, the notion of relational quality between partners in PPP is not very well developed. Therefore, it remains unclear what exactly we mean with 'good relationships' between partners in PPP projects, and consequently also how to operationalize and study this concept.

This study, using a systematic review of journal articles between 1990 and 2016, aims to contribute to our knowledge of relational aspects in PPPs by clarifying what 'good relationships' in these projects mean. In order to properly understand the concept, this article studies the different characteristics of relational quality between partners in PPPs. Furthermore, we focus on the antecedents that improve the quality of the relationship between partners and the potential effects of relational aspects are studied. To further develop the concept of relational quality in PPPs, these three elements are combined into one comprehensive framework which can be tested and used in further research. The study offers insights and lessons from different fields of study. To better understand relational quality in PPPs, we focus on the following research question: *What do we know about the antecedents, characteristics and outcomes of relational quality in public–private partnerships?* The focus on relational aspects makes this review stand out from other literature reviews on PPPs published in recent years (see for example Osei-Kyei & Chan, 2015; Wang et al., 2018).

The remainder of this article is divided in four parts. First, the method used to select relevant publications is described. Second, the result section consists of five parts

discussing respectively characteristics of the records found, definitions used, and then turns to the characteristics, antecedents, and outcomes of relational quality in PPPs. Part three proposes a framework to study relational quality. Finally, part four offers some conclusive remarks and ideas for further research.

3.2. METHODOLOGY

This review focuses on international peer-reviewed scientific articles between 1990 and 2016 that study either specific relational aspects or incorporate topics like relational governance in their study of public–private partnerships. The selection of these articles was done systematically according to the PRISMA approach (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) (see Moher et al., 2009), which will be further discussed in this section.

Search terms	Search terms
Public-private partnership*	Design build finance maintain operate
Public-private	DBFM
Private finance initiative	DBFMO
PFI	Build-Operate-Transfer
PPP	Build operate transfer
Design build finance maintain	BOT
Design-build-finance-maintain	3P
Design-build-finance-maintain-operate	P3

Table 3.1 Search terms used in the literature search

3.2.1. Literature search

To find all possible eligible studies for this review, an electronic search was done in two databases, namely Web of Science and Scopus. The electronic search was based upon a variety of search terms that all refer to public–private partnerships. Besides generally accepted terms such as PPP and public–private partnership the search terms include different types of PPPs, like design-build-finance-maintain and abbreviations like DBFM, PFI, and 3P. This broad list of search terms reduces the change of overlooking relevant publications. Moreover, the list of search terms was cross-checked by looking into previous literature reviews on PPPs (e.g. Osei-Kyei & Chan, 2015) to prevent the overlooking of any useful search terms. This resulted in a list of sixteen search terms (see Table 3.1). There were no search terms included that refer to relational quality or relational aspects, as the word [relation*] would result in all kinds of relationships (or correlations) between variables. This was dealt with manually in the process of selecting relevant studies.

3.2.2. Eligibility criteria

To decide which publications should be included in the review, some basic process criteria were applied. These included:

- Year of publication - All PPP publications from January 1990 to October 2016 were retrieved. The introduction of the Private Finance Initiative (PFI) in the early 1990s in the UK is used as a starting point. Over the years other countries adopted and adapted this form of PPP. Academic interest has followed this rising interest in PPPs (Li et al., 2005). By taking 1990 as a starting point the exclusion of early publications on public–private partnerships is prevented.
- Language – Only studies written in English were considered for this review.
- Publication Status – Only peer-review journal articles were selected.
- Field of study – Since PPP is a multidisciplinary topic, this review includes publications from different fields of study who have shown an interest in PPPs and may provide insights in the relationships between public and private actors in PPP projects. These fields of study include project management, business administration, transport and engineering, and public administration.
- Finally, with regard to the design of the studies both theoretical and empirical publications are considered. Theoretical articles may explain the nature of the relationship and help conceptualize the notion of relational quality while empirical studies may provide evidence on the antecedents and outcomes of 'good relationships' in PPPs. Existing literature reviews on PPPs are excluded, but their references can be used to retrieve additional relevant publications about relational aspects in PPPs.

3.2.3. Study selection

A first search in November 2016 in both search engines with all search terms resulted in more than 130,000 hits. After the application of the above mentioned eligibility criteria and the removal of duplicates – using the Refworks citation manager – 15,079 articles remained. Given the high number of potentially useful articles, no other search strategies, such as the inclusion of academic books about public–private partnerships, were included. The articles were all screened by title and abstract in two rounds based on three substantive criteria. In the first round all articles that did not focus on public–private partnerships were removed. This included articles that used abbreviations (PPP, BOT) from our original search term, but attributed a different meaning to these abbreviations[4]. This also applied to studies that made mention of

4 This included for example articles using the term BOT (computer sciences) or PPP (Power Purchasing Parity, a term frequently used in economics).

PPPs but did not elaborate on this topic any further[5]. In the second round the remaining articles were screened based on the focus of the article. Articles studying PPPs with for example a technical or financial point of view were excluded. Only articles with an administrative, management or process-oriented approach are included in the review. Finally, the remaining publications (n= 91) were screened by full reading the text to determine whether they provide any information on relational aspects or relational quality of PPPs. In total 62 articles remained and are included in the review. These articles were analysed using a data extraction form to record both general data (e.g. author, publication year, and journal) and more specific data (e.g. research question, relational aspects studied, and outcomes of the study).

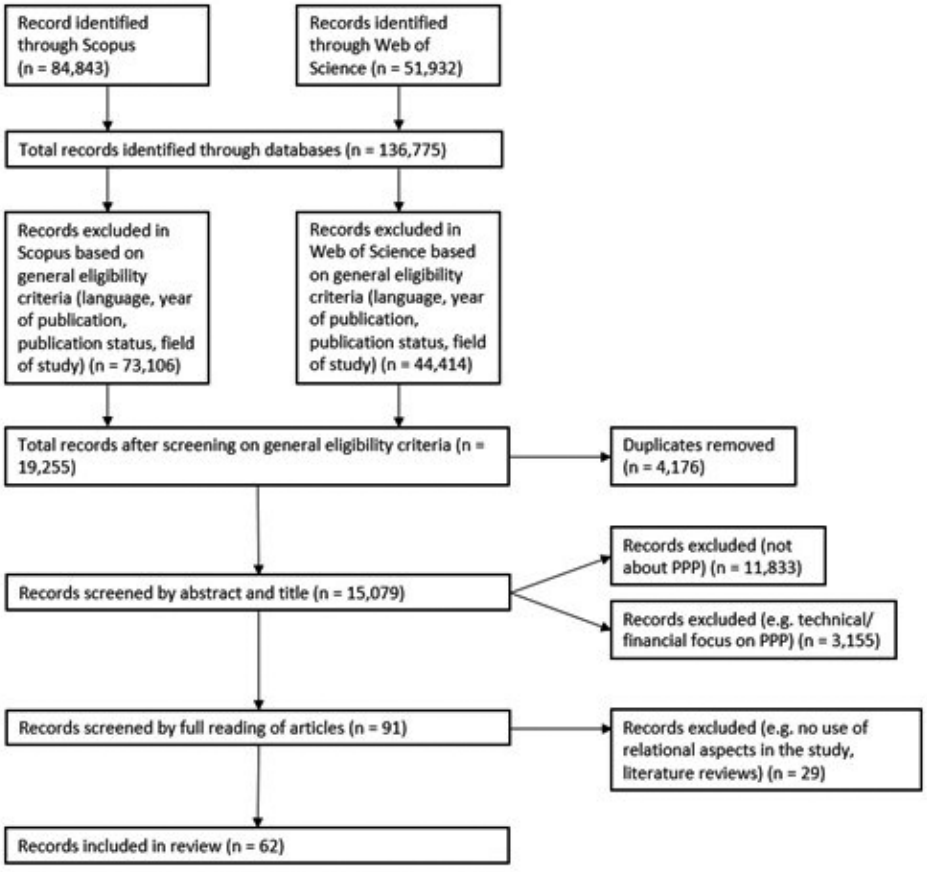

Figure 3.1 Prisma flow diagram

5 This for example applies to studies in health sciences, where reference to public–private partnerships was included just to point out the sort of model that was used in establishing the project. However, no further reference was made to the concept, nor was it central in the article.

3.3. RESULTS

3.3.1. Characteristics of the records found

The articles included in the review are published quite recently (see Figure 3.2). The majority of the articles is published since 2010. The limited number of publications discussing relational aspects in PPPs in earlier years is not very surprising. Guðrið Weihe (2009) noticed in her PhD thesis that up until 2009 the attention for relational aspects was relatively limited. The increase in articles in recent years might indicate that the scientific attention for the quality of the relationship between public and private actors in PPPs is growing, but the raising number of articles also fits within a general trend of a rapidly growing number of publications studying PPPs (Ke et al., 2009; de Castro e Silva Neto et al., 2016).

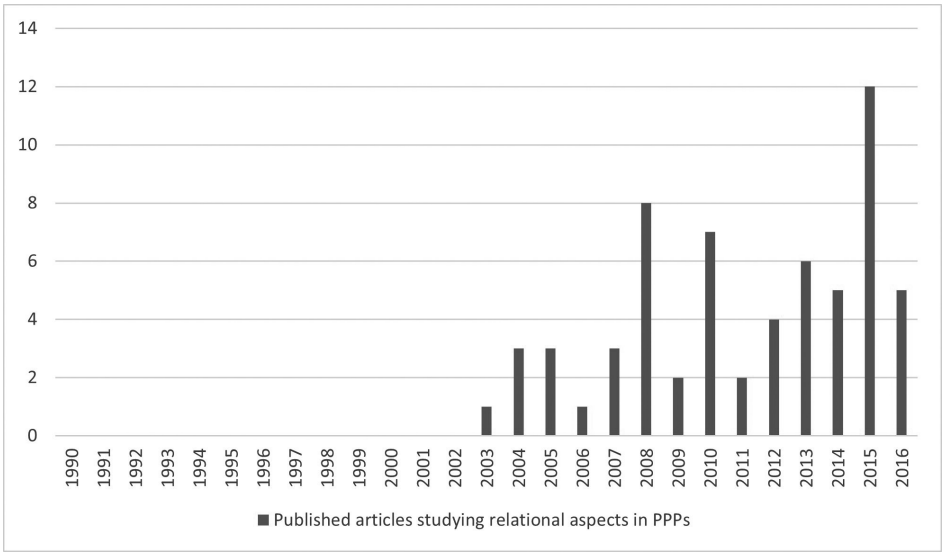

Figure 3.2 Published studies on relational aspects in PPPs over time

The publications present cases from a variety of countries, including countries that are early adopters, such as the UK, Australia, and Canada as well as developing countries that have adopted the use of PPPs in more recent years, like China, Jordan, and Malaysia (for a full overview see Appendix V). Most often studied are the UK, China, Australia, the USA, and the Netherlands (see Figure 3.3).

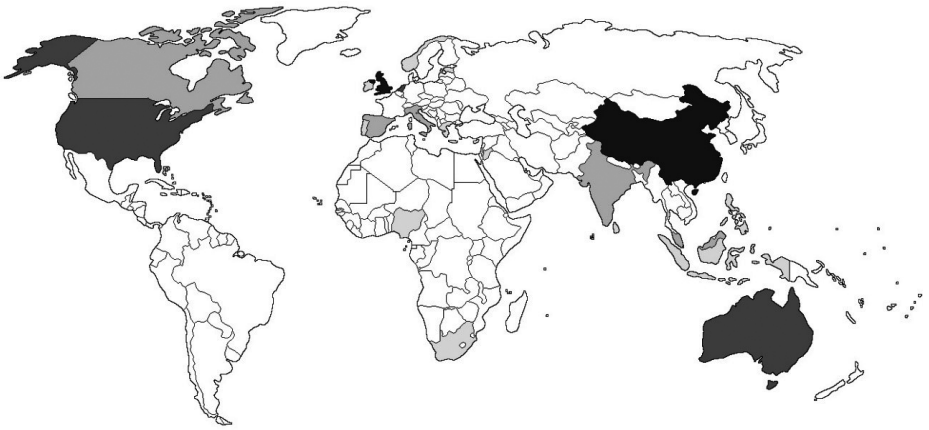

Figure 3.3 Distribution of cases over countries

The 62 articles are published in 48 different journals (see Appendix V for a full overview). More than one-third of the articles (19) is published in the field of Management and Organizational Science. The other studies are published predominantly in Public Administration journals (20), Business, Finance and Accounting (9), and Construction and Engineering (7). This broad range of journals indicates that the interest in relational aspects of PPPs is not limited to one research area. It also results in the use of different theoretical approaches. Most frequently used are economic theories, including the transaction cost theory and (relational) contracting theories to explain how the exchange relationship between public and private partners takes shape. From an organizational and public management perspective literature on inter-organizational relationships, collaborative governance, and alliance research often emphasizes the value of relational aspects in exchange relationships. Alliance literature for example researches many of the features affiliated with relationships in PPPs, such as trust and partnership processes. Other literature emphasizing relational aspects are for example relational marketing theories and social exchange theory. These different streams of literature may contribute to the development of the concept of relational quality in PPPs in this article. A fairly large share of the articles does not apply specific theories in their study but describes merely existing PPP literature.

The studies included in this review use mainly qualitative research methods, in particular case studies. Other methods include for example a survey or a mixed method approach in which a survey is combined with additional interviews or a qualitative case study (see Figure 3.4). The type of projects studied varies. Next to transport (9) and social (8) infrastructure projects, there are several area development projects (5). Many cases stem from specific policy areas (18) including water, safety, ICT, health care, and waste management.

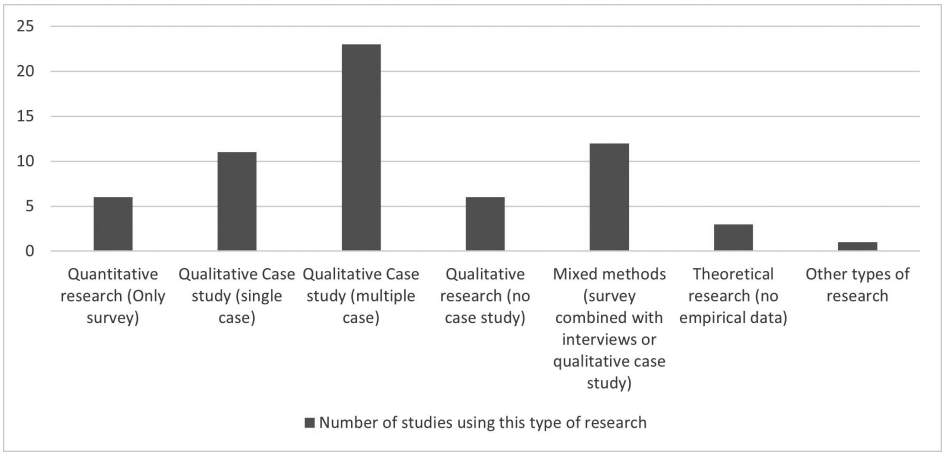

Figure 3.4 Used research methods

All in all, the records included in the analysis show an increasing attention for relational aspects in PPPs. This fits with the growing number of publications on PPPs in general. The attention for PPPs comes from different fields of study, resulting in the use of different literatures. However, in several articles no specific theory has been used. Methodically, the research on relational aspects in PPPs leaves room for further development as most articles are based on qualitative case studies.

3.3.2. Definitions: understanding relationships in PPPs

The articles included in this review are rather unanimous in their verdict that relational aspects are quite important in PPPs (e.g. Alam et al., 2014; Kumaraswamy et al., 2015). Because of the shortcomings of contracts to structure partnerships, good relationships between partners are often seen as the road to successful PPPs. Nevertheless, although authors agree on the importance of relationships between public and private partners in PPPs, defining and conceptualizing the relationship remains a challenge. Therefore, the following section will elaborate on how to understand these relationships between partners. What do we mean with 'good relationships'?

Most of the selected publications struggle to provide a clear definition of relational quality. Only in a few studies scholars define what they mean by good relationships, often by providing some defining characteristics of these relationships. Jones and Noble (2008: 111) for example define relationships as *"strong personal and emotional bonds based on mutual trust, commitment, and respect."* Bonds between people can take different forms. Especially formal and informal bonds are often positioned as opposites, with formal bonds referring to contractual agreements structuring the partnership and informal relationships suggesting a more social connotation, focusing on social norms and relational aspects like in the work of Jones and Noble (2008) (see also Gaz-

ley, 2008; Alam et al., 2014;). Instead of posing them as opposites, formal and informal aspects should be considered different sides of the same coin (e.g. Kumaraswamy et al., 2015). Several studies have shown that formal contracts and relational governance are complements rather than substitutes (Poppo & Zenger, 2002; Parker & Hartley, 2003). Both can be present simultaneously in PPPs. Although this article highlights the social side of these bonds, often these relational aspects take shape within a formal, contractual context.

As the definition of Jones and Noble (2008) already indicates, the publications in the review emphasize the social nature of the relationship, frequently using adjectives defining relationships as trusting relationships (e.g. Gazley, 2008; Reeves, 2008), 'partnership relations' (e.g. Domingues & Zlatkovic, 2015; Roberts & Siemiatycki, 2015), or 'social' or 'socially embedded' relationships (e.g. English & Baxter, 2010; Zhang & Jia, 2010). The focus on the social character of the relationship is in line with the Social Exchange Theory, which defines relationships as social bonds between actors that result from interactions between the actors. Cropanzano and Mitchell (2005), who acknowledge the theoretical vagueness of the concept, call this relationships-as-interpersonal attachments. One of the defining key factors in these relationships is the notion of reciprocity (see for example Gouldner, 1960). The notion of reciprocity implies a social norm, namely the expectation that people will respond to each other in similar ways (Gouldner, 1960; Cropanzano & Mitchell, 2005). This social norm governs the exchange between actors. Furthermore, scholars indicate that the relationships between partners are not 'a one-time only affair' (Edelenbos & Klijn, 2007) but have a long term character (e.g. Parker & Hartley, 2003; Bergmann & Bliss, 2004). These social, reciprocal, and long-term bonds may exist on different levels. First, the relationship can be considered a personal relationship between individual professionals working together on the project (e.g. Gazley, 2010; Roehrich & Lewis, 2014). Other scholars focus more on relationships on an inter-organizational level (MacDonals, 2012; Panda, 2016). Roehrich and Lewis (2014) show how both relationships might matter in inter-organizational collaborative processes. In their research, they find that inter-personal trust plays an important role in PPP success. Therefore, this article focuses on inter-personal relationships. However, inter-personal trust is very dependent on individuals and may reduce if individuals leave the project. The long term of many PPP projects advocates for a focus on inter-organizational relationships, as individuals rarely stay long enough to see it through. Inter-organizational trust is less dependent on the continuous involvement of specific individuals. So, to maintain inter-personal relationships among contracting parties, inter-personal trust should be translated into inter-organizational frameworks (Roehrich & Lewis, 2014). In PPP projects both levels are present and interact with each other. Individual professionals play an important role as they interact with each other to realize the project, but

they are simultaneously influenced by the organizations they represent, for example through the organizational culture or the organizational goals they are supposed to realize within the project. Therefore, the impact of the organization is included in the framework presented later in this article. So, when discussing relational quality in PPPs, relationships can be defined as social, long-term, and reciprocal inter-personal ties between professionals working on a project. They can, however, be affected by the organizations these professionals represent.

The review shows that this notion of relationships is closely related to concepts such as 'collaboration' and 'social capital'. Collaboration seems strongly intertwined with the notion of relational quality (e.g. Jones & Noble, 2008; MacDonald, 2012; Alam et al., 2014). Bergmann and Bliss (2004) for example state that cooperation can help build trust, and simultaneously claim that trusting relationships are prerequisites for cooperation. This runs the risk of tautology, but it also points towards an iterative, and mutually reinforcing effect between these phenomena. Collaboration, defined as the process of multiple people or organizations working together to achieve something, is a form of action and interaction by and between project partners. Relational quality, in contrast, is not an act (-ion) performed by people. Instead it is a state of attachment. Admittedly, it is dynamic, may change over time, and can be influenced by actions of project partners, such as the way they collaborate. Conversely, high-quality relationships may reduce transaction costs and increase the willingness of partners to invest in the collaboration. So, although a strong correlation between collaboration and relational quality is to be expected, they are not the same. Furthermore, relational quality is also related to the notion of social capital. Social capital refers to the capacity of individuals to mobilize their social resources, such as relationships and social networks, norms and trust, to gain access the resources embedded in these networks (Putnam, 1995; Lin, 2001). Social capital provides strategic benefits (Szeretz & Woolcock, 2004). In PPPs, the access to resources in the network is already established through contracts. The relationship between partners in PPPs however may still provide strategic advantages if the project encounters issues in later phases. High-quality social relationships can be considered part of social capital, but social capital consists of more than one-on-one relationships as it focuses on the entire social network of individuals.

As stated earlier in this section, most articles focus on the importance of 'good' relationships (e.g. Zou et al., 2014; Kumaraswamy et al., 2015). However, this also implies that the opposite is possible. If relationships can be good, they can also be not-so-good, or downright bad. Although the attention for bad relationships is not so prominent, there are a few articles focusing on it (e.g. Edelenbos & Klijn, 2007; House, 2016; Panda, 2016). The description of relationships in positive and negative terms indicates that the use of the concept 'relational quality' is justified. After all, it is not

just about the existence of relationships, but also about the quality of these relationships. The concept of relational quality is particularly well-known in the Relationship Marketing literature, where the quality of the relationship between salespersons and customers determines the likelihood of continued exchange between those actors in the future (Crosby et al., 1990; Grönroos, 1994).

3.3.3. Antecedents, characteristics, and outcomes of relational quality

In this section, the notion of relational quality in PPPs will be studied in more detail. Based upon the review the most prominent characteristics of relational quality in PPP, its main antecedents, and the potential effects of good relationships in PPP projects are determined. Analysis of all publications in the review learns that some characteristics of social relationships are closely intertwined and mutually reinforce each other. Several concepts are mentioned both as characteristic and as antecedent of social relationships in PPP projects. For example, communication leads to higher levels of trust (Edelenbos & Klijn, 2007; Cook, 2010) and commitment (Domingues & Zlatkovic, 2015; Wong et al., 2015). However, trust increases commitment (Edelenbos & Klijn, 2007) and the willingness to exchange information (Barretta et al., 2008; Abdul-Aziz & Kassim, 2011). This again has a positive effect on the communication between partners. Clearly, the relations among these characteristics are reciprocal, dynamic, and difficult to disentangle (see also Lubell, 2007). To prevent conceptual confusion and vagueness, in this article each concept is included in only one category: either as a characteristic or an antecedent of relational quality.

Characteristics of social relationships in PPP projects

The 62 articles referring to relational quality in PPPs suggest many different features of social relationships in PPP projects (for a full overview see Appendix VI). Here we only discuss the characteristics (see Table 3.2) that are either among the most frequently cited or the characteristics that are supported by established theories like relationship marketing or social exchange theory.

Characteristics	Number of articles mentioning it
(Mutual) trust	52
Commitment	31
Communication	26
Respect	9
Openness	9
Fairness	6

Table 3.2 Characteristics of social relationships in PPP projects

The core element of social relationships between partners in PPP projects is trust. This is the most frequently cited characteristic in the articles. Trust, which is formed in social interaction, is seen as essential for high-quality social relationships (Appuhami et al., 2011). Some scholars use it as a proxy for the relationships between partners (Smyth & Edkins, 2007; Zheng et al., 2008; Roehrich & Lewis, 2014). Others consider trust – in line with the transaction cost economics theory – to be an informal control mechanism to mitigate opportunistic behaviour (Argento & Peda, 2015). Either way, trust is considered crucial in building and maintaining good social relationships (e.g. Alam et al., 2014). Although important, trust is not an unambiguous concept as it may refer to different types of trust, like process-based trust (Edelenbos & Klijn, 2007), competence-based trust, and goodwill trust (Barretta et al., 2008). Several theories acknowledge the important role of trust when it comes to relational quality. Although trust was originally not included in transaction cost economics, trust is capable of reducing transaction costs (Bromiley & Cummings, 1995). Socio-legal theorists have illuminated how informal mechanisms, such as trust, can be used to supplement formal contracting resulting in the emerging of relational contracting (e.g. Vincent-Jones & Harries, 1995; see also: Reeves, 2008). Social exchange theory emphasizes the reciprocal character of trust. First, trust is developed as a result of the reciprocal exchanges central in social exchange theory (Cropanzano & Mitchell, 2005). Secondly, trust relationships have the potential to become ever stronger, and that potential is fostered in reciprocal exchanges (Cropanzano & Mitchell, 2005: 890).

Along with the notion of trust, commitment is another frequently cited characteristic of social relationships in PPPs. Commitment, defined as the state of being dedicated to a certain cause, is considered one of the fundamental principles in a partnership (Jacobson & Ok, 2008). The social relationship between partners grows stronger if both partners are committed to that relationship, which implies a willingness to invest in the relationship. Extra investments, that might not be necessary from a formal, contractual point of view, can be made to uphold a good relationship between partners. Commitment is also key in relationship marketing theory (see for example Crosby et al., 1990). Payne et al. (1995) state that trust and commitment are fundamental principles determining the relational quality in business-customer relationships (Payne et al. 1995). Morgan and Hunt (1994) attach an even greater importance to the notion of commitment by suggesting that commitment reflects the attachment of a person to the relationship, project, or organization, and implies a desire to maintain this relationship (Morgan & Hunt, 1994). Considering Cropanzano and Mitchells' notion of relationships-as-interpersonal attachments (2015), commitment clearly is an important characteristic of social relationships.

Thirdly, inter-personal social relationships in PPPs are characterized by respect and openness. Respect can be defined as due regard for the feelings, wishes, and rights of

others. Respect for each other's opinions and feelings make people feel appreciated. A lack of respect might hurt people's feelings and damage the bond between partners. Ghauri and Rios (2016) describe respect as a non-economic, psychological aspect of any relationship (2016: 137). Empirical evidence indicating the importance of respect show that this aspect of relationships fosters the collaborative process in partnerships (Alam et al., 2014). Openness, which can be considered a lack of secrecy, is another important characteristic of social relationships as it may help the building of trust and confidence in the partnership (Kumaraswamy et al., 2015). Openness helps partners to get to know each other better. Moreover, openness is key in communication.

This leads us to the last important characteristic. Communication can be defined as providing or exchanging information, for example by speaking or writing. To speak of social relationships between individuals some form of communication is required. It is used to share ideas, gain insight into the partners' interests and motives, and to convey norms and values. This is in line with the social capital theory, which presumes that the more individuals connect with other people, the more we trust them, and vice versa (Putnam, 1995). The form of communication also matters. Cook (2010: 232) states that *"face-to-face interaction can offer a more personal and sometimes more convenient form of communication. […] this facilitates rapid responses and can lead to a greater degree of trust and reciprocity."* Besides the form of communication, I would argue that also the tone of the communication (conflictual or harmonious) and the frequency of the communication play a role in the communication between professionals. The latter is widely used to operationalize strong ties or bonds between individuals or organizations in public administration and management studies (e.g. Varda, 2010; De Boer & Eshuis, 2018).

Antecedents of social relationships in PPPs

The quality of the social relationships between partners in PPP projects may vary. Based on an analysis of all publications included in this review, this section discusses the main antecedents that may have an effect on the quality of these relationships.

The strength of the relationship may depend on a variety of potential antecedents, ranging from individual characteristics, such as professional's personality or expertise, to antecedents on project- or organizational level, like organizational norms or the control mechanisms used (Panda, 2016). Some of these antecedents stand out, either because they are among the most frequently cited or because they are supported by different theories on exchange relationships (see Table 3.3; for a full overview see Appendix VI).

Antecedent	Number of articles mentioning it
Shared norms, values, and beliefs	22
Shared goals and interests	8
Expertise and experience	15
Personnel turnover	5
Leadership and (process) management	9
Geographic proximity	3
Prior ties	10
Reputation	6

Table 3.3 Antecedents of social relationships in PPP projects

The most frequently cited antecedent is that of shared norms and values (e.g. Zhang et al., 2009; Appuhami et al., 2011; Argento & Peda, 2015). As some of the articles show, this antecedent has theoretical underpinnings in amongst others the social exchange theory. *"According to social exchange theory, the more values partners share (e.g. similar blueprints for the future or similar operational modes), the more solid their foundation for exchange will be, making it easier to communicate with each other. They will exhibit a higher quality of reciprocal behaviour towards each other, leading to better collaborative outcomes."* (Zhang et al., 2009: 357). Norms, values, and beliefs can be personal, but they also exist on an organizational level as professionals tend to comply with the norms and values of their organizations. The network governance literature suggests that shared institutional norms and rules support trust (Klijn & Koppenjan, 2016[a]: 202). Furthermore, when partners share similar norms and values, and have a similar mind set, partners tend to understand each other better resulting in stronger commitment (Wong et al. 2015) and better communication (Lataifa & Rabeau, 2013; Wong et al., 2015). Relationships between partners also benefit from shared goals and interests (Bergmann & Bliss, 2004; Jacobson & Ok, 2008; MacDonalds, 2012). Project partners often have different interests and a variety of goals are present (see also Klijn & Koppenjan, 2016[a]: 244-245 on goal variety in networks). Professionals representing their organizations will take into account the goals of their organization. Conflicting goals and interests might form a barrier for strong social relationships, while compatible goals and interests, resulting in expected benefits for both partners, will make it easier to build strong relationships. Bergmann and Bliss (2004) summarize it as follows: *"If sharing goals and interests, and a sense of ownership in a problem are important steps toward developing cooperative relationships (Wondolleck & Yaffee, 2000), then divergent ideologies make it difficult to find common ground."* (Bergmann & Bliss, 2004: 388).

Furthermore, individual level antecedents may influence the relationship between professionals in PPPs. For example, the expertise and experience of professionals have a positive effect on trust. It is closely related to the idea of competence-based trust (e.g.

Edelenbos & Klijn, 2007; English & Baxter, 2010; Appuhami et al., 2011). Professionals should have the technical skill and managerial expertise to build and operate the agreed on product. A lack of experience, for example with public–private partnerships as a procurement method, limit the building of trust (Zheng et al., 2008). The importance of individual level antecedents is reflected in another antecedent, namely personnel turnover. High personnel turnover on either side has shown to be one of the factors straining relationships in PPP projects (Kumaraswamy et al., 2007; Bergmann & Bliss, 2004). It makes it difficult to maintain social relationships as interpersonal trust has be built again. Alexander (2012) states that because of personnel turnover *"the resulting network ties were subsequently less about trust and reciprocity than about directing project partners and negotiating with financial gatekeepers for resource allocations addressing last-minute needs."* (2012: 763). Clearly, selecting the right people is important for building good relationships. As personnel turnover is difficult to avoid in long-term projects, it is important that the negative consequences of turnover are dealt with as best as possible, for example through leadership and management. In particular active process management might foster trust and communication (Edelenbos & Klijn, 2007; Robert & Siemiatycki, 2015). The role of process management is also highlighted in network governance theories. Network management strategies are used to facilitate and promote the interactive process between project partners (Klijn & Koppenjan, 2016[a]). It should thus have a positive effect on communication, and consequently on the social relationships between project partners.

Another antecedent might be the geographic proximity between project partners. The expectation is that close geographic proximity increases the opportunities for direct communication and the build of trusting relationships (Cook, 2010; Roehrich & Lewis, 2014). However, not all studies confirm these positive expectations. The study of Letaifa and Rabeau (2013) indicates that geographical proximity may even be a barrier for social relationships between project partners.

Finally, prior ties are often mentioned as an important antecedent which may provide a kick start to building good relationships in PPP projects. As individuals have collaborated before, they already know each other and are, depending on the results of the prior collaboration, more inclined to trust each other. However, prior ties are also relationships, and that might pose a problem. The social interpersonal relationships we study are the dependent variable, yet this relationship is – in the form of prior ties - also the independent variable. The relationship at moment T is affected by the same relationship at moment T -1. Earlier experiences in the relationship affect the current state of the relationship. We also see this in, for example, the work Ansell and Gash (2008) on collaborative governance in which intermediate outcomes, like small wins and joint victories, help in further phases of the collaboration. To avoid conceptual confusion, prior ties are not included in the framework presented later

in this article. Instead, we do include the reciprocal character of these relationships in our framework. In the absence of prior ties, reputation plays a role in building a relationship. If an organization has a good reputation, professionals will be more inclined to trust employees of that company than if the company has a bad reputation (Parker & Hartley, 2003; Gazley, 2008). From a transaction cost economics perspective, a good organizational reputation reduces the uncertainty present at the start of such complex long-term projects (e.g. Parker & Hartley, 2003; Zhang et al., 2012). Several articles in the review find positive relations between a partner's reputation and relational concepts such as trust and cooperation (Parker & Hartley, 2003; Gazley, 2008; Zhang et al., 2012).

All these antecedents are potentially important in building strong social relationships between professionals in PPP projects. Their impact may however vary over time. Some antecedents, such as prior ties and reputation, are particularly relevant at the start of a relationship between partners. Other conditions, such as personnel turnover and the role of management could be especially important in maintaining relationships. Both categories are however pivotal in creating and maintaining the inter-personal social relationships central in this paper.

Outcomes of social relationships in PPP projects

Relational quality is generally considered important for public–private partnerships, because of its effect on the process and outcomes of the project. Table 3.4 identifies the main outcomes of high-quality relationships in PPPs. Note that, due to the reciprocal effect, good social relationships can also further strengthen aspects of this relationship. This effect has been addressed previously. Therefore, it will not be discussed in depth in this section.

Outcome	Number of articles mentioning it
Success and performance of PPP project	25
Efficiency, effectiveness	9
Better collaborative process	9
Decreased transaction costs	6
More innovation	5
Increased flexibility	5
Enhanced problem solving capacity	2

Table 3.4 Outcomes of social relationships in PPP projects

As the most cited outcome, scholars indicate that there is a correlation between high-quality social relationships in PPP projects and the projects' performance (Kumaraswamy et al., 2007; Roehrich & Lewis, 2014). Several articles provide empirical

evidence suggesting that relational quality might directly impact the success of PPP projects: *"…Personal relationships, mutual trust, and informal agreements are critical to the resolution of issues and can impact on the progress and forward momentum of the project."* (Jones & Noble, 2008: 113). Consequently, bad relationships characterized by a lack of trust *"are obstacles that partnerships face in their implementation in achieving effective partnership working"* (Mistarihi et al., 2013). Several studies also show how relational quality impacts elements of performance, such as efficiency and effectiveness. Smyth and Edkins (2007: 233) for example show that *"trust improves effectiveness of project management directly and efficiencies indirectly."* An indirect effect on PPP performance is also expected. Research shows that high-quality relationships between project partners enlarge problem solving capacity (Edelenbos & Klijn, 2007), increase flexibility (Reeves, 2008; Zheng et al., 2008; Alam et al., 2014) and reduce transaction costs (e.g. Parker & Hartley, 2003; Reeves, 2008; House, 2016). Both enhanced problem solving capacity and flexibility may, in turn, result in better performance, which means relational quality is also indirectly related to PPP performance.

Moreover, high-quality relationships between professionals might lead to better collaborative processes, which ultimately effects the performance of the PPP project (Bergman & Bliss, 2004; Reeves, 2008). It is well established that trusting relationships are prerequisites for cooperation (see for example Gambetta, 2000; Emerson et al., 2012). Good relationships promote interaction and understanding between partners, increasing the willingness to collaborate. Ansell and Gash show in their model of collaborative governance a number of elements that are central in the collaborative process. It should come as no surprise that many relational aspects, such as trust and communication, are included in this process (Ansell & Gash, 2008).

Finally, high-quality relationships between professionals are positively related to innovations in PPP projects (Alam et al., 2014; Argento & Peda, 2015; Badi & Pryke, 2015). Because partners trust each other, professionals are more willing to share information and more open to (although potentially risky) new innovations that might result in better quality of the product or service. One of the articles included in the review explains that *"innovation should be understood as a multidisciplinary activity spanning multiple organizations and circumstances and largely dependent on the collective, dynamic and interactive relationships among multiple project participants"* (Badi & Pryke, 2015: 412).

3.3.4. A framework on relational quality in public–private partnerships

This review has provided some insights on the social relationships between partners in PPP projects. These insights are used to develop a framework on relational quality in PPPs (see Figure 3.5). The framework is a great simplification of the complex, non-linear, and reciprocal relationships that comprise and affect the social ties between

individuals in PPPs. Yet, it may serve as a starting point for more elaborated study of the concept and its potential outcomes.

The framework shows antecedents that might have an effect on the quality of the relationships between professionals in PPP projects. There are antecedents on an individual level, like experience and expertise, and antecedents on project level, such as personnel turnover or management. Furthermore, the organizations these professionals represent play an important role. They form the institutional framework within which the professionals work. Both the organizational culture as well as the organizational goals may influence the relationships between the professionals collaborating in the project. These professionals represent the organizations - and their goals – and carry with them the organizational values of the company they work for. Moreover, the reputation of an organization might affect the initial level of trust professionals have if they have to collaborate with employees from that organization. Besides directly effecting the quality of the relationship between professionals, the organizational framework might also have an effect on some antecedents, like management, shared goals and interests, or personnel turnover. For example, the HR policy of the organization might have an effect on personnel turnover in the project. As said, these antecedents may influence the quality of the interpersonal relationships between professionals. As there are several of these relationships within the project, Figure 3.5 includes the multitude of relationships. It furthermore emphasizes the reciprocal character of social relationships and the close intertwinement between the different characteristics of these relationships. High-quality social relationships between professionals are said to have a positive effect on the success of the project. Several articles in the review suggest a direct effect, claiming that good relationships enhance project performance. However, good relationships do not directly result in time or cost savings. Instead the effect of high-quality relationships is mainly indirect. A number of authors have shown that high-quality relationships have a positive effect on flexibility, reducing transaction costs, and collaboration, which in turn lead to better performance. The effect of high-quality relationships on performance is therefore mainly indirect, although the review shows that this indirect effect is not included in all studies. Finally, I would like to stress the role of time- and feedback loops. Successful performance can be considered a joint victory. This positive experience can give a boost to the relationship, resulting in even stronger partnerships.

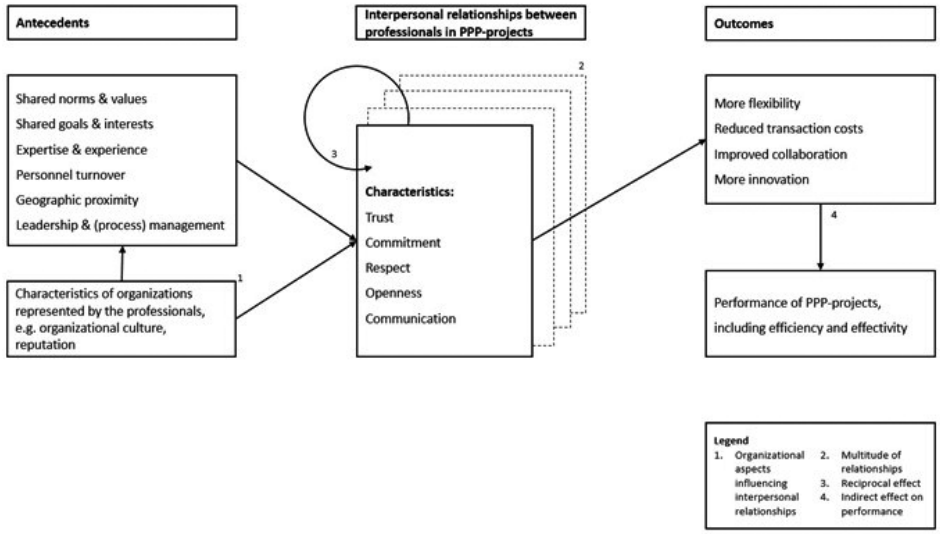

Figure 3.5 Model of relational quality in public–private partnerships

3.4. CONCLUSIONS

The goal of this article was to take stock of the scientific knowledge on relational quality in public–private partnerships. To do so, a systematic analysis of academic journal articles into this topic was conducted. In this section, I discuss the implication of the findings of this review and outline possible empirical, theoretical, and methodological avenues.

First, the review highlights the conceptual confusion regarding the notion of 'relational quality'. In this review, relationships are defined as social, long-term, and reciprocal inter-personal ties between professionals working on a project. The majority of the publications discussing social relationships in PPPs focus mainly on separate relational aspects or use trust as a proxy for the relationship. However, this review has taught us that the social relationships between project partners consist of more than just trust. Besides trust, social relationships are also characterized by respect, openness, commitment, and communication. These characteristics are closely intertwined. So, based upon the results of the review I would argue for a more inclusive view of social relationships in future research. The framework presented in this article can be considered a starting point for more inclusive research into relational quality in public–private partnerships. However, the reciprocal character of social relationships and the mutual reinforcing effect of several characteristics of these relationships make social relationships a complex concept to study. The different characteristics mentioned in this study embody very different sides of relational quality and are not

always closely related. It therefore seems difficult to combine all these properties into an appropriate holistic construct. The characteristics are rather different dimensions of the concept of relational quality, which we should therefore consider more or less as an umbrella concept, making the measurement of relational quality a challenging undertaking.

Although the concept remains somewhat vague in many articles, it is striking that social relationships between professionals in PPP projects are almost always considered as a positive thing. The review shows only limited attention for 'bad' relationships (e.g. distrusting relationships) and poorly developed social relationships (for a few exceptions see Panda, 2016; House, 2016). Further research into relational quality should also focus on less successful and poorly developed relationships. What hinders the development of poorly developed relationships? What causes 'bad' relationships in partnerships, and how can the quality of these relationships be improved?

Simultaneously, the focus on good relationships also expresses the relevance of studying these social relationships in public–private partnerships. High-quality relationships have positive effects on flexibility, innovation, and collaboration, which in turn help improve performance. Several characteristics of PPPs enforce this importance. First, the long term of PPP projects provides sufficient time for building strong social relationships, which is much more difficult in short-term projects. At the same time, these social relationships can be used for a long time to promote cooperation and help the realization of public service delivery throughout the duration of the project. Second, the contractual context of PPPs seems to limit the need for social relationships, but when partners manage to establish such a relationship anyway, it can actually offer added value. After all, high-quality relationships help project partners' to be flexible, when the contract is incomplete, does not fit changing contexts, or when the complexity of the project requires it. High-quality relationships offer an alternative problem-solving approach besides strictly following the contract, and thus may prevent standstills or inefficient solutions. Finally, PPPs can be considered networks (e.g. Alexander, 2012; Edelenbos & Klijn, 2007; Zou et al., 2014). Several organizations collaborate, and due to the many actors with their own needs, perceptions, and interests the transaction costs in the process may increase. It can be difficult to find alignment, especially when partners interpret rules, agreements, and requirements. High-quality relationships then allow partners to understand each other better, find mutual common ground, or compromise to resolve the situation and find a best-for-project solution.

The presence of both organizations and professionals in these PPP networks do raise questions about the relation between individuals and organizations. Earlier on, this article emphasized that organizations have an effect on inter-personal relationships and vice versa. It would therefore be useful to study how the organizations

represented by the professionals in the project precisely impact the inter-personal relationships between these professionals. When form these organizations a barrier? And when an enabler? The network-like character of PPPs adds the questions how important the network is for the social, inter-personal relationships central in this study. More research into the interplay between these relationships on different levels (inter-personal, inter-organizational, and in a network) will help us to better understand the functioning and the role of relational quality in PPPs.

The final conclusion is not so much empirical, but more theoretical and methodological in nature. Research into relational quality, and relational aspects, in PPPs leaves room for both theoretical and methodological developments. Methodologically, there is little variation with especially a lot of qualitative case study research. Further research might benefit from the use of newer, and more advanced, research methods such as Qualitative Comparative Analysis and experiments. This might help to unravel causal complexity and the mutually reinforcing effect of some relational aspects. To study the development of interpersonal relationships in collaborations over time, longitudinal research could prove useful. Furthermore, in studying relational quality in PPPs, much more use should be made different brands of literature from other fields of study. Current studies into relational quality often limit their theoretical section to summarizing general PPP literature, describing the nature and development of PPPs (see for example the many references to the work of Hodge & Greve, 2007). For example, social exchange theory, relationship management, and alliance literature may provide insights into the notion of relational quality and the mechanisms behind this. This is therefore also a call for more interdisciplinarity. PPP is already studied in a broad range different academic fields, but when it comes to studying social relationships in PPPs integrating elements and insights from different fields of study may prove useful. A suggestion would be to make use of the relatively new research field of behavioural public administration, in which insights from public administration are combined with insights from psychology on the behaviour of individuals and groups.

Limitations

As with any study, this study also has its limitations. One of these limitations has to do with the selection criteria of the publications. This paper for example only uses English journal articles, excluding for example academic books and publications in different languages. Furthermore, the decision to not use search terms referring to relational quality and relational aspects and deal with this manually might have an effect on the final list of publications included in the review. By judging the articles manually, we might have missed out on articles that would have been included using specific search terms. On the other hand, it allowed for the inclusion of articles discussing relational quality without key words like trust, conflict, and relationship.

Furthermore, this review included only articles studying PPPs, whereas social relationships are also studied in different types of partnerships and public–private exchanges, such as alliances and networks. As the review has indicated, these fields of study (e.g. alliance literature) may prove very useful in understanding relational quality in PPPs. However, given the size of the literature on PPPs and related disciplines it would not be doable to include all these articles. Instead, several articles in our selection did refer to theoretical insights from this study. In this article, I have reflected on a number of these theoretical insights and explored some of them further, yet not in a systematic way. This way I have attempted to link literature from other disciplines to this review and include the lessons they offer. Finally, the inter-personal, social relationships are not static, but highly dynamic. This review has pointed out some of these dynamics, such as the mutually reinforcing effect of different elements of social relationships and its reciprocal character. However, also time- and feedback loops play an important role in the dynamics of social relationships. Earlier achievements, such as joint victories and small successes during the course of the project are positive experiences that may give a boost to the relationship. In contrast, struggles, setbacks and not being able to resolve differences of opinion may have a negative effect on the relationship between partners. All in all, to fully understand relational quality in public–private partnerships, the dynamics of social relationships deserve more attention.

INTERMEZZO 3.

The systematic literature review in the previous chapter shows only very little research into relational quality in public–private partnerships, let alone much systematic research into this topic. The concept of relational quality has, so far, been ill defined. In most cases, trust is used as a proxy for the relationship. Nevertheless, Chapter 3 provided a first conceptualization of relational quality. It suggests that relational quality is not merely dependent on trust. Communication, openness, respect, and commitment are also important aspects of social relationships between project partners in PPPs. In doing so, the study in Chapter 3 has improved our understanding of the concept of 'relational quality'. A question that remains is: how can we build these high-quality relationships? Which determinants have the biggest influence on relational quality in PPPs? Chapter three already provides some hints regarding the determinants that might affect social relationships in PPPs. The next chapter will test a number of these determinants to provide an answer on the question: how can we build high-quality relationships in PPPs? It tests a few of the determinants suggested in Chapter 3. Therefore, the study in Chapter 4 uses data on 25 PPP projects in the Netherlands and Flanders in a Fuzzy-set Qualitative Comparative Analysis (fsQCA). The use of this method helps to go beyond the knowledge we have already gained in the small- N case studies on relational quality in PPPs that have been the most common method up to this point (see Chapter 3). Moreover, the method is suitable to test multiple determinants both separately as well as in combination with each other. It also allows for equifinality (see Schneider & Wagemann, 2012). This means that there might be multiple, mutually non-exclusive ways to build high-quality relationships. Allowing for variation in the way project partners may build high-quality relationships in PPPs, this method takes into account the complexities of relationship building and the fact that not all PPPs nor the relationships within PPPs develop in a similar fashion.

Chapter 4

Relational quality in public–private partnerships: A Qualitative Comparative Analysis (QCA) on 25 PPP projects in the Netherlands and Flanders.

This chapter has been submitted to an international peer-reviewed journal

ABSTRACT

Public–private partnerships (PPPs) are often equated with their contractual form, but the relational elements of these partnerships may also have an important effect on PPP performance. This study aims to deepen our knowledge on relational quality and tries to uncover what conditions influence good relationships in PPPs. Based on a qualitative comparative analysis (QCA) of 25 PPP projects in the Netherlands and Flanders, three different combinations of conditions are related to high relational quality in these projects. First, several projects with high relational quality display a combination of a 'fair' risk allocation and an experienced private partner. The two other combinations – the use of network management strategies combined with experience on the one hand and the use of network management strategies paired with a 'fair' risk allocation on the other hand - show that it is important to search for a balance between good starting conditions and the active nurturing of the relationship during the project.

4.1. INTRODUCTION

The last two decades have seen a growing trend towards the use of public–private partnerships (PPPs) to realize public infrastructure. Traditionally many of these PPPs are based on elaborate contracts, prescribing the allocation of risks and responsibilities, performance indicators, and opportunities to apply sanctions if performance falls short (Solheim-Kile & Wald, 2019). Often PPPs are equated with their contractual form, even though PPPs embody more than contractual relationships between public and private partners. PPPs are also partnerships, in which relational aspects are equally important. Relational aspects, such as trust, communication, commitment, and respect can be critical success factors in the collaborative processes in PPPs (Bult & Van Engen, 2015). They offer a way to deal with uncertainty and dynamics in the project. A good relationship between partners helps them to deal with issues that the contract cannot cover. This is slowly, but increasingly, recognized in PPP research (see for example Weihe, 2009; Warsen et al., 2018).

At the moment, research into relational quality in PPPs (and closely related topics such as trust and relational governance) is still lacking behind compared to research on other topics, like PPP performance, risk, and drivers of PPP (e.g. Wang et al., 2018). Nevertheless, several studies have already indicated the importance of the topic. In their review of Dutch and Flemish PhD dissertations, Hueskes et al. (2019) conclude that the importance of soft aspects in these collaborations is particularly emphasized in these studies. Most prominently is the role of trust, which seems to have a strong positive effect on the collaboration and performance of PPPs (e.g. Smyth & Edkins, 2007; Klijn et al., 2010; Warsen et al., 2018). Previous studies on this topic show not only that relational quality is important for public–private partnerships, but also that it may function as complement to the standardized contracts in PPPs (Poppo & Zenger, 2002; Warsen et al., 2019). Simultaneously, research indicates that, in practice, PPPs are often still treated predominantly as a contractual relationship (e.g. Reeves, 2008). Although these first studies on relational quality inform us about the importance of the concept, they tell us little about what conditions influence the quality of relationships between public and private partners in PPPs. Therefore, this will be the focus of our study. The central research question we aim to answer in this article is: *"Under which combinations of conditions display public–private partnerships high-quality relationships between public and private actors?*

With this study, I aim to contribute to the still limited body of literature on relational quality in PPPs. In search for conditions that might play an important role in building high-quality relationships, this paper builds on literature regarding relationality, relational governance, and relational contracting. These streams of literature acknowledge the importance of relational aspects in inter-organizational collaboration and

focus on the use of these 'soft' aspects in the governance of networks, partnerships, and contractual agreements. In earlier studies akin to relational quality, trust is often adopted as the core concept. However, in this study, trust is not the only relational element. Instead, in this paper relational quality is considered a broader concept, which consists of more than mere trust. Besides trust, also openness and communication are important elements in high-quality relationships. Therefore, this paper presents relational quality as a multi-dimensional construct. Besides the multi-dimensional nature of relational quality, this study also takes into account the unique characteristics of PPPs. As this study is focused on relational quality in the context of public - private partnerships, it is important to recognize the dynamics in PPPs and bear in mind the importance of its key aspects, such as risk allocation and the long duration of the partnership. Therefore, I include risk allocation as a condition that might influence good relationships. Related to the duration of the project, this paper studies relational quality in the realization phase of the project, but it includes conditions from previous phases as they might affect relational quality in later project phases. Besides its theoretical contribution regarding relational quality in PPPs, this study aims to make another contribution which lies in the use of QCA methodology. By making use of a Qualitative Comparative Analysis, my aim is to go beyond identifying single variables that correlate with relational quality. Instead, this study aims to identify combinations of conditions present in PPP projects with high-quality relationships between project partners. So, it is about understanding how these conditions work together rather than in isolation. The analysis is performed using survey and interview data on 25 PPP projects in the Netherlands and Belgium.

The next section of this paper first provides a brief introduction of PPPs. Then, the importance of relationality is explained, and various antecedents of relational quality are discussed. Section three of this paper focuses on the research method and the data used in this study. In the fourth part the main results of the QCA are reported. Conclusions and reflections on the outcomes of the analysis are provided in the final part of this paper.

4.2. RELATIONAL QUALITY IN PPPS

This section starts with introducing PPPs. Next, I elaborate on relational quality and the importance of good relationships in long-term contractual exchanges, such as PPPs. In the third section, the focus is on how good relationships could be build and how different conditions can be combined.

4.2.1. On public–private partnerships

By now, PPPs are a popular and often used concept in both academia and practice. This is partly because PPPs can be considered many things, ranging from a form of governance to a public policy delivery tool to a language game involving multiple grammars (Hodge et al., 2010). In this study, PPPs are considered long-term projects in which public and private actors collaborate to realize public infrastructure (see also Van Ham & Koppenjan, 2002; Hodge et al., 2010). This may concern transport infrastructure, such as roads and waterways, or social infrastructure, like schools, hospitals or prisons. With this focus, I follow the work of Hodge and Greve (2007) on PPPs as long-term infrastructure contracts (also referred to LTICs) in which PPP projects are considered a form of long-term contractual exchange. In this form of PPPs, the public partner usually determines the goal and outputs of the project, while the private contractor becomes responsible for a range of activities, like the design, finance, construction, operation, and maintenance of the project. Therefore, these PPPs are also referred to as DBFM(O) projects, wherein the letters refer to the activities assigned to the private partner.

When introduced, PPPs came with great promises. The use of private expertise, private funding, and risk-sharing between project partners should lead to reduced pressure on public sector budgets and limited (long-term) risks from infrastructural projects for governments (Van Ham & Koppenjan, 2002; Hodge et al., 2010). Moreover, the involvement of private actors in various stages of the projects should lead to minimized life-cycle costs (Parker & Hartley, 2003; Hodge et al., 2010). Strict contract management should ensure better on-time and on-budget delivery and a more efficient public service delivery (Hodge et al., 2010: 87). Studies into PPP performance and experiences from practice show that PPPs are not always able to live up to these promises. Nevertheless, contracts are still leading. Based on transaction cost theory, contracts are designed to lower transaction costs that arise from seeking out contractors, negotiating, arranging and enforcing agreements. Clear enforceable contracts aim also to prevent opportunistic behaviour in which partners try to exploit the situation to their own advantage (Parker & Hartley, 2003).

4.2.2. On the importance of relational quality in long-term contractual exchanges

Despite the importance of contracts, it is long known that contracts in general are incomplete. The complexity of the exchange and long-term nature of the partnership make it impossible to cover all potential circumstances and future developments in a contract (Davis, 2007). As response to incomplete contracting a growing body of literature emphasizes the importance of relational aspects and the processes of social exchange within long-term exchanges (Davis, 2007). Already in 1990, Hill called for

more research on the nature and effects of long-term cooperative relationships between economic actors, since every exchange includes some relational elements (Zaheer & Venkatraman, 1995). By now, the attention for relational aspects in exchanges can be found in many disciplines ranging from marketing to public administration. Relational marketing (McLaughlin et al., 2009), relational contracting (MacNeil, 1980; Davis, 2007) and relational (or relation-based) governance (e.g. Lee & Cavusgil, 2006) are only a few examples in which relational quality takes center stage, backed by theories like social exchange theory and relational capital theory.

The interest in relational aspects of exchanges and collaborations has led to proliferation of terms to refer to the 'soft' side of an exchange or cooperation, such as 'relational aspects', 'relationality' or 'relational quality'. In this paper, I use the term 'relational quality' as it is about the quality of the socially embedded, personal relationships between actors in an exchange. This refers to the condition of the relationship between actors (i.e. the degree to which something is in a good or bad state). Regardless of the variety in terminology, scholars seem to agree on the importance of good relationships between actors in an exchange. Several studies have shown that high-quality relationships seem to have positive effects on the performance of partnerships and alliances (Lee & Cavusgil, 2006; Davis, 2007; Zheng et al., 2008; Warsen et al., 2018). Trust, for example, mitigates opportunistic behaviour, leads to more communication and facilitates information sharing, which helps partners to coordinate their work, find solutions for problems, and better execute their tasks (e.g. Ring & van de Ven, 1992; Nooteboom, 2002; van Ham & Koppenjan, 2002; Edelenbos & Klijn, 2007). Thus, trust has a positive effect on performance (e.g. Warsen et al., 2018). With regard to the uncertainty and complexity inextricably linked to long-term complex exchanges, such as PPPs, high-quality relationships allow actors to adopt a more flexible attitude and search for a best-for-project solution in collaboration. After all, high-quality relationships characterized by trust, respect, and relational norms give actors no cause for fear of opportunistic behaviour. Openly sharing information can be considered a sign of showing good intentions. It is also a sign of trust, showing that actors trust one another with the given information and expecting that the partner will not use this information for its own gain (see Klijn et al., 2010). This way, high relational quality reduces the need for detailed agreements and enforcement mechanisms in exchanges, and therefore decreases transaction costs (Zaheer & Venkatraman, 1995). Given the positive effect of good relationships on performance, relational elements are often used as a coordination mechanism to govern to exchange between partners (Lee & Cavusgil, 2006). This is often labeled as relational governance. Research has shown that relational governance can be used in contractual exchanges (e.g. Poppo & Zenger, 2002). It even complements the use of contracts. Contracts can promote the formation of long-term, trusting relations (Poppo & Zenger, 2002) whereas relational

intentions may frame whether a contract is interpreted as a written sign of distrust or commitment (Zheng et al., 2008).

4.2.3. Furthering the debate on relational quality

So, relational quality, and in particular specific relational aspects like trust, are strongly correlated with performance. This makes relational quality an important concept to study. However, if we intend to deepen our knowledge about the concept and further the debate about its applicability, it is imperative that we look at how the concept is interpreted and used.

At this moment, there seems to be two opposing viewpoints visible with regard to the interpretation of relational quality. First, relational quality is interpreted as a one-dimensional concept. Frequently, the relational component in an exchange is largely represented by trust (MacNeil, 1980). This would mean that the quality of the relationship between partners is determined by the degree of trust between them. Trust also stands out as the core concept in several bodies of literature, including theories about collaborative governance (Ansell & Gash, 2008), alliances (Kale, 2000; Lee & Cavusgil, 2006), and relational contracting (MacNeil, 1980; Poppo & Zenger, 2002). However, several studies suggest that high-quality relationships in long-term exchanges are made of more than just trust, and that long-term relationships without trust are possible, as long as partners are committed to long-term interaction (e.g. Cook et al., 2005). Trust might be not imperative and a one-dimensional image of relational quality – using only trust – could run the risk of overlooking important other aspects of the concept. In contrast to this first viewpoint, the second viewpoint regarding the interpretation of relational quality considers it a multi-dimensional construct. It points out other relevant relational aspects like respect, commitment, shared values, and mutual interest (Davis, 2007). Scholars emphasize the importance of relational norms such as flexibility, solidarity and two-way, reciprocal communication to prevent conflicts and exchange knowledge (MacNeil, 1980; Zaheer & Venkatraman, 1995; Kale, 2000; Hunt & Arnett, 2004). This second viewpoint does not exclude trust as an important dimension, but it prevents a unilateral focus. There is however a considerable risk of creating a very broad concept that includes too many dimensions, making the concept too broad and unusable.

A certain balance is therefore needed. On the one hand, important dimensions of relational quality need to be included in the concept. At the same time, it must be prevented that the concept becomes meaningless due to the inclusion of too many dimensions. Therefore, a well-considered choice must be made regarding the inclusion of relational elements as dimensions of relational quality. In this paper, relational quality is studied as a multi-dimensional construct. Inspired by Poppo and Zenger's

work (2002), I consider high-quality relationships as socially-embedded inter-personal relationships characterized by mutual trust, openness, and communication.

4.2.4. Relational quality in PPP-literature

When we make the move from relational quality in contractual exchanges in general to relational quality in the specific context of PPPs, the first thing that stands out is that the attention for relational quality in PPP research has traditionally been rather limited. In her PhD thesis, Gudrid Weihe emphasizes the lack of research into the nature of cooperation and emphasizes the importance of relational elements in PPPs (2009). High-quality relationships can be particularly important, given the long-term nature of the PPPs. With contracts lasting for more than twenty years, good relationships help partners to solve problems or deal with unexpected circumstances that arise over the years. Since 2009, slowly but steadily the scholarly attention for the topic is increasing (e.g. Smyth & Edkins, 2007; Reeves, 2008; Hueskes et al., 2019). Results of these studies are mixed. In his research, Reeves (2008) shows that there are hardly any high-quality relationships in PPP projects. Contractual elements of the exchange predominate. Simultaneously, other studies provide evidence that relational aspects are important in successful PPPs (e.g. Hueskes et al., 2019; Warsen et al., 2019). The importance of trust is particularly highlighted (for example in Edelenbos & Klijn, 2007; Warsen et al., 2018), although a few studies also emphasize the importance of other dimensions, including commitment, respect, and communication (e.g. Alam et al., 2014).

4.2.5. On building high-quality relationships in PPPs

Whereas the previous section shows that high-quality relationships are important, the questions remains how these relationships can be realized within PPP projects. Building good relationships in PPPs might pose a challenge, as public and private partners might have very different ideas, values, and interests (see for example the work of Jacobs, 1992). To build high-quality relationships despite these differences, I discuss four important antecedents of relational governance, which will be tested later on in this paper. These four antecedents are either frequently mentioned in earlier research focusing on relational quality or specific relational aspects or they are selected based on their importance in the PPP-context.

Risk allocation

A first antecedent, which is particularly important in PPPs, has to do with the allocation of risks. In PPPs both partners bear responsibility for certain aspects of the project, but the way the risks are allocated has an impact on the relationship between partners. The central idea regarding risk allocation in PPPs states that risks should be

allocated to the partner who is best able to carry and mitigate these risks. For example, private partners are better equipped to deal with risks associated with the design and construction of the project (Akintoye et al., 2008). However, in many contract-based PPP projects, risk allocation goes awry as the vast majority of the risks is transferred from the public agency to the private contractor. A balanced, or fair, risk allocation in which both public and private partners carry their share of the risks, might help to align goals and build trust (Solheim-Kile & Wald, 2019). Taking on some risk might be considered as a sign of commitment and indicates the willingness to invest in the project. When, in contrast, all risks are allocated to only one of the partners in the project, this might put pressure on the relationship between partners. The partner who is responsible for all the risks may feel disadvantaged. It increases that chances for 'free-riding' behaviour from the partner who carries no risks, which might result in distrust.

Experience

Second, the experience of project partners seems to be important in building high-quality relationships. Earlier studies on trust, an important dimension of relational quality, have shown that experience is an important antecedent and is strongly correlated to competence-based trust (e.g. Edelenbos & Klijn, 2007). This indicates that actors are inclined to trust their contract partner when the partner is highly experienced, either with a specific type of collaborations, such as PPPs, or with the technical skills necessary to execute a certain task, like the construction of highways or the build of sluices. Experience may play a role in selecting partners prior to the actual collaboration, as public agencies tend to hire contractors who are more familiar with agency rules, policies, and have the technical and managerial capacity (Lee & Kingsley, 2009). Therefore, experience is included in this study as one of the main conditions. The expectation is that high (perceived) experience is a sufficient condition for high levels of trust in PPP projects.

Frequent communication in the tender phase

Communication is another condition that might influence high-quality relationships as frequent interactions lead to common understanding between partners (Bult & Van Engen, 2015). By communicating partners get to know each other, they can exchange ideas, and elaborate on their visions. Through dialogue partners may identify opportunities for mutual gain (Ansell & Gash, 2008). Interactions between partners help to understand one another. When actors communicate openly about their intentions and share information, trust will develop. Without interaction, trust will easily diminish (Nooteboom, 2002). Given the reciprocal relation between trust and communication, and the inclusion of communication as a dimension of relational quality,

it is important to create a clear separation between this antecedent and relational quality as an outcome. Therefore, this antecedent focuses on communication in the tender phase, while relational quality will be measured at a later stage, namely the realization phase.

Network management

Finally, high-quality relationships between project partners need not only be build, but they also need to be maintained throughout the process. Institutional and cultural differences create unfavourable conditions for collaboration and trust. To realize trust, process management plays an important role (Klijn & Koppenjan, 2016[a]). Process rules should limit the potential for opportunistic behaviour and at the same time lead to more flexibility (Van Ham & Koppenjan, 2002). Process rules can be found in the literature on network management. PPPs are a form of networks, in the sense that they form fairly stable patterns of social relationships between different actors who come together and jointly work on public decision making or public service delivery (see Klijn & Koppenjan, 2016[a]). Various network management strategies can be employed in an attempt to maintain socially embedded relationships between these partners. These include process rules about access to the network, but also network management strategies to explore content and to connect actors. These different network management strategies attempt to facilitate interactions between actors, with the aim to coordinate activities, clarify goals, find shared solutions for issues, align interests and so on (Klijn et al., 2010). These management activities may bring partners closer together and maintain or enforce the social relationships between project partners.

Given the fact that these four conditions have different effects in different stages of the process, they might substitute or complement each other in the realization of high-quality relationships. Relationships need to be built in the first place and some conditions particularly play a role at the start of the relationship. Experience of actors is important in the process of selecting a contractor and the risk allocation is also agreed upon during the tender phase of PPP projects. Communication can be used to build and maintain a relationship, while network management strategies also function during the relationship to enforce that the partnership between public and private partners. Moreover, conditions might be able to affect each other. Highly experienced partners might communicate differently than actors without a lot of experience, as they already know how things work. The way risks are allocated might have an impact on communication; to manage shared risks require more interaction than when all risks are assigned to only one actor. This way several antecedents of high relational quality in PPP might affect each other. It is therefore relevant to study which combinations of conditions are present in PPP projects that display high relational quality.

4.3. METHODOLOGY

The method section of this paper starts with addressing the empirical setting of our study. Next, it provides a short introduction of the set-theoretic method of Qualitative Comparative Analysis. Finally, it turns to the operationalization and the calibration of the conditions and the outcome of this study.

4.3.1. Public–private partnerships in the Netherlands and Flanders

To study high-quality relationships in PPPs, I studied 25 PPP projects in the Netherlands and Flanders (Belgium). These partnerships are DBM and DBFM(O) projects, in which the responsibility for the design (D), build (B), and maintenance (M) was assigned to the private partner. In most projects the private partner was also responsible for the financing of the project (F) and the operationalization (O). The case selection covers both transport infrastructure (highways and sluices) as well as social infrastructure (court houses, swimming pools, and government buildings). The majority of the projects has been tendered by national governments or their executive agencies, due to the sheer size of the projects. Table 4.1 below gives an overview of the characteristics of the selected PPP projects.

Country	Type of PPP project	Level
Netherlands (13)	Transport infrastructure (7)	All national level
	Social infrastructure (6)	National (3) and local (3) level
Belgium (12)	Transport infrastructure (7)	All national level
	Social infrastructure (6)	National (2) and local (4) level

Table 4.1 Characteristics of selected PPP projects[6]

The data on these projects was collected between March 2016 and September 2017. Two to four professionals were interviewed for each project, including at least one public and one private professional. The respondents played a central role in the project teams as for example contract manager, tender manager, or project director. 71 interviews were held with in total 74 professionals. Moreover, prior to the interview 72 out of the 74 respondents filled out a short survey on the project. Both the survey and the interview data are used in the QCA.

4.3.2. On QCA

As a set-theoretic method, in QCA all conditions and the outcome are considered to be sets. Cases are scored on their membership in each set. Full members score (1), while

6 The numbers between brackets refer to the number of cases that display these characteristics.

a non-members score (0). For example, in the set of EU countries, France as a member scores (1), while Nigeria scores (0). In this paper, fuzzy set QCA (fsQCA) is used, which allows for different degrees of membership in a set. Scores below the cross-over point (< 0.5) indicate that cases are more out than in the set, while cases with a membership score above the cross-over point (> 0.5) are more in than out the set. As fsQCA allows for a more nuanced distinction between cases, it is preferable over crisp set QCA (Schneider & Wagemann, 2012). QCA identifies combinations of conditions that are either necessary or sufficient for the outcome. A necessary condition indicates that the outcome cannot be present without that condition being present. In contrast, but the outcome may occur without the presence of a sufficient condition. However, when a sufficient condition is present, the outcome is present as well (Schneider & Wagemann, 2012). Three important assumptions underlie the QCA method. First, the idea of conjunctural causation implies that the effect of a condition unfolds only in combination with other conditions (Schneider & Wagemann, 2012: 78). So, combinations of conditions explain the outcome rather than single conditions. Second, QCA builds on the idea that there are multiple combinations of conditions possible to explain the outcome. There are different paths leading to the proverbial Rome. Finally, QCA accepts the idea of asymmetrical causations. This suggests that different conditions play a role in the outcome and the negation of the outcome. The set of conditions leading towards the outcome can be different from those leading to the non-outcome (Ragin, 2008).

4.3.3. The calibration process

To determine the extent the cases are members of the outcome and four conditions, the calibration process takes place. Each case will get a membership score between 0 and 1 for the outcome and each of the conditions. In this section the calibration process and underlying arguments in assigning the membership scores are described. As is custom in QCA, this process entails a going back and forth between data and theory.

Relational quality

The outcome in our analysis is relational quality. In this paper we measure relational quality during the realization phase of the project. As emphasized in the theoretical section of this paper, relational quality is a multi-dimensional construct. The collected data allows us to combine three dimensions to build the construct of relational quality: trust, openness, and communication. First, all cases are scored on each of these dimensions after which a final score for relational quality is determined.

First, each case is assigned a membership score on trust based on five survey questions with 10-point answering scale. These survey questions jointly form a well-tested

and previously used scale (e.g. Klijn et al., 2010). For each respondent, the scores are added. Then the score of the respondent who has the lowest combined score is selected. This is based on the theoretical assumption that trust should mutual, and the methodological risk that respondents might be reluctant to give low scores as trust can be a sensible topic. This average score is transformed into a set membership score of 0, 0.33, 0.67 or 1 using the thresholds of 25.25, 30.5 and 40. Finally, the scores are corrected for qualitative data stemming from the interviews. Then, the frequency of communication in the realization phase is scored using survey data, which is transferred to set-membership scores per respondent (see Table 4.2 below). To create a set-membership score for each project, the following procedure is followed:

- If membership scores of all respondents are the same → assign that score to the case;
- If different scores between members → select only respondents involved in the realization phase as they are best capable to determine the frequency of communication in this period;
- If remaining membership scores are the same or on the same side of the cross-over point → assign (average) score to case;
- If remaining scores differ across the cross-over point → use additional qualitative information to make decision.

Frequency of communication	Set-membership score
Less than once a month	0
Once a month	0.33
Once every two weeks	0.67
At least once a week	1

Table 4.2 Set-membership score on frequent communication

Finally, in the calibration of openness four survey questions with answering scales from 1-10 are used. The scores for these four items are added per respondent. Based on the same principles I used when calibrating trust, the score of the lowest scoring respondent is selected for each case. These scores are converted to set-membership scores using the thresholds 20, 27.5, and 31.5.

With set-membership scores for each of the three dimensions, the final membership score for each case in the set 'high relational quality' can be determined. The more dimensions the case is a member of, the higher the set-membership score for that case (see Table 4.3):

Case is set-member in…	Set-membership score in the outcome (high relational quality)
0 out of 3 dimensions	0
1 out of 3 dimensions	0.33
2 out of 3 dimensions	0.67
3 out of 3 dimensions	1

Table 4.3 Determining the set-membership score of the cases in the outcome

Network management

The set-membership score on network management is based on five survey questions with a 5-point Lickert scale referring to different network management activities. First, a project score for each survey item is determined. If all respondents fully agree, the project gets a membership score of 1. If all respondents either partially or fully agree, a score of 0.67 is assigned. If the respondents give mixed scores, the project is scored a 0.33. Finally, if all respondents (partially) disagree, the project gets a membership score of 0. The final membership score on network management is determined using the following scheme: the more items are present, the higher the score (Table 4.4). After all, the use of more network management strategies suggests a stronger use of network management.

Score on separate items:	Set-membership score in network management
Two or less indicators score above the cross-over point	0
Three indicators score above the cross-over point	0.33
Four indicators score above the cross-over point	0.67
All five indicators score above the cross-over point	1

Table 4.4 Determining the set-membership score of cases in the in the condition 'network management'

Frequent communication in the tender phase

This condition is calibrated in a similar fashion to frequent communication in the realization phase, one of the dimensions constructing the outcome. This includes determining a set-membership score per respondent using Table 4.2, followed by selecting respondents who have been active in the tender phase in case of non-matching membership scores, and eventually using qualitative data to make a final decision in the membership score per project. To keep a clear distinction between this condition and the outcome, the focus here is on communication in the tender phase. The tender phase is clearly different from the realization phase due to the involvement of multiple potential contractors and the involvement of different professionals of whom most will leave the project after the project has been awarded to one of the consortia.

Experience

In this study, public partners were asked to assess the experience of their private counterpart at the start of the project on a scale from 1-10. So, experience here is explicitly about the experience of the private partner. When several public professionals assessed their partners' experience for the same project, the average score was used. Scores were then transformed into set-membership scores of 0, 0.33, 0.67, or 1 based on the thresholds of 3.99, 5.99 and 7.99. Based on the qualitative interview data of both public and private professionals and information on the website of private partners checking their earlier experiences with PPP, the set-membership scores could be adjusted.

Fair risk allocation

The last condition, risk allocation, is calibrated using qualitative interview data. The assumption in PPP literature regarding risk is that risks should be assigned to the partner who is best able to control and carry those risks, thus a distribution in risks between both partners is expected. Therefore, if risks are divided between both partners a score > 0.5 is assigned to a case. If the private partner carries all the risks, the set-membership score of a project will be below 0.5. However, in practice the majority of the risks is usually transferred to the private partner. Therefore, the more risks, and the more substantial the risks, that remain with the public partner, the higher the membership score in the set 'fair risk allocation'.

4.4. RESULTS

In this section, the results of the analysis of necessity and sufficiency are presented. The enhanced standard analysis is applied. All analysis have been done in R, using the packages QCA and SetMethods (Dusa, 2007; Medzihorsky et al., 2016). First, to determine whether there are any necessary conditions for high-quality relationships in PPPs, the analysis of necessity is performed. The consistency benchmark for necessity is set to 0.9 in line with Ragin (2000). The analysis (see Table 4.5) shows that no single condition is a necessary condition, neither in its absence nor in its presence.

Condition	Consistency
Network management (NM)	0.756
Frequent communication tender phase (FC)	0.642
Experience of private partner (EXP)	0.733
Fair risk allocation (RA)	0.600
Absence of network management (~NM)	0.399
Absence of frequent communication tender phase (~FC)	0.570
Absence of experience of private partner (~EXP)	0.487
Absence of fair risk allocation (~RA)	0.576

Table 4.5 Analysis of necessity for the outcome 'high relational quality'

Next, the analysis of sufficiency shows which combinations of conditions are sufficient for high relational quality in public–private partnerships. First, a truth table is constructed, which displays all possible combinations of conditions. Each case is assigned to one truth table row (see Table 4.6). To determine which truth table rows to include in the analysis, a consistency threshold of 0.825, well above the required minimum of 0.75 (Schneider & Wagemann, 2012)[7]. Moreover, this threshold coincides with a gap in the data (see Vis, 2009). Given the limited number of cases, all truth table rows above the threshold to which at least one empirical case can be assigned are included in the analysis.

Initially, eight truth table rows are included for the analysis. However, there are three contradictory truth table rows, which include deviant cases consistency in kind: cases that do display the configuration presented in the truth table row, but not the outcome. This applies to case P20, P22 and P3. Closer study of the cases shows that these cases can be explained based on qualitative in-depth case knowledge. In case P20, early in the realization phase a few events affected some professionals' trust in their counterpart. Over time, extra efforts have been made to improve the relationship. The difference in relational quality during the realization phase has led to mixed scores on dimensions such as trust and openness. Case P22 displayed high levels of trust between project partners but received mixed scores on openness and the frequency of communication. The choice for a multi-dimensional interpretation of relational quality has led to a membership score below 0.5. Finally, case P3 is not considered a project with high relational quality. Qualitative data shows that - although the project

7 Originally, I planned a threshold of 0.8. This would raise questions regarding the inclusion of truth table row 9. A closer study of the cases assigned to this row showed that two out of three cases in this row are deviant cases. Combined with the rather low PRI led to the decision to raise the threshold of 0.825 to make it coincide with a gap in the data and leave truth table row 9 out of the analysis.

partners had a good relationship during the realization of the project - towards the end of the project tensions led to trust issues and reduced openness. The project partners did not manage to maintain a good relationship throughout the project. As people tend to remember their latest, and most negative, experiences best, this might have led to low scores on the outcome for this case. Based on the qualitative explanations of the deviant cases, and the fact that in all three truth table rows at least half or more of the cases is a consistent case, the decision was made to include all eight rows in the following minimization process.

	NM	FC	EXP	RA	OUT	Incl.	PRI	Cases
10	1	0	0	1	1	1.000	1.000	P23
16	1	1	1	1	1	0.979	0.966	P7, P14, P15
12	1	0	1	1	1	0.940	0.894	P10, **P20**
11	1	0	1	0	1	0.929	0.836	P8
14	1	1	0	1	1	0.905	0.809	P11, **P22**
15	1	1	1	0	1	0.879	0.780	**P3**, P9, P25
8	0	1	1	1	1	0.858	0.801	P18
4	0	0	1	1	1	0.847	0.780	P24
9	1	0	0	0	0	0.800	0.579	P12, P13, P17
1	0	0	0	0	0	0.765	0.524	P5, P21
6	0	1	0	1	0	0.688	0.496	P6
7	0	1	1	0	0	0.645	0.388	P2, P4, P16
5	0	1	0	0	0	0.643	0.353	P1, P19
2	0	0	0	1	?	-	-	Logical remainder
3	0	0	1	0	?	-	-	Logical remainder
13	1	1	0	0	?	-	-	Logical remainder

Table 4.6 Truth table for the outcome 'high relational quality'

The minimization process resulted in the conservative solution formula[8]: NM*EXP + NM*RA + EXP*RA (see also Table 4.7). It shows that there are three configurations, or combinations of conditions, that are sufficient for high-quality relationships in PPPs.

8 In this study we present the conservative solution formula. The most parsimonious solution formula, which also includes the logical remainders (rows for which we have no empirical evidence) is exactly the same as the conservative solution formula.

Configurations →	Path 1	Path 2	Path 3
	NM*EXP	**NM*RA**	**EXP*RA**
Consistency	0.902	0.839	0.916
Raw coverage	0.621	0.467	0.489
Unique coverage	0.222	0.067	0.089
Cases	P8, P10, P20, P3, P9, P25, P7, P14, P15	P23, P10, P20, P11, P22, P7, P14, P15	P24, P18, P10, P20, P7, P14, P15
Solution consistency		0.833	
Solution coverage		0.778	

Table 4.7 Conservative solution formula for the outcome high relational quality.

The first combination of conditions present in PPP projects with high relational quality between project partners is the combination of network management and experience. Experience, as a starting condition, may contribute to high-quality relationships, as it may lead to competence-based trust. Experienced professionals know what to expect during the realization of the project, recognize and anticipate on risky situations, and are able to keep their calm during critical moments. Complementary to experience, network management activities can by employed throughout the project to build and maintain a good relationship in the later stages of the project. Case P8 is a typical case in this configuration. The private partner in P8 has gained experience in a similar transport infrastructure DBFM project. In an interview, one of the respondents explains how technical staff collaborates smoothly with their counterparts due to their experience (respondent LW). In the project, partners use network management activities focused on exploring content and connecting (see Klijn et al., 2010). The project partners in P8 aim to maintain a good relationship while managing the project. Together they have made a set of informal process rules on how they interact and deal with issues. These process rules not only structure interaction and information exchange, but they are also aimed to explore various options in terms of content and enhance the alignment of perceptions. Partners are invited to be transparent and express their doubts. These process rules can be considered network management strategies and might contribute to good relationships between partners in this project.

The second combination of conditions in PPP projects with high relational quality is network management combined with a fair risk allocation. Similar to the first path, this seems to be a combination of a starting condition (i.e. allocation of risks) and active management to maintain the relationship during the course of the project. A fair risk allocation, in which both partners carry some of the risks, ensures some form of involvement and commitment to the project. This might decrease the risk of opportunistic behaviour, and thus increase trust. As the allocation of risks is decided upon prior to the realization of the project, this plays a role as a starting condition in

the relationship between project partners. It also implies a more equal relationship between partners. After all, assigning all risks to only one of the partners, relieves the other of its responsibilities. Network management activities can be used during the realization to connect partners and help them align interests. In project P11, a case uniquely covered by this configuration, some risks were allocated to the public partner. This applied in particular with risks related to law and permits, as they were hard to influence or mitigate by the private partners. The private partner was asked to help reduce the risk but did not carry its consequences. With regard to network management, in project P11 significant attention is paid to connecting actors, starting and structuring interaction processes, and aligning perceptions (see Klijn et al., 2010; Klijn & Koppenjan, 2016[a]). These included for example the design of a number of 'golden rules' on how partners should interact with each other: *"These included very obvious things, like 'we look for interaction', 'I do not send emails, but I call you'. 'I do not send you letters unannounced'. Perhaps obvious things, but we have mentioned them anyway"* (respondent MMI).

The final path displays a combination of experience and risk allocation. These are both conditions determined at the start of the project. Experience, however, might also have an effect during the realization of the project. Showcasing experience during the project might increase trust in each other's competences. In projects with this configuration, both partners carry some risks. An example is case P24, where a respondent explains: *"The risk regarding permits lay with the city [public client], the risk of soil pollution was ours [private contractor]"* (respondent BZ). When both partners bear part of the risks, this calls for more communication and openness, since both partners need to know how the project is evolving in order to mitigate the risks that are allocated to them. A peculiar case in this path is case P18 as respondents indicate that the formal risk allocation in this project is not well-balanced nor fair. Although, the public partner is responsible for some risks, like the risk of soil pollution, respondents believe that still too many risks are assigned to the private partner. However, in the interviews respondents show how they manage and mitigate some of these risks together. A clear example in the project revolves around getting a permit for the build of a tunnel. Formally, the risk was assigned to the private partner, although the public partner had made agreements about it with the local government in an earlier stage. Both partners agreed that it was not reasonable to assign this risk completely to the private partner, resulting in a joint effort to mitigate this risk:

"So, we did very well together. It would have been very easy to say: 'Yes, we fulfilled our duties regarding the permit. We properly submitted it; it is no longer our risk. Dear [public client], it is your problem now.' […] but the public client could have said: 'it is your problem, you solve it.' And eventually, we have said: we have to work together here" (Respondent WM).

4.4.1. Analysing the results

The three paths show different combinations of conditions present in PPP projects with high relational quality (see Table 4.8). In total the three paths jointly cover 12 out of the 14 cases displaying high relational quality. A first thing that stands out is the overlap between the three configurations. Combined the three paths have a coverage of 0.778, but the unique coverage of each path is low, in particular for path 2 and 3. In several cases both experience, a fair risk allocation, and network management activities are present, and thus they can be found in all three paths. Case P14 for example shows how partners search to align interests in case of problems or an impasse (network management). Moreover, the private partners in P14 are experienced, having done similar transport infrastructure PPP projects before. The public partner suggests that the private consortium has much more expertise than the public agency. In terms of risk allocation, both partners agree that risks way heavy on the private partner, but that the public partner takes on a collaborative attitude and helps mitigating these risks. Their high-quality relationship is characterized by openness and transparency. By openly sharing information, partners get the feeling that realizing this project is truly a joint effort. *"We have many informal meetings. We are really transparent. Rijkswaterstaat [the public agency] also has a room here in our building. They use it a lot, walk around in our office. We work together, and this is the first time a have that feeling in a DBFM [type of PPP project]"* (Respondent PS).

	Path 1	Path 2	Path 3
Network Management	✓	✓	
Experience	✓		✓
Risk allocation		✓	✓
Frequent communication in the tender phase			

Table 4.8 Simplified representation of the conservative solution formula

The only condition that is not part of the solution formula is frequent contact in the tender phase. Neither its presence nor its absence can be found in any configuration. The communication in the tender phase apparently does not play a decisive role in the relationships between project partners in the realization phase. The assumption is often that the tender phase is crucial in the relationship between project partners. However, investments made in the early stages of the collaboration do not always last, perhaps due to personnel turnover. Many public and private professionals leave the project after the tender is completed, while other professionals come in and work on the realization of the project. As new professionals come into play, the relationship between partners might change. So, because different teams are involved in the vari-

ous phases of the project, this might explain the limited role of this condition in the solution formula.

As an additional test, a cluster analysis (see Appendix VII) was performed to see if the results hold for projects in both countries and different types of projects. The analysis indicated that differences between projects in the Netherlands and Flanders are limited. Consistency scores for projects in both countries are comparable. Although the Dutch cases are in general somewhat better covered than the Flemish ones, the configurations hold for projects in both countries. The cluster analysis studying potential differences between nationally initiated PPP projects versus local PPP projects shows similar results. Finally, the analysis was done for different types of PPP projects. The results show some differences between transport infrastructure projects and social infrastructure projects. Both in terms of consistency and coverage path two and three social infrastructure projects score lower than transport infrastructure projects (see Table 4.9).

	NM*EXP	NM*RA	EXP*RA
Pooled consistency	0.902	0.839	0.916
Consistency social infra	0.845	0.712	0.712
Consistency transport infra	0.943	0.888	1.000
Pooled coverage	0.621	0.467	0.489
Coverage social infra	0.645	0.293	0.293
Coverage transport infra	0.607	0.572	0.607

Table 4.9 Cluster analysis type of PPP project

This indicates that we are better able to explain relational quality in transport infrastructure projects than social infrastructure projects. Social infrastructure projects might have a different dynamic, as these types of projects often include the 'O' (operate) in their contracts. Moreover, the involvement of users is often greater than in transport infrastructure projects. The differences in coverage scores might indicate that there are alternative conditions that play a role in relational quality, like shared norms and values or personnel turnover, which are not included in this study.

4.5. CONCLUSIONS

This study aims to provide more insight into relational quality in PPPs. To do some justice to the complex and dynamic process of building and maintaining high-quality relationships in PPPs, several conditions were tested to see which combinations are present in PPP projects that display these kinds of high-quality relationships. The answer to our research question, "*Under which combinations of conditions display pub-*

lic–private partnerships high-quality relationships between public and private actors?" shows three possible combinations of conditions in PPPs with high-quality relationships between project partners. The combinations of network management and experience (NM*EXP), and the combination of network management and a fair risk allocation (NM*RA) both consist of a starting condition (measured prior to the realization of the project) and a condition in the construction phase (during the realization of the project), suggesting that building high-quality relationships requires continuous effort throughout the project. The third combination combines high levels of experience with a fair risk allocation (EXP*RA).

Based on the results of this study a few important lessons can be drawn. First, when it comes to building high-quality relationships in PPPs, well begun is half done. Results emphasize the importance of starting the realization of the project with confidence. Whether this confidence stems from having an experienced private contractor or from a fair risk allocation is of less importance, as long as project partners have a good feeling about their partnership before they enter the realization phase. Second, network management is an important condition. It is not necessary, as case P18 and P24 show, but in most projects with high relational quality, network management is present. This suggests that maintaining the relationship throughout the project is essential in most projects. Relationships need not only be built; they also need to be carefully nurtured. The continuous attention for relational quality might be particularly important when project partners are faced with uncertainty, unexpected events, or reach an impasse. Their relationship might then give them a solid base for overcoming the challenges they are faced with during the project. So, it is important to pay attention to the relationship between project partners from the start of the partnership. The practical relevance of this study lies in emphasizing the constant attention required to achieve high relational quality in PPPs. Thirdly, frequent communication in the tender phase seems less relevant with regard to relational quality. Projects with and without frequent communication in the tender phase are able to build high-quality relationships during the project. A potential explanation lies in personnel turnover. As new personnel comes in at the start of the construction phase, they might be sparsely affected by the frequency of communication in the phase prior to their involvement. The quality of their relationship should be less dependent on the frequency of earlier communication, as partners will reshape existing relationships and build new relationships as new professionals make their appearance. Personnel turnover thus raises the question to what degree events in the tender phase play a role in determining the relationship in later stages of the project. In practice, this means that project partners need to take into account future developments regarding staff and the consequences of personnel turnover. Shared principles relevant for the quality of the relationship between project partners need to be ensured and transferred to

new staff. Attention for relational quality is not limited to frequent communication in the tender phase but requires constant consideration.

This study also has important theoretical implications. Its contribution is threefold. First, this study adds to the relatively limited body of knowledge on relational quality in the PPP literature. Using QCA, it systematically uncovers which conditions are jointly present in high-quality relationships in PPPs. Its contribution lies in particular in the attention for conjectural causation, as there are different combinations of conditions that explain relational quality rather than a single condition. Thus, this paper informs us on how high-quality relationships might be established in PPPs. The findings confirm the importance of network management and dividing risks in PPPs, showing that it does not merely affect performance, but also influences the quality of the relationship between project partners. Second, this paper contributes to the development of the concept 'relational quality'. Earlier use of the concept was either vague (referring to soft or relational aspects of PPPs), focused solely on the role of trust, or studied mainly the use of relationships in governing the partnership (e.g. relational governance, relational contracting) rather than studying the concept as such. This paper focuses on relational quality as a multi-dimensional concept, including both trust, openness, and communication. It provides an outset on how we can understand, operationalize, and measure the quality of relationships between partners. Finally, this study suggests that different project phases should be taken into account when studying relationships in long-term exchanges such as PPPs. Relationships in PPPs are long and dynamic. The ramifications of events from earlier stages of the project are ambivalent. Sometimes, agreements made in tender phase have an effect on the relationships between partners' years later. On other occasions, they seem not as essential. According to this study, risk allocation and the experience of the private partner prior to the start of the project are shown to influence relational quality in later stages, whereas the frequency of communication in the tender phase does not. Although not all conditions from earlier phases are present in the solution formula, this study seems to indicate that events in the various phases, and the transition between phases might play a role in relational quality in PPP projects.

As with any study, this study also has its limitations. In the first place, our analysis failed to explain two projects with high relational quality (P13 and P21). A closer look into these projects reveals that in these cases most of the four conditions are absent. This could indicate that there are more conditions that might be relevant in explaining and understanding relational quality. Hence, a suggestion for future research would be to also include and test other potential antecedents of relational quality, such as the importance of shared norms and values, shared goals, or personnel turnover. Another issue concerns the dynamics of relationships between project partners in PPPs. Although we included conditions from different phases in the project to study,

respondents were only asked once to give their overall opinion on the quality of the relationship during the realization phase. This was asked towards or just after the end of the realization phase. However, relationships are dynamic, they have ups and downs and change during the course of the project. It is important to take these dynamics into account. Moreover, the realization phase is usually followed by a maintenance phase which can last up to thirty years. The relationships we studied will keep developing. Some might strengthen, while others will weaken over time. This study thus only takes a snapshot of the relationships in PPPs. Further research could include more longitudinal studies, for example using in-depth case studies, focusing on the changing dynamics of relationships and how they impact the performance of the project.

INTERMEZZO 4.

The previous two chapters have further developed the concept of relational quality. Whereas Chapter 3 provided a conceptualization of the concept, Chapter 4 studied a number of conditions that influence the development of high-quality relationships. But, why would it be useful to further develop and study the concept? Is it for public organizations worth investing in these determinants to build high-quality relationships in PPPs? Although one might argue that high-quality relationships are in itself relevant and important, it can also be seen as a means to an end. In particular when high-quality relationships can be used in the governance of PPPs, it might help to further enhance the performance of the partnership. This leads to questions about the effect of high-quality relationships on the performance of PPPs. The remaining chapters of this dissertation address these questions and focus on the relationship between relational quality and the performance of PPPs. The literature review has shown that several scholars see great potential in relational governance mechanisms and value the quality of relationships as an important feature of PPPs (see Parker & Hartley, 2003; Panda, 2016; Smyth & Edkins, 2007). Nevertheless, there are also studies who are more skeptical about the usefulness of relational governance and find no convincing evidence regarding its effect on the performance of PPPs (for an example, see Reeves, 2008). To contribute to the debate on the effect of relational quality and relational governance mechanisms on the performance of PPPs, Chapter 5 presents a quantitative study on this topic.

Chapter 5

What makes public–private partnerships work? Survey research into the outcomes and the quality of cooperation in PPPs

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ABSTRACT

Public–private partnerships (PPPs) are often regarded as the solution for time and budget overruns in large infrastructural projects, but not all are successful. This raises the question of what really makes PPPs work. Focusing on the role of relational aspects, this article examines the degree to which trust and managerial activities correlate to the perceived performance and cooperation process in PPP projects. A multilevel analysis of survey data from 144 respondents involved in Dutch PPP projects shows that both trust and management correlate significantly to the perceived performance of these projects. Moreover, trust is associated with a good cooperation process.

5.1. INTRODUCTION: TRUST AND MANAGEMENT AS CONDITIONS FOR SUCCESSFUL PPP

The last two decades have seen a growing trend towards the use of public–private partnerships (PPPs) to provide service delivery and realize large infrastructural projects. The suggestion that PPPs can realize more innovative projects more efficiently than traditional procurement forms is at the heart of this trend (Ghobadian et al., 2004; Hodge et al., 2010). Especially in the transport infrastructure sector – where projects are often confronted with time delays and cost overruns (e.g. Flybjerg, 2007; Cantarelli, 2011) – PPPs are used frequently. Just like the increased use of PPPs in daily practice, the academic interest in this phenomenon has grown.

Much research has been carried out on PPPs, but no generally accepted understanding of the concept exists (Hodge & Greve, 2007). Nonetheless, some aspects, including durable cooperation between public and private entities, shared risks, and joint production of either services or products, are shared in most definitions (see Savas, 2000; Klijn & Teisman, 2003; Hodge & Greve, 2005). Although a variety of definitions of the term public–private partnership have been suggested, this article uses the definition proposed by Klijn & Teisman (2003, 137), who defined a PPP as a *"cooperation between public and private actors with a durable character in which actors develop mutual products and/or services and in which risks, costs and profits are shared."* The variety of definitions possibly results from the many forms that PPP may take. From loosely coupled collaborations to strict contract-based partnerships, PPPs come in different shapes and sizes. Within this diversity, we focus on one of the most discussed forms: the DBFM(O) project. This type of partnership is characterized by long-term contracts integrating the different aspects of construction projects: the design, building, financing, maintaining, and – occasionally – the operation of the project (Van Ham & Koppenjan, 2002).

Research into PPPs has shown their potential but has also revealed mixed views on whether their supposed benefits work out in daily practice (e.g. Hodge & Greve, 2005, 2007). A much-debated question is what really makes these contract-based partnerships work. In much of the literature, the relative importance of the contractual form and the incentives within the contract are deemed relevant (e.g. Savas, 2000; NAO, 2002; Steijn et al., 2011). On the other hand, there is a growing body of literature that recognizes the importance of the relationship between contractual partners. These scholars highlight the importance of trust and managerial effort in establishing successful PPP projects (e.g. Huxham & Vangen, 2005; Kort et al., 2016). In another article, we analysed the impact of contractual characteristics on DBFMO (Design, Built, Finance, Maintenance and Operating) partnerships (see Klijn & Koppenjan, 2016[b]) and concluded that they were not significantly related to the (perceived) outcomes of partnerships. Using the same data – a survey among PPP professionals in the Nether-

lands – this article explores the other hypothesis: that the relationship between the partners is pivotal in successful PPPs.

Thus, this study sets out to assess the significance of relational aspects, more specifically the role of trust and managerial effort, for PPP performance. Therefore, the central question in this article is as follows: *What is the influence of trust among contracting parties in public–private partnership projects and the managerial effort in the project on the (perceived) performance of PPPs?*

This article first gives a brief overview of the theoretical arguments for the influence of trust and management on PPP performance. It then goes on to discuss the research design and methodology of our study. The fourth section is concerned with the results of the analysis. Finally, we present the conclusions and reflections on the research.

5.2. WHY TRUST AND MANAGEMENT MATTER IN PPP

This section first elaborates on the idea of performance in relation to PPP. It then deals with the question of why trust and managerial effort are potentially important for PPP performance. It concludes with some hypotheses that are tested against the survey data.

5.2.1. PPP: better performance and more cooperation

PPPs entail assumptions about better value for money and superior performance compared to more traditionally tendered projects (see Savas, 2000; Hodge & Greve, 2005). Nevertheless, the question remains as to how to define good performance. PPP performance can be conceptualized in roughly two ways.

On the one hand, a narrow definition of performance includes the achievement of particular targets and the efficiency in achieving those targets, such as on-time and on-budget delivery and increased efficiency, thanks to lifecycle optimizations. In contract-based PPPs, these targets can be found in the contract. The issue with this narrow definition is that it provides information on only a small part of the project. Scholars argue that project performance can also be conceptualized more broadly 'beyond the contract.' Focusing on the wider support for the project and the durability of the solution for the future adds an extra dimension to the concept of performance. As various scholars argue, several distinctive criteria are needed to assess PPP performance (e.g. Van Ham & Koppenjan, 2002; Skelcher & Sullivan, 2008). We follow that line of thought by combining five dimensions in measuring PPP performance. These dimensions have often been mentioned by scholars in earlier research (e.g. Skelcher & Sullivan, 2008; Steijn et al., 2011) and include effectiveness of the solution offered, support, integral character of the solution, robustness (durable solution for the future), and cost effectiveness (efficiency).

It is striking that both the narrow definition and the broader definition focus only on the outcome of the project by measuring performance. The crucial argument in the 'grey literature' (including audit commission pieces, consultancy reports, and policy documents) is that long-term contracts and private involvement lead to better cooperation and relations between (public and private) partners; this is also relevant for good PPP performance (see NAO, 2002; Algemene Rekenkamer, 2013). To take into account good cooperation as part of PPP performance, this study includes a number of indicators that focus on the cooperation between public and private actors (based on, for example, Huxham & Vangen, 2005; Skelcher & Sullivan, 2008). These include the resolution of conflicts between partnerships, the presence of deadlocks, and the gradual course of cooperation between partners during the entire process.

So, performance is not merely about on-time and on-budget delivery. It is a combination of good outcomes and good cooperation that will result in successful PPPs.

5.2.2. Trust in PPPs

One of the most important scholars of neo-institutional theory, an important theoretical underpinning of PPP, Williamson argues that trust is a more or less redundant concept in economic transactions based on contracts (Williamson, 1996). However, a wide and prominent part of the literature on contractual relations and alliances contradicts this statement, emphasizing the importance of trust in partnerships. This section provides more insight into the trust concept, explaining the concept and its relevance for PPPs.

As an intensively studied concept, trust is defined in many ways. In spite of the variety of definitions of trust, generally there is agreement on the idea that to trust a person is to expect that the other will refrain from opportunistic behaviour, even if the opportunity arises (Deakin & Michie, 1997; Deakin & Wilkinson, 1998). The trusting actor assumes that the other will take his/her interests into account, although he/she can never be certain about it (Rousseau et al., 1998; Nooteboom, 2002). This can be perceived as taking a risk, because the partner becomes vulnerable to opportunistic behaviour. This risk is taken in the belief that the other party can be trusted. When actors communicate openly about their intentions, honour existing commitments, or collaborate without misusing each other's vulnerabilities, trust will develop. Trust needs to be actively developed and maintained through interaction. Without interaction, trust will easily diminish (Giddens, 1984; Nooteboom, 2002).

Most authors agree that trust is inextricably related to risk. Without risk, the notion of trust is simply unnecessary (Rousseau et al., 1998; Lane & Bachman, 1998; Nooteboom, 2002). In contractual relations, partnerships, or other cooperative relations involving private and public actors, the actors are confronted with various risks. One of the risks is that an actor will abuse his power in the project or abandon the cooperation, forcing

the other actor to bear the costs. The strategic complexities in PPP make it difficult for actors to foresee all the possible contingencies, reason them out, or calculate them accurately (Deakin & Wilkinson, 1998; Koppenjan & Klijn, 2004). If there is trust in the partnership, the actors no longer need to calculate all possible negative outcomes, because they expect the other party to take their interests into consideration. Trust is crucial for partnerships to function properly. Without trust, it is unlikely that actors will engage in risk-taking behaviour because it can be 'punished' by opportunistic behaviour. Therefore, it is more difficult to reach satisfactory outcomes (Rousseau et al., 1998; Nooteboom, 2002; Bromily & Harris, 2006; Klijn et al., 2010). So, our first theoretical conclusion is that trust is an indispensable concept when studying PPPs.

A vast amount of literature on the role of trust in alliances (e.g. Sako, 1998; Bachman & Zaheer, 2006) and collaborative governance (Huxham & Vangen, 2005; Ansell & Gash, 2008) presents several arguments for the importance of trust in partnerships. First, trust facilitates cooperation. Because trust creates greater predictability, it reduces the risks inherent in transactions and cooperative relations (Sako, 1998; Nooteboom, 2002). Trust also reduces the necessity for highly detailed contracts. Thick contracts are costly and often inadequate in complex cooperation processes (Miles & Snow, 1986; Grabher, 1993; Parker & Vaidya, 2001). Therefore, very strict and detailed contracts are counter-productive for the development of creative ideas. When trust is present, partnerships can function with less detailed contracts, leaving more room for creativity (see Parker & Vaidya, 2001). The third argument for the importance of trust is that trust solidifies cooperation. Trust increases the probability that actors will invest resources like knowledge, time, and energy in the partnership, even when the return on investment is uncertain. From an economic perspective, this would constrain actors from investing, but the presence of trust creates stability in the relationship. This compensates for the uncertainty in partnerships and creates a strong basis for long-term cooperation (Ring & Van Der Ven, 1992; Sako, 1998; Parker & Vaidya, 2001). Fourth, trust enhances performance. As stated, trust stimulates the exchange of information and knowledge that is essential for facilitating the learning process and achieving new solutions (Nooteboom, 2002). In the literature, there is broad consensus on the idea that a learning process in which actors exchange information and learn from one another is critical to develop new solutions (Schön & Rein, 1994; Hajer & Wagenaar, 2003). So, trust can be seen as an efficient way to lower transaction costs in collaborations (Parker & Hartley, 2003). Trust therefore plays a major role in relational contracting, where formal contractual agreements are combined with more informal social mechanisms. At its best, relational contracting is based on high levels of trust, cooperation, informality, and shared problem-solving. Despite the fact that many PPPs (including DBFMO projects) are based mainly on transactional contract-based relationships, aspects of relational contracting and trust-based relationships may occur in these partnerships (Reeves, 2008).

5.2.3. The role of network management

Many scholars distinguish between project management (managing given contents and goals, and controlling time and budget) and inter-organization management, where both the relations between partners and those with the network around the project are managed (see Steijn et al., 2011). The latter form of management, often referred to as network management, is essential for organizing complex governance processes, such as PPP projects (McGuire & Agranoff, 2011; Klijn & Koppenjan, 2016[a]). Because of the complex nature of PPPs, network management activities or strategies are critical for achieving good outcomes (see O'Toole, 1988; Steijn et al., 2011; McGuire & Agranoff, 2011). This implies the use of internal management activities to manage the interactions between partners in the partnership, but also to manage the environment of the project. This argument builds on earlier research on strategic alliances that also emphasizes the importance of managing relational characteristics in order to achieve good results in partnerships (e.g. Borys & Jemison, 1989; Niederkofler, 1991).

If we see PPPs not only as an organizational construction but also as a network, the literature on network management is especially interesting because it also focuses on managing the network in which the project is embedded. In the literature on network management, frequently mentioned management and leadership strategies include initiating and facilitating interaction processes between actors (Friend et al., 1974), for instance, by activating (or de-activating) actors and resources. Moreover, management strategies encompass the creation and change of network arrangements for better coordination (Scharpf, 1978; Rogers & Whetten, 1982) as well as the realization of new content and win–win situations (Mandell, 2001), for example, by exploring new ideas, working with scenarios, organizing joint research, and joint fact-finding (Klijn & Koppenjan, 2016[a]). Finally, management strategies also include guiding interactions (Gage & Mandell, 1990; Kickert et al., 1997). The literature on collaborative governance and collaborative advantages mentions similar activities. Huxham and Vangen (2005) mention activities like mobilizing member organizations, dealing with power relations, empowering actors that can deliver collaborative aims, and trust building. Ansell and Gash (2008) mention strategies like committing to the process, creating shared understanding, and aiming for participatory inclusiveness.

Research shows that two types of network management strategies seem to have the most impact: exploring and connecting (Klijn et al., 2010; see, for comparable findings, Agranoff & McGuire, 2003). Exploring strategies are aimed at creating and looking at new solutions, collecting (joint) information, organizing research, and combining conflicting points of view. Connecting strategies are aimed at activating actors and resources, linking actors together, nurturing inter-organizational relations, and dealing with conflicts. We focus on these two strategies in this article.

5.2.4. Hypotheses about trust and management

The previous arguments lead us to the theoretical conclusion that trust, as an intention and a perception of actors, is positively correlated with performance in PPPs. Trust enables actors to share more information and innovate, and this results in better outcomes. Trust will also enhance the cooperation process, seen as cooperative activities. Actors will invest more in cooperation when the level of trust is higher, resulting in better cooperation between public and private actors. This results in the first two hypotheses:

H1: PPP projects with a higher level of trust between the public and the private partners will be characterized by a higher (perceived) performance.

H2: PPP projects with a higher level of trust between the public and the private partners will be characterized by better cooperation between the partners.

Network management strategies are expected to relate positively to both good performance and good cooperation. Intensive network management – by connecting actors and exploring content – will enhance the possibilities of actors finding satisfactory solutions and implementing them (better performance). Network management will foster cooperation, because coordination activities are being performed and attempts are being made to increase the mutual development of goals and the collection of information. We acknowledge that network management and trust could potentially influence each other over time. To deal with this issue, respondents were asked to rank the level of trust at the time of the survey. Respondents were asked to classify various network management activities in the project that had (usually) been performed in the past period. So, in our measurement, network management precedes trust. There are also theoretical arguments to perceive the relation in this way. Network management consists of deliberate, active interventions in the process to facilitate and stimulate the project interactions and outcomes, and to improve the relation between partners (see Huxham & Vangen, 2005; McGuire & Agranoff, 2011; Klijn & Koppenjan, 2016[a]). So, from a theoretical point of view, this seems to be the most logical correlation. Thus, our next two hypotheses are as follows:

H3: The more network management strategies are employed in PPP projects, the better the projects will perform.

H4: The more network management strategies are employed in PPP projects, the better the cooperation between (public and private) partners will be.

5.3. METHODOLOGY

5.3.1. Survey and variables

The data used in this article stem from a survey (March 2014–June 2014) among Dutch practitioners involved in PPPs. In order to identify these practitioners, a list was compiled of all officially known PPP projects in the Netherlands by studying publicly available PPP databases in the Netherlands. These included databases of both ministries and ministerial support bureaus. So, the survey represents approximately the whole population of officially known Dutch PPP projects up to 2014. By including almost the entire population in our study, we avoid many of the issues with regard to representation as described in the total survey error framework (see, for example, Groves & Lyberg, 2010 or Lee et al., 2012). Coverage or sampling errors, which arise in the process of selecting a sample from a target population, are therefore most likely not present in our study. Subsequently, respondents who were directly involved in these projects were selected to participate in the study. These potential respondents worked mainly for the public commissioning authority or the private contractor, for example, as project manager, contract manager, or technical manager. However, respondents who were involved in an advisory role – working for consultancy or law firms – were also selected. All respondents were closely involved in (a specific phase of) one of the PPP projects.

In total, 343 respondents involved in 93 PPP projects received a request to fill in the survey. With a response rate of 46.6%, 144 respondents filled in the survey. These respondents worked for 68 different Dutch PPP projects, of which the majority were DBM or DBFM(O) projects. Consequently, the survey covered 73% of the then existing PPP projects in the Netherlands. Because of this response rate, the risk of nonresponse error might be less of an issue in this study (Lee et al., 2012). With 144 respondents answering questions about 68 projects, there were multiple respondents per project. In the section on 'Data analysis,' we discuss the implications of the multilevel structure of the data for the data analysis. As stated, the respondents were mainly employed in public organizations (45.8%) or private contracting parties (27.1%). The other respondents worked either for consultancy firms (13.2%) or for non-profit organizations (11.8%) such as housing associations or resident associations. In small-scale local projects in particular, these stakeholders are involved in the project. The respondents had considerable experience working in complex projects, asserting that, on average, they had 14 years of experience with such projects. Some of the respondents were involved in multiple PPP projects, and so, each respondent was asked to select just one of their projects and answer all questions with that specific project in mind.

5.3.2. Measurement

Perceived project performance

The measurement of project performance poses some challenges. First of all, projects generally consist of various actors; this means that multiple goals are present within a single project. Because of the various actors' different interests, it is difficult to select one overarching goal in which all actors feel represented. Furthermore, projects usually have a lengthy time span. Consequently, actors' goals are likely to change over time consequent to a readjustment of preferences as a result of learning or goal displacement (Klijn & Koppenjan, 2016[a]). Additionally, it is not possible to assess objective outcomes with surveys that measure respondents' perceptions. Therefore, perceived project performance is taken as a proxy for outcomes. In this approach, we follow the work of Klijn et al. (2010). Their measurement scales build on different dimensions of project performance, listed in Table 5.1. The mean score for perceived project performance, as rated by project respondents, is 4.00 (SD = 0.51) on a 5-point Likert scale, indicating a high satisfaction with the performance of their project.

Dimension	Term	Item
1. Integral nature of solution	INT	Different environmental functions have been connected sufficiently
2. Effectiveness of solution	EFF	Solutions that have been developed really deal with the problems at hand
3. Effectiveness in the future	FUT	Developed solutions are durable for the future
4. Support for solution	SUP	The project solutions are sufficiently supported by the involved organizations
5. Relation costs and benefits	RCB	In general, the benefits exceed the costs

Table 5.1 Measurement of perceived project performance (Cronbach's alpha = 0.71)

Cooperation between public and private actors

As stated earlier in this article, the assumption behind PPPs implies that PPPs result not only in more efficient outcomes, but also in better cooperation between the partners. Therefore, the performance of PPPs should be measured not only in terms of outcomes, but also in terms of process. Therefore, this study includes process criteria in order to measure the cooperation between public and private actors in PPPs. As performance based on output is substantially different from good cooperation in the PPP process, the different indicators used to construct both variables cannot be combined. Although the correlation table (see Appendix IX) points towards a medium correlation between the variables, an exploratory factor analysis, presented in the section on 'Network management', clearly shows that performance based on output and performance based on cooperation are different concepts and that both are also perceived differently by the respondents. Therefore, we include both concepts as two

different variables in the analysis. The respondents' perceptions on output-based performance are referred to in this study as perceived project performance, and their perceptions of the process are labelled as cooperation. Regarding the process criteria, both the presence of deadlocks and the way conflicts are settled during the process are used as indicators for the quality of the cooperation between actors. Table 5.2 provides an overview of the dimensions used to measure cooperation, which has a mean score of 3.40 (SD = 0.76) on a 5-point Likert scale.

Dimension	Term	Item
1. Managing internal conflicts	MIC	The actors involved in the network have succeeded in managing internal conflicts and disagreements in an adequate manner
2. Presence of deadlocks	PDE	I did not experience any cumbersome deadlocks during the process
3. Course of cooperation	CCO	The actors have improved the cooperation process over the past years

Table 5.2 Measurement of cooperation between public and private actors (Cronbach's alpha = 0.70)

Trust

To measure trust between the contract partners within the project, a 10-point scale was used in which respondents rated the amount of trust varying from (1) 'There is no trust between public and private partners' to (10) 'There is a lot of trust between public and private partners'. The mean score of this variable is 6.67 (SD= 1.93) on a 10-point Likert scale.

Network management

This study also focuses on the relation between network management and the cooperation within, and the performance of, PPPs. In order to do so, a number of items (see Table 5.3) on network management focusing on coordination activities within the project are included. Management activities that focus on external stakeholders are not taken into account. The mean score for management is 3.87 (SD= 0.57) on a 5-point Likert scale.

Dimension	Term	Item
1. Defining principles	DPR	When information is being collected, the focus is on developing and establishing common principles and information needs for both public and private actors in the project
2. nvolving partners	IPA	(Private) Contractors are consulted and involved in project management decisions
3. Communication	COM	Much time is spent on the communication between various actors
4. Aligning interests	AIN	During deadlocks and problems, the management focuses mainly on aligning conflicting interests

Table 5.3 Measurement of management (Cronbach's alpha = 0.70)

For the three variables consisting of more than one item (performance, management, and cooperation), an exploratory factor analysis was used to check whether the concepts are valid and reliable and whether the in-between correlations are higher than the correlations between the variables. The factor analysis (Table 5.4) shows that the items form good constructs and that the variables do not overlap. As theory offers clear directions towards the underlying relations between the items, we also employed a confirmatory factor analysis (CFA) – which is generally more strict – to check for the validity of the constructs. The CFA showed that most items loaded on their construct with a score >0.6, but all of the items displayed scores above 0.4, which is sufficient.

Construct	Term	Perceived performance	Management	Cooperation	Cronbach's Alpha
Management	DPR	.030	.605	.078	0.70
	IPA	.199	.747	.043	
	COM	.021	.792	.034	
	AIN	.181	.621	.452	
Cooperation	MIC	.296	.132	.699	0.70
	PDE	.114	-.042	.790	
	CCO	.211	.231	.679	
Perceived performance	SUP	.587	.001	.198	0.71
	INT	.692	.098	.146	
	EFF	.742	-.059	.339	
	FUT	.713	.213	.284	
	RCB	.576	.333	-.118	

Table 5.4 Exploratory factor analysis (principal components approach with Varimax rotation[a]
a. Principal components analysis assumes that the sample used is the population, which is the case in this survey as we included all known PPP projects up to 2014. As it is not the aim of this factor analysis to generalize the findings beyond the data in this survey, the use of principal components analysis seems fit for this study. As the different variables are unrelated rather than dimensions of the same concept, Varimax rotation is preferred over oblique rotation.

Control variables

In the analysis, three control variables that may be associated with performance and cooperation in PPP projects are included (see Table 5.5). These control variables were selected on two different analytical levels. On the one hand, we controlled for a variable at project level, namely, project phase. This was measured by asking respondents which phases of the project had already been completed, so that we could correct our results for project phase. To include this variable, we added a dummy variable called 'projects phase.' All projects that had completed the realization phase and were thus in either the maintenance or operational phase, were scored with a '1'. All projects that were still in the construction phase, or even in the tendering phase, received a '0'. We also tested other dummy variables; for example, we included projects in the construction phase in the list of projects scoring a '1'. Only projects in the tendering

phase then received a '0'. However, this did not lead to any significant changes in the results of the analysis.

On the other hand, control variables at individual respondent level were taken into account, including respondents' organizational background (public organization, private organization, and other). This variable allowed us to control for the fact that respondents worked for either the public commissioning authority or the private contractor. Again, a dummy variable was used. In the dummy variable, called 'public,' all respondents working for the project sector scored a '1' and all respondents who worked in the private sector, for consultancy firms or other organizations, a '0'. Finally, the technical complexity of the project was included. Although this might seem a variable at project level, we included this variable on the individual level, because this variable includes each respondent's individual perception of the technical complexity of the project. The respondents' perception of technical complexity varied depending on individual factors, such as their technical knowledge and their previous experience with technically complex projects. So, the technical complexity of a project may be scored differently by the respondents involved in the project. With regard to scoring the technical complexity of the project, respondents were presented a 10-point scale on whether the project was characterized by high or low technical complexity. The expectation was that, in more complex projects, respondents would find it more difficult to cooperate well and achieve strong performances.

Variables	Term	Item
1. Project phase	PPH	What activities in the project are already completed?
2. Technical complexity	TCO	The project is characterized by a high [low] technical complexity
3. Organizational background	ORG	In what type of organization do you work?

Table 5.5 Control variables

5.3.3. Data analysis

The data have a nested structure because multiple respondents filled out the survey per project. The individuals in the survey worked for projects, which themselves had characteristics that may influence the study. Consequently, we have a two-level model with measurements on person level (n = 144) and project level (n = 68), making it likely for the answers of the respondents involved in the same project to be somewhat similar. This conflicts with the idea that surveys should result in completely independent observations. To account for the fact that there were multiple respondents for each of the projects, we performed a multilevel analysis instead of a regular regression analysis. As hierarchical linear modelling (HLM) is much better suited to dealing with multilevel analysis, HLM was used to test our hypothesis. In order to find a statistical justification for running HLM, the null models were provided (see Appendix X for the

tests). As the chi-square tests for both dependent variables were significant, there was variance in the outcome variable by the level-2 groupings (project level). The results of both the test using performance as a variable ($x2 (49) = 119.73$, $p < .001$) and the test using cooperation as a variable ($x2 (49) = 107.36$, $p < .001$) supported the use of HLM. Examination of the between-project and within-project variance components of the variables also justified the multilevel approach in HLM. The scores of individuals within projects were significantly more similar than the scores of individuals between the different projects. For perceived project performance, the within-project variance was 40%. This result suggests that 40% of the variance in perceived project performance is attributable to group membership. Sixty per cent of the variance was at individual level. For cooperation, the intercept resulted only in a slightly lower within-project variance of 36%.[9] These levels of within-project variance justify the multilevel approach. To test our hypotheses, the full maximum likelihood procedure in HLM was used.

5.3.4. Common Method Bias

In the survey used in this article, respondents answered questions regarding both the dependent and the independent variables. There is therefore a risk of inflated relationships between the variables, as a result of the measurement method causing variance. This means that there could potentially be a measurement error, one of the errors described in the total survey error framework (see, for example, Lee et al., 2012). In this section, we address some measures in order to deal with the potential presence of common method bias.

As most of the variables in this study are based on individuals' perceptions, our variables are by their very nature perceptual (George & Pandey, 2017). Although this does not imply that common method bias is not an issue, it means that using a survey, even though it is a single data source, may still be an appropriate method (Podsakoff et al., 2012). A few characteristics of our survey limited the possibility of common method bias and other survey-related errors. First, by approaching almost the entire population, there is no chance of sampling errors in this study. Moreover, some procedural remedies were used to minimize potential common source bias (Podsakoff et al., 2012; Lee et al., 2012; George & Pandey, 2017). These include the use of different scales (both 10-point and 5-point Likert scales) and making sure that not all variables are presented on the same page of the questionnaire. With regard to common method variance, the correlation table (Appendix IX) shows a medium and significant effect between the main variables; this indicates that there is no strong inflation of the existence of common method variations to create strong common source bias. Finally, to test whether com-

9 Level 1 intercept variance divided by the total variance: .21086/(.21086 + .37682) = .35880

mon method bias was a problem, we conducted a Lindell and Whitney's test, the results (see Appendix XI) of which show that common method bias is not an issue in this paper.

5.4. RESULTS

In this section, the results of the analysis are presented. In order to study the role of trust and network management, two multilevel analyses were conducted. The first analysis used perceived project performance as the dependent variable. The second one focused on good cooperation as the dependent variable.

5.4.1. The relationship between trust, management, and perceived project performance

First, the role of trust and management with regard to perceived PPP project performance was studied. The results, presented in Table 5.6, show that both trust and management are correlated with the perceived performance of PPP projects. The coefficient score indicates that, when respondents score the independent variable one point higher, this also has a positive effect on perceived performance of the project – the dependent variable. This is true for both trust ($p < 0.05$) and management ($p < 0.01$), but management in particular is strongly related to perceived PPP performance. Moreover, the technical complexity ($p < 0.001$) of the project is also positively associated with perceived performance at the .001 level. When PPP projects are assessed as more complex by respondents, the higher their perceived performance for this project is. This might be related to the possible connections between various elements of the project. Technically more complex projects usually are projects where more different environmental aspects are combined. This is what makes the project more (technically) complex, but it also provides more possibilities for win–win situations and solving more than one (spatial) problem at once. Thus, these projects have more potential for good performance.

Independent variable	Coefficient	Standard error	p-value
Intercept	2.283	0.231	<0.001
Organizational level			
Project phase	0.073	0.102	0.478
Individual level			
Technical complexity	0.060	0.017	0.001***
Trust	0.070	0.030	0.024*
Management	0.208	0.074	0.007**
Organizational background	-0.083	0.084	0.330

Table 5.6 Multi-level analysis of perceived performance of PPP projects
*Note: *** p < .001; ** p < .01; * p < .05*
Note: N on project level is 68; N on individual level is 144.

5.4.2. The relationship between trust, management, and cooperation in PPP projects

PPPs are considered successful not only because of the way stakeholders perceive their project's performance, but also because of the way public and private actors cooperate during the process. Therefore, this section focuses on the role of trust and management in the cooperation between public and private actors in PPP projects. The analysis shows a slightly different result than the previous analysis focusing on PPP performance. In the first analysis, both trust and management were positively associated with the perceived performance of PPP projects. With regard to the co-operation of public and private actors within PPP projects, only trust is significantly correlated ($p < .001$) to the perceived cooperation in the projects (see Table 5.7). So, to ensure a smooth process and good cooperation between actors in PPPs, a high level of trust between actors seems to be very important.

Independent variable	Coefficient	Standard error	p-value
Intercept	2.210	0.566	<0.001
Organizational level			
Project phase	0.195	0.144	0.182
Individual level			
Technical complexity	-0.011	0.036	0.773
Trust	0.124	0.036	0.001***
Management	0.120	0.144	0.407
Organizational background	-0.207	0.143	0.154

Table 5.7 Multi-level analysis of cooperation in PPP projects
Note: *** $p < .001$
Note: N on project level is 68; N on individual level is 144.

The analysis also indicates that no control variable (respondents' organizational background, technical complexity of the project, and project phase) is significantly related to the cooperation between public and private actors in the project.

More strikingly, the analysis shows that – in contrast to trust – management is not associated with good cooperation. As the variable management includes management strategies aimed at cooperation between partners, such as involving partners in project management decisions, communication between actors, and aligning conflicting interests, the result is surprising. In order to clarify the relation between management and cooperation, the role of trust herein should be studied more closely. As trust is strongly related with the cooperation of actors in PPP projects, management may be indirectly associated with cooperation, because the various management activities may influence the amount of trust between partners. As stated in the section on network management, building trust is one of the many existing management activities.

Therefore, a Pearson's correlation test of the relation between management and trust was conducted; Table 5.8 shows the results. There is a moderate (0.438) yet significant ($p < .001$) correlation between management and trust. This suggests that management could indeed be indirectly correlated with the cooperation between actors in PPPs by increasing trust between those actors.

Variables		Management	Trust
Management	Pearson's correlation	1	.438***
	Sig. (2-tailed)		.000
	N	121	121
Trust	Pearson's correlation	.438**	1
	Sig. (2-tailed)	.000	
	N	121	121

Table 5.8 Correlation between management and trust
Note: *** $p < .001$

Finally, a multi-level analysis (see Table 5.9) was run to assess the relationship between good cooperation and perceived performance in PPP projects. The analysis shows that good cooperation in PPP projects is associated with perceived performance of these projects ($p < .01$). This means that, the higher individuals score cooperation with partners, the better their perception of the performance of the PPP project. Both the technical complexity of the project and management are positively associated with perceived performance, although the level of significance of network management differs slightly compared to the original analysis (.05 rather than .01). Note that trust is no longer significantly correlated with perceived performance now that cooperation is added to the analysis.

Independent variable	Coefficient	Standard error	p-value
Intercept	1.938	0.274	<0.001
Organizational level			
Project phase	0.029	0.102	0.780
Individual level			
Technical complexity	0.063	0.016	<0.001***
Trust	0.048	0.029	0.101
Cooperation	0.176	0.061	0.006**
Management	0.171	0.065	0.012*

Table 5.9 Multi-level analysis of cooperation, trust, and network management on perceived PPP project performance
Note: *** $p < .001$; ** $p < .01$; * $p < .05$
Note: N on project level is 68; N on individual level is 144.

5.5. CONCLUSIONS AND REFLECTIONS

From our analysis, we conclude that trust and management are important for both the perceived PPP performance and the cooperation between actors in those projects. Trust is associated with both perceived performance and cooperation. Network management is associated only with perceived performance. However, as the correlation test shows that management is correlated with trust, it may therefore be indirectly related with the cooperation between actors in PPPs via trust. Furthermore, the analysis shows that cooperation is positively associated with performance.

These results show the relevance of relational characteristics, to which limited attention was given at the start of the PPP debate. Initially, attention focused strongly on performance indicators, contract characteristics, and performance monitoring as important conditions for the success of PPPs. The results of this study, however, show that relational characteristics are at least as important and may even be more important, because recent research casts doubt on the influence of, for instance, contract characteristics (see Klijn & Koppenjan 2016[b]). Given the complexity of PPP projects and their often strong relation with their environment, and thus other affected stakeholders, this is not surprising however. PPP projects are of long duration, and many unexpected things can happen. This means that constant nurturing of the partnership, the ability to cope with unexpected events that are not specified in the contract, and managing relations are crucial for the project's success. On the basis of this study, this suggestion seems to hold for PPPs.

Of course, this research has its limitations. The study is based on a survey and thus on respondents' perceptions of PPP performance and the influencing factors. This also means that we have data on a very large number of projects, which is an asset, but we do not have in-depth detailed information about these cases. Also, we now know that management matters, but not the type of management strategies that are effective, and under what circumstances. Furthermore, as both the dependent variables (perceived project performance and cooperation) and the independent variables (trust and management) are measured using the same survey, common method bias might occur. We tested for this with a marker variable, and that showed that common method bias probably is not a very big problem. Another issue is that we had only one item available for measuring trust, whereas many authors argue that trust has several dimensions (see Sako, 1998; Klijn et al., 2010). Finally, we should address the fact that the cross-sectional nature of our data implicates that causality and endogeneity cannot be ruled out. Although this should not stop researchers from doing this type of research, it means that the results of our study should be viewed in terms of correlations between variables, rather than precise effects. Therefore, we suggest the use of

longitudinal data or survey experiments to deal with these issues in further research into this topic.

Despite these limitations, this article generates some very interesting results that contribute to the discussion about the conditions under which PPPs are effective and produce good outcomes. It nuances the early PPP literature and sets the stage for further research on the relational aspects of partnerships. Further research should perhaps focus on the precise interplay between (network) management and trust and also on their combined influence. It may very well be that, for instance, one of these conditions is very crucial for the other to have effect. Multiple case studies and qualitative comparative analysis could provide more precise answers to this question. This type of research may gain more in-depth knowledge about the quality of the relationships in PPPs and the management strategies that may contribute to this.

INTERMEZZO 5.

The previous chapter has shown that relational governance mechanisms, in particular trust and network management strategies, contribute to better collaboration and better performance of public–private partnerships. It thus indicates that high-quality relationships within PPPs are relevant. The outcomes of this study are in line with earlier studies that test the effects of trust and network management. However, although relational governance mechanisms might be important, we cannot ignore the role of contracts in PPPs. They are an often used mechanism. Many PPPs in most countries are designed using elaborate contracts (e.g. Romboutsos, 2015; Verhoest et al., 2015). Examples are the PFI in the UK, and similar long-term infrastructure contracts in Australia, Canada and Western Europe (Verhoest et al., 2015). Since the prominent role of the contract in most PPPs cannot be ignored, it means that relational quality needs to be studied within a contractual context. This raises the question as to how contractual and relational governance mechanisms relate to each other. Can these mechanisms be combined in PPPs, and if so, how? The study presented in the next chapter aims to provide an answer to this question. Just like in the previous chapter, we test some elements of relational quality – in this case trust and conflict management – to see how they contribute to the performance of PPPs. In contrast to Chapter 5, this time these conditions are not studied in isolation, but in conjunction with contractual governance mechanisms such as the allocation of risks and the (strict) application of sanctions. Using a fuzzy set Qualitative Comparative Analysis (fsQCA), Chapter 6 is able to identify specific combinations of conditions that are present in high-performing PPP projects. As the final empirical chapter, it builds upon the previous studies in this dissertation, combining the relevance of relational quality, the effect of relational governance on PPP performance, and the contractual context of most PPPs, into one study.

Chapter 6

Mix and match: How contractual and relational conditions are combined in successful public–private partnerships.

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ABSTRACT

In explaining public–private partnership (PPP) performance both contractual and relational conditions play a role. Research has shown that these conditions may complement each other in successful PPPs. However, which specific combinations of conditions and how these combinations may influence PPP performance remains unclear. Building on the ideas of neo institutional economics, principal–agent theory, relational contracting and governance theories, this article explores the mix and match of contractual aspects and relational characteristics in successful PPP projects. A fuzzy set Qualitative Comparative Analysis (QCA) of 25 PPP projects in the Netherlands and Flanders (Belgium) was used to test how contractual factors, such as the use of sanctions and risk allocation, and relational conditions, such as trust and conflict management, jointly shape the performance of public–private partnerships. The results show three different combinations of conditions that match with high-performing PPPs. These configurations often consist of a mix of contractual and relational conditions, which confirms our initial expectation that these factors complement each other, but a combination of only relational conditions is also present.

6.1. INTRODUCTION

Despite the frequent use of public–private partnerships (PPPs) in many countries, there is still no unanimous judgment on the performance of PPPs (Hodge & Greve, 2017[b]). Both the question whether PPPs are a success and the question what makes PPPs successful cannot be answered unanimously. Scholars have identified a long list of critical success factors for PPP performance (for an overview, see Osei-Kyei & Chan, 2015) from which two main categories can be distinguished. On the one hand, a wide stream of literature emphasizes the importance of contractual conditions: a well-written contract, the possibility to impose sanctions, clear performance indicators, and the allocation of risks (Pollitt, 2002; Koppenjan, 2005). The main inspiration for these factors stems from neo-institutional economics and principal–agent theory, which emphasize rational and possibly opportunistic behaviour and the need to control this behaviour (e.g. Jensen & Meckling, 1976; Williamson, 1996). On the other hand, the literature on (network) governance and relational contracting has paid much attention to the process of cooperation, especially to the importance of trust, to make these partnerships work (e.g. Ring & van der Ven, 1992; Poppo & Zenger, 2002; Huxham & Vangen, 2005). Relational characteristics such as trust, informal communication, and openness are considered important for PPP performance.

There are various empirical studies on either contractual aspects (Bing et al., 2005[b]; Da Cruz et al., 2013) or relational partnership characteristics (Smyth & Edkins, 2007; Warsen et al., 2018). Other studies propose the idea that PPPs could benefit from a mix of contractual and relational conditions (see for example Parker & Hartley, 2003; Brown et al., 2016). However, more detailed theoretical notions and empirical studies on how specific combinations of contractual and relational conditions influence partnership's performance are hard to find (for an exception, see Kort et al., 2016). This article tries to fill this gap and contributes to the existing literature on PPP performance by providing empirical evidence on how contractual and relational characteristics mix and match with high-performing PPP projects. Our theoretical contribution lies thus in specifying which exact combinations of contractual and relational conditions are present in successful public–private partnerships. This way we aim to refine the existing theories. To explore how and which contractual and relational conditions complement each other in achieving PPP performance, this article focuses on the role of two important contractual conditions, namely the allocation of risks and the application of sanctions in managing contracts (see Savas, 2000; van Slyke, 2006), and of two relational characteristics: trust (Ring & van der Ven, 1992; Sako, 1998; Klijn et al., 2010) and conflict management (Omobowale et al., 2010).

To analyse which mixes of conditions actually match with successful PPP projects, we conducted a fuzzy set qualitative comparative analysis (fsQCA) using data on 25

PPP projects in the Netherlands and Belgium. Assessing the combined impact of conditions is one of the main strengths of QCA.

In this article we first discuss theoretical starting points underlying PPPs and how contractual and relational conditions might complement each other in successful partnerships. In part two, we explain the research method and the data used in this study. Part three focuses on the main results of the QCA. Conclusions and reflections on the outcomes of the analysis are provided in the final part of our paper.

6.2. EXPLAINING PPP PERFORMANCE

Public–private partnerships (PPPs) can be found in many varieties (see Hodge et al., 2010). In this article the focus is on PPPs in the narrow sense, that is, as individual projects in which public and private partners jointly work to realize products and services and share the accompanying benefits, costs, and risks (Hodge et al., 2010). Many of these projects can be considered long-term infrastructure contract (LTIC) partnerships, which often include the design, build, finance, and maintenance of a specific product or service (e.g. a road, hospital, or school). These contracts are often referred to as DBFM(O) contracts (Design, Build, Finance, Maintain, and Operate) (Hodge et al., 2010).

6.2.1. PPP performance as multi-criteria phenomenon

Despite using a narrow concept of PPP, assessing the performance of PPPs remains a challenge. The existence of different views towards PPP performance is not only due to the different conceptions of PPP, but it is also the result of the multi-actor character of the partnership. Each partner joins the public–private partnership with their own interests and perspectives on the goals of the project. These goals may differ between partners and can even be conflicting at times. At the same time, partners need each other for the realisation of these goals. This mutual interdependency between partners (and relevant actors in the network around PPP projects) requires them to take these various goals into account (Bertelli & Smith, 2009; Klijn & Koppenjan, 2016[a]). Goals agreed upon in the contract, however, do not necessarily reflect the actual objectives of the involved actors. Moreover, partners will not necessarily use these goals as points of reference for their assessment of the performance of the partnership. In addition, the goals set at the beginning of a PPP project may change over time. Especially in long-term contract-based PPPs where years of tender and construction are followed by an even longer maintenance and operational phase the likelihood of changing goals is high (Parker & Hartley, 2003; Bertelli & Smith, 2009).

Rather than considering a single 'objective' goal as the ultimate yardstick for assessing PPP performance, the different goals that various actors pursue in the project should be taken into account (Klijn & Koppenjan, 2016[a]). This can be done by including the notion of 'satisfaction' as one of the criteria to assess PPP performance (e.g. Verweij, 2015). Establishing to what extent and why partners consider the partnership to be successful allows for the inclusion of multiple, contradictory, and dynamic goals.

6.2.2. Contractual and relational success factors for PPP performance

To assess PPP performance, scholars have tried to explain success and failure of PPP projects by determining critical success factors (e.g. Li et al., 2005; Jefferies, 2006). Several of these success factors are derived from relevant theories such as transaction cost theory, principal–agent theory, and literature on complex contracting and (network) governance.

The importance of well-written contracts and more specifically the role of performance indicators, sanctions and risk allocation in PPPs is strongly inspired by transaction cost theory and principal–agent theory. In these theories opportunistic behaviour plays an important role; hence, the rational behaviour of actors will lead them to use any situation to their own advantage. Especially when the exchange between parties, or more specifically between principals (clients) and agents (contractors), is characterised by incomplete information and information asymmetries, parties may use these asymmetries strategically (Williamson, 1979; Jensen & Meckling, 1976). To deal with this opportunistic behaviour, contracts are used to structure the exchange between principals and agents so they can both benefit from its win-win potential (Brown et al., 2016: 295). These contracts consist of both products' rules, specifying the features and functions of the product, and exchange rules, specifying what is needed to execute the exchange (Brown et al., 2016), such as agreements on performance, risk allocation, payments, and sanctions.

Two conditions that are included in the contract with the aim of preventing opportunistic behaviour are agreements on the allocation of risks and the possibility to employ sanctions (see Hodge & Greve, 2007; Ng & Loosemore, 2007; Akintoye et al., 2008). The literature on PPP emphasizes that the strength of a DBFMO contract lies in the requirement for private consortia to invest in the project, as a result of which risks are transferred from the public to the private partner (Bing et al., 2005[a]; De Palma et al., 2012). This adjustment in property rights creates strong incentives for the private partner to perform. Inspired by transaction cost theory and the principal–agent theory, the PPP literature considers sanctions to be a crucial ingredient of the contract governing the partnership. The possibility of applying sanctions provides the principal with steering options to make sure that the agent performs and abides by the contract. Without sanctions, principals would not have the means to mitigate op-

portunistic behaviour by contractors and the latter might not perform up to standard (Savas, 2000; Hodge & Greve, 2007). Thus, the possibility of employing sanctions, to keep contractors in line in projects where the contractor does not have all the necessary information, is crucial for good performance. Both risk allocation and sanctions fit in as mechanisms to prevent opportunistic behaviour and keep contractors in line.

However, the exchange between partners in these projects is usually rather complex. This makes it impossible to write down all product and exchange rules, because neither client nor contractor can foresee and regulate all contingencies that may impact the realisation of the project upfront (Bertelli & Smith, 2009; Brown et al., 2016). This results in incomplete contracting. Combined with uncertainty and specific investments in the project, this may lead to a complex contracting challenge (Brown et al., 2016). To fill the gap left by incomplete contracts, relationships are pivotal in ensuring good performance. The role of 'soft' or 'relational' conditions is highlighted in literature about collaborative governance, network governance, and relational contracting. The latter theory builds on neo-economic institutionalism, but acknowledges the incomplete nature of contracts. Rather than making the contract more extensive and detailed, relational contracting gives room to social relationships. Partnerships are embedded in social relationships. In these social relationships mutual trust and norms of flexibility, solidarity and sharing information are pivotal in ensuring good performance (Granovetter, 1985; Deakin & Wilkinson, 1998; Poppo & Zenger, 2002; Zeng et al., 2008). They allow partners to respond to exogenous shocks and enable partners to improve the formal arrangements in the contract (Bertelli & Smith, 2009). Literature on governance is often inspired by sociological institutionalism, acknowledging that actors do not exclusively behave according to the principles of economic rationality and following the logic of *consequences* by basing behaviour on cost-benefit calculations (Pierre & Peters, 2000; Huxham & Vangen, 2005). Instead, actors are also seen as intrinsically motivated, sensitive to expectations about role performance, social pressures, and norms and values like reciprocity, fairness, and legitimacy. Behaviour is based on a logic of *appropriateness*; actors behave according to what they see as appropriate and assess behaviour of others likewise (March & Olsen, 1984; Hall & Tayler, 1996).

Trust stands out as a core concept in all these bodies of literature, including theories about collaborative governance (Ansell & Gash, 2008), network governance (Provan et al., 2009; Klijn & Koppenjan, 2016[a]), and relational contracting theories (Deakin & Wilkinson, 1998; Poppo & Zenger, 2002). Trust can be defined as *"the expectation of an actor A that another actor B will abstain from opportunistic behaviour when the opportunity for it arises"* (Klijn et al., 2010: 196; see also Rousseau et al., 1998). If parties mutually trust each other, they are convinced their partners will not behave opportunistically. Therefore, they will be prepared to invest their resources in the joint collaboration,

share information and make investments in innovative, uncertain activities. Trust is then seen as a facilitating condition for performance in the sense that it mitigates opportunistic behaviour, facilitates the flow of information, and stimulates partners to invest in the project (see Ring & van der Ven, 1992; Sako, 1998; McEvily & Zaheer, 2006).

Both the collaborative governance and governance network literature also emphasize the importance of process management activities to manage the relationship between partners. Even despite high levels of trust or well-written contracts, conflicts are likely to emerge since actors have different perceptions and interests (Bertelli & Smith, 2009; Klijn & Koppenjan, 2016[a]). In contrast to transaction cost theory, which tends to deal with conflict through contracts and sanctions, the governance literature tries to solve conflicts using conflict management (see also Huxham & Vangen, 2005; Ansell & Gash, 2008). Conflict management includes the extent to which public and private partners adequately know how to mitigate and handle conflicts that arise during the project implementation, and prevent the escalation of these conflicts using conflict management strategies: bringing partners together, bridging differences by mediation and arbitration (Koppenjan, 2007). Conflict management implies the design and application of conflict regulation mechanisms beyond formal juridical procedures that are often lengthy, costly and inaccessible. It also implies identifying potential conflicts in a proactive way and taking measures before negative emotions and the rise of adversarial strategic positions turn disagreements into conflict (Fisher et al., 1997).

6.2.3. Which combinations matter?

Based on underlying theories on the exchange between public and private actors, complex contracting, and (network) governance we identified four core conditions that might be important for successful PPP performance. Research has shown that contractual and relational conditions are not mutually exclusive, but complement each other (see for example Poppo & Zenger, 2002; Edelenbos & Eshuis, 2012). Therefore, we now turn to the question of how these conditions may complement each other.

Using the idea that it is the combination of contractual and relational aspects that make PPPs successful, we expect that the presence of either risk allocation or the strict application of sanctions is necessary for outstanding performance, just as the presence of either trust or conflict management is necessary. The question then is how these conditions can be combined, and which combinations are sufficient for good PPP performance.

First, the combination of both contractual conditions, risk allocation and a strict application of sanctions, is not sufficient for good PPP performance, because contracts

are incomplete and lack the flexibility to deal with unforeseen events (Williamson, 1979; Bertelli & Smith, 2009; Brown et al., 2016). A well-balanced risk allocation to formally record each partners' responsibilities forms a strong incentive for both partners to perform, and thus certainly contributes to good results, but it is unlikely that it will be able to cope with all possible uncertainties. So, the agreements on the allocation of foreseeable risks made at the start of the project have to be complemented by a condition that can help deal with unforeseen circumstances during the project. Both trust, which would stimulate the exchange of information on these new emerging issues, and conflict management, as a constant way to monitor and deal with potential issues, could do so. They can facilitate the process to reach consensus on how to deal with unforeseen events and align both partners. This would suggest that a combination of risk allocation and trust, or a combination of risk allocation and conflict management are sufficient for good PPP performance.

Second, if we look at the governance network and collaborative governance literature, trust could almost be regarded as a necessary condition. This literature highlights the existence of high levels of trust as the way to cope with external shocks, unexpected events and the complexity of projects (Ansell & Gash, 2008; Klijn et al., 2010). Although many governance scholars consider trust as pivotal for collaborative processes, a combination of solely relational conditions seems also unlikely as trust needs time to develop and grow. Certainly in the first phases of a project, high levels of trust are not likely to be present. Formal agreements are then needed to realize the exchange between partners. The expectation, therefore, is that trust alone is not sufficient to achieve good PPP performance. Besides, previous research has shown that a successful partnership in the absence of trust is possible (Cook et al., 2005). This means that we expect trust not to be a necessary condition for successful public–private partnerships. It is also unlikely that conflict management on its own will be a sufficient condition, because the transaction costs of conflict management are high, especially in the absence of trust or any pre-defined contractual agreements on the role and responsibilities of the partners in the project.

That is not to say that trust and conflict management are not important in explaining the success of PPPs. If trust is lacking, the need for managing the relations will be very high to cope with uncertainty and unexpected events. This reinforces our expectation that either trust or conflict management is necessary for successful PPPs.

Based on the previously discussed theories, both sanctions and trust are mechanisms to enforce compliance, but they are rooted in very different ideas on how to deal with opportunistic behaviour and uncertainty (see for instance Lane & Bachman, 1998; Nooteboom, 2000). Whereas the transaction cost theory and the principal–agent theory primarily focus on the use of sanctions, governance theories opt for a more soft approach through the use of process management, emphasizing trust building

or conflict management. In this respect, the combination of a strict application of sanctions and trust seems unlikely as the implementation of sanctions has a risk of damaging trust (Ring & van der Ven, 1992). This means we may further specify our expectation that a combination of risk allocation and trust is sufficient for good PPP performance. Based on the above argument, the combination of risk allocation and trust, combined with the absence of sanctions, is expected to be sufficient for successful PPPs. Since sanctions, trust and conflict management might be able to replace each other as mechanisms to enforce compliance and deal with opportunistic behaviour, our expectation is that neither one of these conditions is a necessary condition for good PPP performance. The question then is if the remaining condition, risk allocation, is a necessary condition for successful PPPs. Is it possible to have well-performing PPP projects without a clear risk allocation? One could argue that this is possible, for example, when the risks do not occur during the project. This would lead us to expect that risk allocation is not a necessary condition for good PPP performance.

6.3. A FSQCA OF 25 PROJECTS IN THE NETHERLANDS AND BELGIUM

To test how contractual and relational characteristics jointly affect PPP performance, 25 PPP projects in the Netherlands and Flanders were studied. In this section we first elaborate on the empirical setting and the data collection. Next, the focus is on fuzzy set QCA, the analytical tool used in this study. Finally, we turn to the operationalisation and calibration of the conditions.

6.3.1. PPP projects in the Netherlands and Belgium

The data used to study the combined effect of contractual and relational aspects on PPP performance stems from 25 PPP projects in the Netherlands and Belgium (Flanders) that were examined in the period between June 2016 and April 2017. All projects can be categorized as long-term infrastructure contractual partnerships and include the design, build, and maintenance of a product or service. Most projects also include a private finance component (only a few projects use public financing), and in about half the projects, the operation of the service is incorporated as well. The projects are a balanced reflection of the existing PPP projects in the Netherlands and Belgium, including both transport infrastructure projects (roads, railways, and sluices) and social infrastructure projects (swimming pools, prisons, and government buildings) ordered by national and local governments. To be included, projects should be close to finishing the construction phase, in which case all important decisions with regard to the construction were made and most risks were mitigated, or in the operational

phase for less than 5 years. This allowed respondents to describe the course of the project and the performance thus far. Table 6.1 provides an overview of the selected projects ranged by country, type of project, and the level at which these projects are realized.

Country	Type of PPP	Level
The Netherlands (13)	Transport infrastructure (7)	National (7)
		Local (0)
	Social infrastructure (6)	National (3)
		Local (3)
Belgium (12)	Transport infrastructure (6)	National (6)
		Local (0)
	Social infrastructure (6)	National (2)
		Local (4)

Table 6.1. Characteristics of selected PPP projects

The data were gathered using different data collection methods. In total, we conducted 71 semi-structured interviews with 74 public and private professionals who are or have been closely involved in the particular projects. Prior to the interviews, respondents were asked to fill out a survey about the project. Of the respondents, 72 complied with this request. After the data collection, all interviews were transcribed and coded using Nvivo. Furthermore, we used official progress reports from the Dutch and Flemish government to check on time delivery of the projects.

6.3.2. Set-Theoretic Methods: a fsQCA

In this article, a fuzzy set Qualitative Comparative Analysis (fsQCA), which is a set theoretical method, is used to analyse the data. Set theoretic methods have a few defining characteristics. First of all, the relations between social phenomena are modelled in terms of set relations (Ragin 2000). Cases – which could be, for example, individuals, projects, or countries – are perceived as members or as non-members of a set. The processed data about the different cases reflect the membership of each case in a set. Thus, it establishes qualitative, rather than quantitative, differences between cases, which is a second characteristic of set theoretical methods. Finally, the results stemming from set theoretic methods emphasize the existence of causal complexity. Often there are several combinations of conditions that are able to produce the outcome (Schneider & Wagemann, 2012). In a fsQCA, relations are discussed in terms of necessity and sufficiency. When a condition is necessary, the outcome cannot be produced without the presence of that condition. Hence, every time the outcome is present, the necessary condition has to be present as well. Sufficiency means that the

presence of a condition always results in the outcome. However, the outcome may occur without the condition being present (see e.g. Schneider & Wagemann, 2012). The two main parameters of fit used to analyse results of a fsQCA are consistency and coverage. The first refers to the degree in which the empirical evidence supports the relations found. The latter explains how well the available empirical data is explained by the conditions, or in other words how many cases are covered by a single solution term (Schneider & Wagemann, 2012).

We choose to use a fsQCA for our analysis for several reasons. First, as stated above, a fsQCA is highly suitable for systematically analysing combinations of conditions (so-called configurations), which is congruent with the aim of this paper (Ragin, 2000). Furthermore, a QCA is applicable to use for a medium number of cases (Schneider & Wagemann, 2012). Unlike statistical analysis or comparative case studies, a QCA allows for the use of both in-depth case knowledge and identifying commonalities between cases by systematically comparing them (Verweij & Gerrits, 2013). Finally, a fuzzy set QCA is preferred over a crisp set QCA because, rather than only using dichotomous sets, fsQCA allows for different degrees of membership in sets. They include more nuanced information than crisp sets, distinguishing between differences in cases both in kind and in degree. This results in a higher content validity (Schneider & Wagemann, 2012).

6.3.3. Calibrating the conditions

In a fsQCA, conditions and outcomes are considered sets. During the so-called calibration process, each case will receive a score between 0 and 1 displaying its membership in each of the conditions and the outcome. Important in this process is the cross-over point of 0.5. Scores higher than 0.5 indicate that a case is “more in than out” a set, whereas scores below 0.5 mean that a case is “more out than in” that particular set (Schneider & Wagemann, 2012). This process results in qualitatively different cases. In this article, we used a fuzzy set scale with four scores ranging from full membership (1) via scores of 0.67 and 0.33 to full non-membership (0).

The calibration process requires in-depth case knowledge gathered by the researchers and theoretical knowledge about the conceptual meaning of the condition and its potential effect on the outcome. The calibration process is an interplay between theoretical reasoning and in-depth case knowledge (see for example Schneider & Wagemann, 2012). This results in strong links between theory and data and thus creates high content validity. Scholars from the Netherlands and Belgium shared their expertise about the 25 cases to ensure a careful calibration process. In addition to this case knowledge, robustness tests (see Appendix XIII) helped to control for potential measurement errors (Skaaning, 2011). In this article, we study outstanding performance in PPP projects, using risk allocation, the application of sanctions, conflict

management, and mutual trust between partners as conditions. In this section, we elaborate on how the four conditions and the outcome are calibrated (see also Table 6.2 and Appendix XII).

Condition	Components	Main data source	Principles guiding the calibration
Performance (OP)	- On time delivery - On budget delivery - Value for money - Satisfaction with performance	Survey data	- Different goals, so different indicators included. - Project should be a success for both partners. Disagreement in assessing performance results in lower set membership scores. - Qualitative interview data is used to adjust and check the scores.
Risk allocation (RA)	- Risk allocated to private partner - Risk allocated to public partner - Size of risk	Interview data	- Risks are formally allocated according to contract. - The underlying assumption is that partners should be able to carry the risks assigned to them.
Strict application of sanctions (S)	- Consistently imposing obligatory sanctions - Consistently imposing optional sanctions - Opportunities to discuss the application of sanctions	Survey and interview data	- Sanctions should be applied consistently, so partners know what to expect.
Conflict management (CM)	- Nature (formal/ informal) - Focus (prevention/ control) - Timing (proactive/ reactive) - Attention for potential sensitive issues	Interview data	- Use of informal mechanisms indicate extra effort to deal with conflicts. - In conflict management there should also be attention given to preventing conflict.
Trust (T)	- Honouring commitments - Giving partners the benefit of the doubt - Taking into account each other's interests - Intentions of partners - Use of efforts for their own gain.	Survey data	- Trust should be mutual. If one of both partners should experience little trust, there is no high level of trust within the project. - Respondents might have been hesitant to give low scores on this sensitive topic.

Table 6.2 Overview of calibration method

Performance

In this article we have defined successful PPPs as projects with outstanding performance (OP). To measure performance a combination of classic performance measures (on time delivery, on budget delivery, and value for money) and a softer operationalisation of perceived performance (satisfaction) was used (see Table 6.2). These four indicators are measured using survey statements with a 7-point Likert scale ranging from 'completely disagree' to 'completely agree'. Each indicator was calibrated separately. Based on the idea that a partnership should include benefits for both partners, we considered projects only to be successful if both public and private

partners state that the results of the project are good. Projects scored a full membership score of 1 when both public and private partners agreed with a positive statement regarding performance. Differences in opinion resulted in lower scores (0.67 for minor differences, 0.33 for major differences). If both partners agreed on insufficient performance, the project got a score of 0 for that specific indicator. Projects that were still under construction received a score of 0.51 (just 'in'), because – at the time of the data collection – the projects run according to planning and had no budget overruns so far. Moreover, there were no indications of expected delays of budget overruns that would potentially justify a score below the cross over point of 0.5. Projects under construction which already had severe time- and budget overruns were given a score below 0.5.

Afterwards, the calibrated indicators were combined to determine a score for the condition 'outstanding performance'. If a project had one or more negative scores on the 'objective' measurements of performance (i.e. 'on time delivery', 'on budget delivery', and 'value for money'), then the project received a score below the cross over point (see Appendix XII for the results of the calibration process). The item 'satisfaction' was used to determine the final score. Very low scores on satisfaction resulted in the lowering of the project score, while high satisfaction scores could lead to an increase of the performance scores. If the assessment of the 'traditional' performance measures and the satisfaction of the partners showed substantial differences, qualitative interview data was used to study the justification for these scores.

Risk allocation

One of the main principles behind risk allocation (RA) in PPPs is that risks should be allocated to the partner who is best able to carry or mitigate these risks (Bing et al., 2005[a]). Although many standardized contracts seem to suggest that most risks are to be transferred to the private partner, the unique context in which the project takes place, the perspectives of partners on risks, and the capabilities of partners to carry risks may result in different risk allocations for different projects. Therefore, in calibrating the condition risk allocation, we focus on the question whether the risks are divided between the public and the private partner (score > 0.5), or whether the private partner carries all the risks (score < 0.5). The underlying assumption is that risks should be assigned to the partner who is best able to control and carry them, resulting in a distribution of risks between both partners. Projects in which multiple substantial risks were divided between the public and the private partners scored a 1. A score of 0.67 was assigned to a project if only a few yet substantial risks were divided between the partners. A score of 0.33 was given when most risks were assigned to the private partner, while the public partner carried barely any risks, or only risks with a rather low risk profile. Finally, projects were given a set membership score of 0

when all risks were assigned to the private partner, regardless of whether the private partner was capable of carrying these risks or not.

Strict Application of Sanctions

Sanctions (S) are included in the contracts underlying PPP projects. The public partner is obliged to impose some of these sanctions on the private partner, for example, when the infrastructural project is not available. Besides these 'obliged sanctions', the contract includes a number of penalties which can be imposed, but where an alternative is also offered: the private partner is – instead of a sanction – given a recovery time by which the problem should be fixed. Membership scores are based on the use of both types of sanctions, using both qualitative data and quantitative data on the application of sanctions (see Table 6.2). Moreover, room for discussion between partners about the application of sanctions is taken into account. It might occur that partners within a project disagree on whether or not sanctions are imposed. They might have different situations in mind when answering the question, lack a complete overview of all imposed and not-imposed sanctions, or they might have a different opinion on when one 'deviates' from a rule. In these cases, the interview data on situations in which sanctions are (not) imposed is used to decide the membership score of the project.

Conflict management

In the calibration process of the condition 'conflict management', multiple dimensions of conflict management (CM) were included. First, the nature of the agreements on conflict management was taken into account. Having both formal and informal mechanisms instead of merely formal mechanisms indicates that extra efforts were made to manage potential conflicts. Second, the focus of conflict management mechanisms can be on preventing, controlling, or solving conflicts, or a combination of these. Conflict management should not only consist of measurements to solve conflicts after they arise; it should also include preventive measurements to manage difference of opinion so that these differences do not turn into conflicts. A third dimension is the timing of these agreements. Early implementation of agreements about conflict management points toward the recognition of the relevance of conflict management. It shows that the partners in the project anticipate the possibility that differences of opinion might end up in conflict. When agreements are drafted after an incident occurs, this is a sign of reactive behaviour, indicating that partners did not take sufficient precautions early on in the project. Finally, we focus on signals that indicate early attention for potential sensitive issues. Do managers bring up these issues at an early stage to leave enough time to discuss them? The qualitative interview data on the above dimensions is supplemented with quantitative data. By using the Generic

membership Evaluation Template (GMET) of Tóth et al. (2017) the data are calibrated (for an example, see Appendix XII). This template allows scholars to systematically evaluate cases on a single condition using predominantly qualitative data. A score of 1 was given if all dimensions were evaluated positively. The more dimensions were scored negatively, the lower the calibrated score.

Trust

In determining the set membership score for the condition trust (T), we used quantitative survey data of five indicators, each with a 10-point answering scale (see Table 6.2 for an overview, and for an extended explanation Appendix XII). These indicators are used and tested in prior research (see e.g. Klijn et al., 2010; Warsen et al., 2018) and form a fairly stable measurement to test trust. The condition trust was calibrated by adding up the scores of the five indicators for each respondent, resulting in scores between the minimum of 5 and the maximum of 50. Considering the mutual character of trust, we selected the lowest score on trust per project as the basis for a projects' set membership score in trust. This score was transformed into a membership score between 0 and 1, using the Tosmana thresholdsetter to gain insight into the clusters that exist in our data (Cronqvist, 2017). The thresholds suggested by the threshold setter are 24.75, 30.5, and 36.25. However, as these thresholds separate cases that, based on the empirical data, should be given similar scores, we adjust the scores slightly. The thresholds used in calibrating the condition of trust are therefore 25.01, a cross-over point of 30.5, and 40.01. The cross-over point is higher than the middle score of 25, as earlier research has shown that trust is a sensitive topic and respondents might be hesitant to give extremely low scores on this topic. Moreover, the relationship between public and private partners is an ongoing relationship in all PPP projects. Therefore, even though respondents who participated in this project are guaranteed anonymity, the prospect of an ongoing relationship might play a role in assessing the statements. Finally, since this condition is about high levels of trust, one might debate whether scoring half of the maximum number is considered a 'high' score.

6.4. RESULTS: WHICH CONDITIONS MATTER MOST?

The analysis was performed using the QCA and SetMethod packages in R (Medzihorsky et al., 2016; Dusa, 2017). A first step was to perform an analysis of necessity to test whether a single condition was necessary for outstanding performance in PPP projects. Following Ragin (2000), the minimal consistency benchmark for necessity is set at 0.9. As Table 6.3 shows, none of the four conditions (neither in its absence or presence) is a necessary condition for the presence of good PPP outcomes. Based on

our theoretical expectations, we also tested whether either risk allocation or sanctions (RA+S) or either trust or conflict management (T+CM) are necessary. The analysis shows that the latter is true.

Condition	Consistency	Coverage	RoN
Trust (T)	0.865	0.761	0.766
Risk allocation (RA)	0.676	0.757	0.840
Conflict management (CM)	0.675	0.658	0.741
Strict application of sanctions (S)	0.619	0.545	0.633
Absence of trust (~T)	0.483	0.542	0.736
Absence of risk allocation (~RA)	0.539	0.474	0.599
Absence of conflict management (~CM)	0.486	0.485	0.665
Absence of strict application of sanctions (~S)	0.622	0.697	0.808
Trust or conflict management (T+CM)	**0.920**	0.679	0.608

Table 6.3 Analysis of necessity for the outcome 'outstanding performance'

Next, we turned to the analysis of sufficiency. A distinction (see Table 6.4) is made between cases with a set membership score in the outcome above the cross-over point (0.5) and those with a membership score below the cross-over point.

Outcome	# cases	Cases
0	13	P1NG, P2BG, P3NTI, P4NG, P5BTI, P6BTI, P9NG, P10BTI, P11NTI, P12BG, P13BG, P16NG, P17BG,
1	12	P7NTI, P8NTI, P14NTI, P15NTI, P18NTI, P19BTI, P20NG, P21BTI, P22BTI, P23NG, P24BG, P25BG

Table 6.4 Set membership scores of cases in the outcome 'outstanding performance'

The truth table is then constructed (see Table 6.5). The truth table displays all logically possible combinations of conditions (configurations) and assigns the empirical cases to one of these configurations. For the truth table we selected a consistency threshold of 0.8. This is well above the required level of 0.75 (Schneider & Wagemann, 2012) and coincides with a gap in consistency scores visible in the data (see Vis, 2009). Given the limited number of cases, we use a frequency threshold of 1 (based on Ragin, 2008).

Initially, this leaves us with eight configurations for the analysis. However, further study of Table 6.5 shows that a number of logically contradictory truth table rows exist with a consistency score above the threshold of 0.8 (e.g. row 12 and 16). The empirical material shows that the configuration presented by that specific truth table row produces both the presence as well as the absence of the outcome. Despite attempts to solve these contradictory truth table rows prior to the analysis (e.g. by adding

conditions and recalibrating the conditions and/or the outcome), the contradiction remains. Therefore, we deal with these rows during the process of logical minimisation (see Schneider & Wagemann, 2012: 120-123). In deciding which rows to include and exclude from the analysis, we plot each truth table row against the outcome to see whether there are deviant cases consistency in kind (true logical contradictions). Two truth table rows, row 12 and 10, only include deviant cases consistency in kind (respectively P13BG and P9NG). The consistency level would allow us to include the row, but the only empirical case assigned to this configuration is not a member of the outcome. The consistency value is only driven upward by cases that are not members of the truth table row. Therefore, we declare these rows insufficient for the outcome 'outstanding performance'. Truth table rows 14 and 16 also include deviant cases consistency in kind (respectively P10BTI and P11NTI). However, the decision here is less clear cut since the other cases assigned to the truth table rows are consistent members of both the row and the outcome. Thorough study of the qualitative data on P10BTI and P11NTI shows that these cases perform quite well, and just fall out of the set of outstanding performance because one of the partners went over budget to realize the projects. On all other aspects of the outcome, the projects score fairly well. Therefore, we decide to include the truth table rows 14 and 16 in the minimisation process. This means six configurations are included for the analysis, namely row 15, 8, 14, 16, 11 and 13 (see Table 6.5).

Row	T	RA	CM	S	Outcome	N	Incl.	PRI	Cases
15	1	1	1	0	1	3	0.929	0.859	P7NTI, P14NTI, P18NTI
8	0	1	1	1	1	1	0.909	0.801	P20NG
14	1	1	0	1	1	2	0.898	0.796	P10BTI, P23NG
16	1	1	1	1	1	3	0.865	0.714	P11NTI, P15NTI, P24BG
10	1	0	0	1	0	1	0.855	0.596	P9NG
11	1	0	1	0	1	1	0.847	0.602	P8NTI
12	1	0	1	1	0	1	0.844	0.596	P13BG
13	1	1	0	0	1	1	0.834	0.752	P22BTI
6	0	1	0	1	0	1	0.798	0.596	P6BTI
9	1	0	0	0	0	5	0.713	0.556	P5BTI, P12BG, P19BTI, P21BTI, P25BG
3	0	0	1	0	0	1	0.614	0.166	P1NG
2	0	0	0	1	0	5	0.546	0.179	P2BG, P3NTI, P4NG, P16NG, P17BG
1	0	0	0	0	?	0	-	-	-
4	0	0	1	1	?	0	-	-	-
5	0	1	0	0	?	0	-	-	-
7	0	1	1	0	?	0	-	-	-

Table 6.5 Truth table for the outcome 'outstanding performance'

Then, the six remaining configurations were minimised into solution formulas that explain which configurations are sufficient for the outcome. The conservative solution term in Table 6.6 shows three different configurations which may lead to outstanding performance in PPP projects. Each of the configurations explains at least one truth table row, which is not explained by the others.

Configurations →	Path 1	Path 2	Path 3
	T*RA	RA*CM*S	T*CM*~S
Consistency	0.845	0.823	0.901
Raw coverage	0.594	0.377	0.485
Unique coverage	0.109	0.028	0.135
Solution consistency	0.823		
Solution coverage	0.757		

Table 6.6 Solution for outstanding performance[10]

The consistency scores for each single configuration and for the entire solution term are rather high. In fact, 82.3 percent of the empirical evidence is in line with the solution term. Moreover, 75.7 percent of the outcome 'outstanding performance' is covered by one or more of the three configurations. The intermediate solution term[11] is identical to the conservative solution term presented above, while the most parsimonious solution term only shows minor differences (see also Appendix XIII).

The first configuration consists of the combination trust and good risk allocation (T*RA). It suggests that after a clear risk allocation has been determined mutual trust between partners throughout the project is sufficient to result in outstanding performance. The second configuration (RA*CM*S) combined two 'hard' conditions (risk allocation and strict application of sanctions) with one 'soft' condition (conflict management). If there are fair and clear agreements regarding risk allocation, which are enforced (through strict application of sanctions), and there are agreements on how to proceed in case of disagreement or conflict, high levels of trust are not essential. Finally, the third configuration (T*CM*~S) is all about relational aspects, thus combining 'soft' conditions such as trust and conflict management, with the absence of strict application of sanctions. This configuration indicates that relational aspects are very important for the success of PPPs. When partners trust each other and have

10 Note: The ~ before a letter refers to the absence of a condition. So, in path 2 the S refers to the presence of strict application of sanctions, while in path 3 ~S indicates the absence of strict application of sanctions.

11 The intermediate solution term (T*RA + RA*CM*S + T*CM*~S) includes the expectation that all conditions have a positive effect on the outcome. The most parsimonious solution term (T*RA + RA*CM + T*CM*~S) shows minimal differences from both other solution terms.

a well-organized conflict management with early attention given to sensitive issues, the absence of strict application of sanctions is necessary to provide partners with the opportunity to propose a solution based on their good relationship. The flexibility implied by the absence of strict application of sanctions is used to create solutions that enhance PPP project performance. Mutual trust ensures that this flexibility does not lead to opportunistic behaviour from either one of the partners.

Closer study of the configurations shows that only project P19BTI, P21BTI and P25BG are not explained by this solution formula. These projects display high levels of trust, but are not in the set for any of the other conditions. Although these cases have an outstanding performance, two other PPP projects (P5BTI, P12BG) with the exact same set membership scores in the conditions fail to deliver. Four of the other projects with outstanding performance are uniquely covered cases, meaning that they hold a membership value higher than 0.5 in only one sufficient path (Schneider & Wagemann, 2012). For the first path (T*RA), these are P22BTI and P23NG. Case P20NG is only covered by path 2 (RA*CM*S), and case P8NTI only holds a membership value over 0.5 in path 3 (T*CM*~S). As a result, the unique coverage is rather low, especially in path 2. Only 2.8 percent of the outcome is explained specifically by this path, because three of the four cases covered by path 2 also display high levels of mutual trust (T). These cases are therefore also covered by path 1, so the three paths partially overlap. Several cases hold a membership value higher than 0.5 in multiple paths (e.g. projects P7NTI, P14NTI, and P24BG). These cases are always explained by path 1 (as a combination of path 2 and 3 is impossible). As a result, path 1 consists of a mix of different projects where there usually is both a decent relationship between partners and well-considered agreements on the execution of the project. The difference between all cases covered by path 1 might be explained by the way projects deal with the use of sanctions. In some projects, it is commonly accepted to impose sanctions strictly as it is in line with earlier made agreements. Applying sanctions consistently thus results in clarity and predictability and therefore is not considered to be negative. These projects are not only covered by path 1, but also by path 2. Projects that are covered by both path 1 and path 3 are inclined to be less strict in the application of sanctions as a token of good will, for example when an issue does not cause any hindrance to the project partners or other stakeholders. Furthermore, path 3 stands out as it is the only path that does not display a combination of contractual and relational aspects. Instead, it builds on both relational conditions, trust and conflict management. The case that is uniquely covered by this path is very conscious of the importance of good personal relations between partners. Therefore, it pays a lot of attention to the relationship between the partners and organizes activities to build up and maintain good relations and high levels of mutual trust. This is much less the case for the project that is uniquely covered by path 2. The focus is predominantly on the

final product. The relationship between client and contractor is not so much a 'we'll work it out together'- attitude, but more business-like. Although a good relationship is possible, this is not the main focus of the partners working in the project.

Moreover, as the cases in our study consist of different types of PPP projects in two different countries, we tested the outcomes for the existing clusters in our data to see if the results vary over the different clusters (see also Appendix XIII). It is noticeable that there seems to be little difference across countries or project types. The analysis shows no signs of strong differences across country or between project types. There is only a small degree of heterogeneity between country and project type for the path RA*CM*S. Finally, we did a cluster analysis for differences between cases on a local and national level. The analysis shows no sign of differences between these clusters.

6.5. CONCLUSION AND DISCUSSION

The aim of this article was to study how contractual and relational aspects complement and strengthen each other in successful PPP projects. The analysis shows three different mixes of conditions that match with high-performing projects, indicating that there are multiple ways to achieve successful PPPs. In two of the three pathways contractual and relational conditions are combined. This applies to path 1, which suggests a mix of trust (T) and risk allocation (RA), and path 2, which combines risk allocation (RA), conflict management (CM), the strict application of sanctions (S). These configurations are in line with the theoretical expectations in earlier studies (for example Poppo & Zenger, 2002; Edelenbos & Eshuis, 2012) and show that contractual and relational conditions can indeed function as complements. The third path (T*CM*~S) puts more emphasis on the importance of relational aspects. Our findings confirm our expectations that no single condition alone is necessary or sufficient for outstanding performance. A mix of different conditions is needed. Moreover, there are several combinations that form a good match in successful PPPs. This seems to us an important theoretical contribution to the scientific debate. Various causal pathways are possible, and we need to further deepen our knowledge on these pathways and our understanding of how they work.

Comparing the results to our earlier theoretical expectations, a few things stand out. First, the theory of incomplete contracting holds. Our analysis shows that contractual aspects have to be complemented by relational aspects. So, this study confirms our expectation that RA*S is not sufficient for the outcome. Simultaneously, at least one of the relational conditions (T+CM) is necessary for outstanding performance. In path 1 trust complements the allocation of risks, and in path 2 conflict management complements both contractual conditions. We also find the expected combination of RA*T

in the study. The combinations RA*CM is only sufficient combined with the strict application of sanctions. A second issue that stands out is that, although contractual aspects need to be complemented with relational aspects, our study also suggests that a mix of both is not strictly necessary. Path 3 attaches far greater importance to relational aspects (T*CM*~S). The flexibility that occurs when partners refrain from strict application of sanctions can – if combined with high levels of trust and good conflict management – result in outstanding performance. This means that our initial expectation that either risk allocation or strict application of sanctions (RA+S) is necessary for outstanding performance is refuted. One of the main theoretical contributions of this paper thus relates to the role of relational aspects. Relational aspects do not only complement contractual aspects, but a combination of only relational conditions can be sufficient to achieve successful public–private partnerships. Third, our theoretical expectation that trust and a strict application of sanctions are incompatible does not hold. The three paths do not rule out the combination of trust and strict application of sanctions, despite our earlier expectations (see also Ring & van der Ven, 1992). For example, some cases covered by the combination of path 1 (T*RA) do apply sanctions strictly (S) and while other cases covered by path 1 are more lenient (~S). Therefore, the conditions S is removed in the process of minimisation. The same applies with trust in path 2. So, there are several successful PPP projects that display high levels of trust and apply sanctions strictly. Perhaps, strict but consistent application of sanctions makes partners predictable, which might lead to more trust. We could also argue that high levels of trust help to accept sanctions, as one would not believe that their partner would impose sanctions just for their own gain. Finally, this paper includes important theoretical lessons on the role of trust in PPP performance. Two out of three configurations include trust as a so-called INUS condition[12], and the path without trust (RA*CM*S) has only limited unique coverage. In our study, only one project (P20NG) is explained exclusively by this path. This confirms the important role scholars attach to trust in PPPs (e.g. Ansell & Gash, 2008; Klijn et al., 2010). However, our results also show that trust is not a necessary condition for outstanding performance. There are alternatives; if trust is lacking, other mechanisms have to be inserted to manage uncertainty in the project.

As with any study, this study also has its limitations. In the first place, there are some limitations in assessing outcomes for PPP projects. One limitation concerns the uncertainty and dynamics in these complex public–private partnership projects. As the projects are still ongoing (most in the operationalisation phase) their performance as assessed in this study is not their final performance. Things might change over time,

12 An INUS conditions is an insufficient, but necessary part of a conditions which in itself is unnecessary but sufficient for the occurence of the outcome (Schneider & Wagemann, 2012).

which might result in a different set membership in the conditions or the outcome. This QCA analysis only provides a snapshot of the projects and thus provides no guarantee for future performances of these PPP projects. Another limitation concerns the risk of reversed causality. Especially given the reciprocal relationship between trust and performance, reversed causality might be possible in our study. After all, theoretical arguments about the relationship between performance and trust can be made both ways. In the formulation of the questions to the respondents we tried to limit the risk of reversed causality. For example, our questions about performance refer to performance at this very moment, whereas the questions referring to trust suggest a longer time span. These questions are supposed to be answered with the construction phase in mind and aim to measure trust over the past period. More importantly, even in case of reversed causality, the conclusions of this study hold. Trust, here analysed as an important condition for outstanding performance, after all remains important, even if trust is caused by previous performance. Nevertheless, reversed causality remains a risk we are not able to completely exclude in this study. A third limitation is that we have not been able to explain all empirical cases with outstanding performance. Moreover, there are two cases which are deviant consistency in kind. They are more out than in the set of 'outstanding performance', but, nevertheless, display a promising combination of conditions. This probably means that there are other conditions beyond the scope of this article that potentially contribute to the explanation of PPP performance. Due to the restrictions of the QCA method, our analysis of 25 cases can only include a limited number of conditions. Discussing possibilities for future research should include adding different conditions to the test that could potentially contribute to a fuller explanation of PPP performance and further in-depth case study to deepen our knowledge about the configurations that are present in successful PPPs.

Despite its limitations, this study has important theoretical and empirical implications. Theoretically, this study contributes by providing specific combinations of contractual and relational conditions. These combinations provide new insights into the dynamics between contractual and relational governance, and the role of trust herein. These findings also have important implications for practice, namely that no simple clear-cut roads to outstanding performance exist. The dynamics and uncertainty in public–private partnerships might require different configurations of conditions, and these configurations might change during the project's lifecycle. This implies that decision makers and managers need to be reflective and should understand what is needed given the conditions present. Project managers should therefore have the capabilities and skills to alternate between various types of management, without becoming unpredictable and untrustworthy to their partners. Despite the dynamics and uncertainties in PPP projects, a good relationship and a shared understanding on agreements regarding the realisation (and maintenance) of the project might help

dealing with the issues partners face in public private partnerships. Projects that are able to realise one of the different combinations stemming from the 'mix and match' in our analysis are taking a step in the right direction towards outstanding performance.

Chapter 7

Putting the pieces together: hybrid forms of governance in public–private partnerships.

7.1. INTRODUCTION

The public and private professionals engaged in Princess Beatrix sluice project work according to ten 'golden rules' that they called the Pact of Vreeswijk. These process rules are not dictated to them by any contract; rather they were designed at the start of the project to embody the project partners' commitment to a good collaboration, to reflect what this project would mean to them: a shared undertaking. Both public and private partners participated, carrying their own risks, responsibilities, and tasks, but still there was a mutual goal and the intention to help each other achieve this goal as best they could. If I asked these professionals what the ten rules are exactly, I wonder if they would be able to list all ten of them. For many, these rules became so common that they lived by these rules without giving them too much thought. More than mere process rules, the Pact of Vreeswijk became a way of working; a way of working in which it was common to inform each other early regarding potential issues, even if the contractual risk was clearly assigned to only one of the actors; a way of working in which face-to-face communication was preferred over sending emails or letters, and in which partners made an effort to understand each other.

The formal contract between both project partners did not require this intense collaboration in the Princess Beatrix sluice project, but it played a significant role nonetheless. Despite the horizontal and intensive ways of working in which public and private actors addressed issues together, risks and responsibilities were still clearly assigned to only one actor. The private partner made allowance for costs to mitigate risks assigned to it. There were debates between the public client and the private contractor regarding the interpretation of contract demands. Project partners did not always see eye to eye. Notwithstanding the formal, contractual agreements that were made, project partners would always try to understand each other's line of reasoning, even if that did not necessarily mean that they would come to agree on issues. After all, even in the best relationships, partners do not always agree on everything.

The balance that the project partners found in this case between contractual agreements and more relational ways of working is illustrative of the empirical findings in this dissertation. It suggests that, although guided by strict contracts, public–private partnerships (PPPs) are more than a mere form of contracting out. Established bodies of literature on themes like incomplete contracting, relational contracting, and trust have already pointed in this direction (e.g. Brown et al., 2016; Bertelli & Smith, 2009; Klein-Woolthuis et al., 2005). The governance of PPPs takes place not only via strict contracts, but also via social relationships between project partners and the interactions between the professionals that make up the project teams on both sides (see Granovetter, 1985; Weihe, 2009). This dissertation set out to study the balance between contractual and relational governance in PPPs. Its unique contribution is

twofold. First, it identifies specific combinations of contractual and relational governance mechanisms in high-performing PPPs. Second, it addresses the role of relational quality in the relationship between governance and performance. Therefore, the main research question in this dissertation was: *How do contractual and relational governance affect the performance of public–private partnerships, and what is the role of relational quality therein?*

This chapter provides the main conclusions of this dissertation. It is structured as follows: section 7.1 first provides an answer to the four sub-questions. By connecting the results of the empirical chapters, it then responds to the main research question. Next, in section 7.2 the limitations of this study are presented. Section 7.3 considers the conclusions of this dissertation in light of broader theoretical developments. The relevance of this dissertation for existing fields of study is elucidated. The societal relevance of this dissertation is presented in section 7.4. Finally, section 7.5 offers an agenda for future research based on this dissertation's outcomes, limitations, and relevance.

7.2. ANSWERING THE RESEARCH QUESTION

This section presents the answers to the four sub-questions posed in Chapter 1 and formulates an answer to the main research question. Before doing so, it provides a brief synopsis of the empirical chapters presented earlier in this dissertation.

This thesis started by investigating what public and private professionals working in PPPs consider the ideal way to govern PPPs. The Q-method study in *Chapter 2* presents four different profiles. Each profile holds a specific viewpoint regarding the governance of PPPs. These viewpoints vary in the degree of managerial freedom for the private contractor and have different positions on the scale between control and collaboration as the core governance mechanism. These viewpoints seem to be influenced by the professionals' experience, the country in which the professionals work, and the public–private distinction. Next, to dive a little deeper into our knowledge of relational quality in contract-based PPPs, *Chapter 3* offers an overview of research focusing on relational quality in PPPs. It shows that research on this topic within the PPP research area is both limited and subject of conceptual vagueness. With the help of related strands of literature, including those of collaborative governance and relational marketing, Chapter 3 proposes a first conceptual model to study the quality of relationships within PPPs, highlighting five core characteristics of social relationships: trust, communication, commitment, respect, and openness. *Chapter 4* builds on the previous chapter, as it tries to test part of the proposed model, studying how high-quality social relationships can be built within PPPs. Using fuzzy

set QCA, it shows that experience, a fair risk allocation, and network management activities are, in various constellations, present in projects that managed to build high-quality social relationships. These social relationships in PPPs are characterized by frequent communication, high levels of trust, and openness. *Chapter 5* continues studying the relevance of relational characteristics by asking what makes PPPs work. It tests the effect of both relational governance and relational quality on PPP performance. A multilevel analysis of survey data from 144 respondents involved in Dutch PPP projects shows that both trust and network management are important for PPP performance. Trust also enhances cooperation, which in turn is positively associated with performance. *Chapter 6* finally returns to the original purpose of this dissertation: to study the balance between contractual and relational governance and its effect on PPP performance. A QCA study of 25 PPP projects in the Netherlands and Flanders shows that there is often a mix of relational and contractual elements in successful PPPs. Contractual and relational aspects complement each other. Although there is no clear-cut road to outstanding performance, projects that are able to realize one of the combinations presented in this chapter are taking a step in the right direction towards high-performance. The four sub-questions can be answered on the basis of these findings.

7.2.1. Governance as a hybrid

The first sub-question addresses the different perceptions of professionals working in PPPs regarding the governance of these partnerships. The empirical findings in Chapter 2 show that four different profiles can be distinguished: clusters of professionals working in PPPs that share similar viewpoints regarding the preferred governance of these partnerships. These viewpoints presented in the profiles differ in terms of the managerial freedom for private partners and of their preference for either control or collaboration as the dominant form of governance (see Figure 7.1). The first profile allows for much managerial freedom for the private partner. The guiding principle in this profile is that the risks are transferred to the private partner, and with them also the responsibilities. There is therefore very little emphasis on public involvement or collaboration. The private partner is limited only by the output specifications set at the beginning of the project. Governance takes the form of sanctions if performance falls short. The second profile is the opposite of the first profile. Professionals associated with this profile place strong emphasis on collaboration and supporting each other. Governance is designed to enhance relationships by encouraging openness and building trust. Strict control is less important. The third profile focuses on performance and clarity when it comes to governance. Clear agreements and output criteria are needed. The public partner monitors the project, and the private partner is held accountable. Each partner has its own tasks. Collaboration is possible as long

as the boundaries, in terms of roles and responsibilities, do not start to blur or shift. The fourth and final profile acknowledges the dominant role of the private partner. This results in much managerial freedom for the private partner. The public partner plays a facilitating role. The preferred governance mechanisms in this perspective are focused predominantly on monitoring and enabling the private partner to do its job.

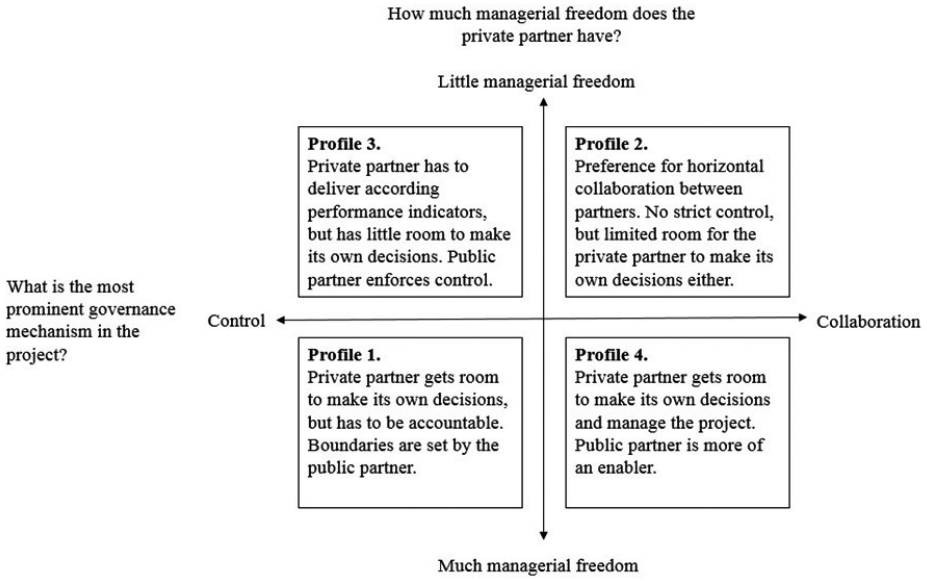

Figure 7.1 The four profiles of professionals working in public–private partnerships.

The four different, sometimes even conflicting, profiles regarding the ideal governance of PPPs can be partially traced back to the dominant theoretical governance paradigms in the public administration literature. The focus of governance on performance, control, and monitoring in the first and third profile is in line with the ideas underlying New Public Management (NPM). The focus on supporting each other and collaboration between public and private actors resembles some features of the New Public Governance (NPG) paradigm. Furthermore, the idea of freedom for the private partner corresponds with the idea of self-governance underlying the private governance paradigm. Note that Traditional Public Administration (TPA) is not reflected in the preferences of public and private professionals. Comparison of the preferences of public and private professionals with the theoretical paradigms reveals that professionals' viewpoints do not correspond exactly to the theoretical paradigms. Instead, professionals adopt hybrid forms of governance, combining contractual and relational governance mechanisms.

Each of the four profiles is adopted by a mix of professionals with different cultural, organizational, and personal backgrounds. Nevertheless, the empirical findings in Chapter 2 show that some profiles are more dominant in one country than in another. In contrast to many of their international colleagues, Dutch PPP professionals tend to be more inclined to focus on the collaborative effort involved in PPPs and espouse relational governance mechanisms that favour openness and mutual support. Canadian professionals are more likely to use governance mechanisms that focus directly on performance, such as output criteria, monitoring, and clear agreements regarding roles and responsibilities. Finally, the Danish professionals prefer to give room to the private partner. So, culture might play a role in the choice of governance and the way in which relational and contractual governance mechanisms are combined. Clearly, culture seems to matter when it comes to governance, but so does professionals' experience and their position in the project. Regarding the latter, there are some differences between the perceptions of public and private partners. Private professionals lean more towards governance based on cooperation or managerial freedom. They attach relatively little importance to contractual governance mechanisms. Regarding experience, compared to professionals with limited experience in PPPs, highly experienced professionals tend to be keener on managerial freedom for the private partner. This applies to both public and private professionals.

So, in answer to the question: *What are the different perceptions of professionals working in public–private partnerships regarding the governance of PPPs?,* this dissertation shows that the viewpoints held by professionals working in PPP regarding their ideal way of governing PPPs are of a hybrid character. They combine elements from most theoretical paradigms. The four profiles vary in the degree of managerial freedom for the private partner and the degree of cooperation. The culture of the country in which a professional works and the professionals' experience seem to influence the professionals' preferences in terms of PPP governance. The implications thereof are twofold. On the one hand, it is more difficult to compare professionals' governance preferences. On the other hand, an opportunity is provided to learn from the experiences and viewpoints of professionals in different countries.

7.2.2. Building good relationships in public–private partnerships: network management, risk, and experience

The second sub-question focuses on relational quality, asking: W*hat is relational quality and which determinants have an influence on relational quality in public–private partnerships?* In this dissertation, the assumption that the quality of the relationship between actors affects PPP performance is tested. Previous research into relational quality in PPPs has been limited, and the concept still suffers from conceptual vagueness. PPP research can, in this respect, learn from existing literature on related topics, such as social

capital, relationship marketing, and collaborative governance. Based on a systematic literature review, Chapter 3 therefore provides a first conceptualization of relational quality in PPPs.

It concludes that relational quality is about the state of relationships, which can be defined as long-term, interpersonal, social ties between actors. This relationship is determined by more than mere trust, although trust is an important characteristic of relational quality. Chapter 3 distinguishes several relational aspects that are all features of high-quality social relationships between project partners. Openness, communication, respect, and commitment are other relevant characteristics of high-quality relationships; this might prompt us to broaden our studies beyond measuring trust. The five abovementioned elements of relational quality do not work in isolation. Rather, there are reciprocal and complex relationships between the elements, in the sense that, for example, trust might affect openness and vice versa. Moreover, relational quality is a dynamic concept, as the state of the relationship may change over time. This presents challenges in the measurement of relational quality.

The literature review identifies various determinants that might impact the quality of the relationship. These determinants can be categorized as individual determinants and determinants on project and organizational level. On an individual level, earlier research discusses the importance of experience and personnel turnover, whereas at project and organizational level determinants such as leadership and management, and shared standards, shared values, and shared goals, are said to influence relational quality. Some of these determinants are tested in Chapter 4. The empirical findings of this chapter show that network management, risk allocation, and experience matter when it comes to high-quality relationships. These three determinants have a combined influence in various constellations:

1. The first combination of conditions mixes network management with experience.
2. The second combination of conditions found in high-quality relationships in PPPs is that of a fair risk allocation and experience.
3. Finally, the combination of network management and risk allocation is present in PPP projects with high relational quality.

A few conclusions can be drawn from these three configurations. First, it is clear that well begun is half done. Both experience and risk allocation highlight the importance of a good starting point of the relationship. Both confidence and a fair risk allocation might give partners a certain sense of confidence in their relationship. Experience can lead to trust, an important element of relational quality. Experienced project partners know what to expect during the project and are able to keep their calm at critical junctures. Second, network management is an important condition for relational

quality; this shows that relationships need to be carefully nurtured during the project. This study also shows that governance affects relational quality. After all, the use of network management strategies, especially those geared towards connecting actors, can be considered a form of relational governance. Simultaneously, the allocation of risks is embedded in the contracts guiding PPPs and is thus regarded as an example of contractual governance. This indicates that relational governance has a positive effect on relational quality in PPPs. The same applies for contractual governance, provided that the risks are not completely transferred to the private partner. Instead, both partners carry some of the risks according to the principle that risks are assigned to the partner who is best able to mitigate these risks. Finally, the third path shows that contractual governance – in the form of risk allocation – and relational governance – in the form of network management – do not work in isolation but may complement each other in realizing high relational quality in PPPs.

So, relational quality describes the state of interpersonal, social relationships between actors and can be characterized by trust, openness, communication, commitment, and respect. There are several determinants of relational quality, including experience, network management strategies, and the allocation of risks. Our empirical findings emphasize that governance, both relational and contractual, matter for relational quality.

7.2.3. Do good relationships really matter?

The previous sub-question addressed the concept of relational quality and the way in which high-quality relationships can be built. This sub-question – *How does relational quality affect the performance of public–private partnerships?* – establishes the connection between relational quality and PPP performance. From the empirical evidence presented in this dissertation, a first conclusion is that relational quality might affect PPP performance (see Chapter 3, 5 and 6 of this dissertation). Earlier studies already show the potentially positive effect of relational quality on performance (Kumaraswamy et al., 2007; Jones & Noble, 2008; Roehrich & Lewis, 2014). They stress the positive effect on efficiency and effectiveness, transaction costs, and a better collaborative process. This dissertation confirms the positive effect of relational quality on both cooperation and perceived project performance (see Chapter 5). Thus, it focuses on a broader measurement of performance than just financial performance. It includes elements such as the integral nature of the solution, its effectiveness, its financial performance, and the involved project partners' support for the solution.

Besides a significant positive relationship between relational quality and collaboration and between relational quality and perceived performance, Chapter 5 also presents indications of the mediating role of relational quality in the relationship between governance and performance. Network management, as an element of relational

governance, is not directly correlated with collaboration. However, there is a clear, positive correlation between governance and relational quality (measured by the element of trust). As stated earlier, given the significant correlation between relational quality and cooperation shown in Chapter 5, this could indicate that relational quality acts as a mediating variable between relational governance and performance. This seems likely, as network management strategies have been shown to increase trust, which is known to contribute to cooperation (e.g. Klijn et al., 2010; Zaheer et al., 1998; Pennink, 2017).

All in all, the main conclusion with respect to how relational quality affects PPP performance is that relational quality does indeed seem to affect the performance of PPP projects. Using trust, an important characteristic of relational quality, this dissertation shows a significant and positive effect on both collaboration and on performance, measured in terms of effectiveness, durability, support, and cost-benefit balance. These findings emphasize the importance of studying relational quality in PPPs.

7.2.4. Balancing contractual and relational governance: Three different paths

Regardless of the importance of relational quality and the potential benefits of relational governance mechanisms such as trust, neither the public client nor the private contractor will engage in a PPP without a legal form of certainty. The sheer size, risks, and budgets involved in the infrastructure projects studied in this dissertation are too large to commit to such a project without the use of a contract. This fourth sub-question therefore concerns the balance between contractual and relational governance in PPPs: *How do contractual and relational governance relate to each other in successful public–private partnerships?*

The fact that hybrid forms of governance are preferred by professionals working in PPPs suggests that it is not necessary to choose either contractual governance or relational governance. The empirical findings in Chapter 6 confirm that, rather than being substitutes, contractual and relational governance complement each other in various ways. These findings make it clear that, although successful PPP projects often display a mix of governance forms, in some projects, some aspects of governance seem to replace others. Not all contractual and relational governance mechanisms need to be present. This dissertation presents three specific combinations of governance mechanisms that can be found in high-performing PPPs:

1. The first path is a combination of trust and risk allocation. Risk allocation is an important element of contractual governance, and trust is used to represent re-

lational governance. Hence, this path displays a combination of contractual and relational governance mechanisms.
2. The second path is that of risk allocation, strict application of sanctions, and conflict management. Again, with the first two mechanisms referring to contractual governance and the latter being an example of relational governance, this path shows a combination of contractual and relational governance.
3. The third path is that of trust, conflict management, and the absence of strict application of sanctions. This path points towards the importance of relational governance, as it does not include any specific contractual governance mechanisms. It does not, however, point towards the total absence of contracts.

A few conclusions can be drawn from these three combinations of conditions, or paths. The first conclusion is that contractual and relational governance function as complements. The findings presented in this study in Chapter 6, and in particular the first two paths presented above, provide clear evidence towards this idea. The second conclusion is that clear agreements are very important for enhancing PPP performance. They reduce uncertainty and provide guidelines when the going gets tough. Whether they are established using contractual or relational governance mechanisms might be of less importance, as both the agreements laid down in a contract – such as agreements on the risk allocation – and those established via relational control mechanisms – such as conflict management – can be found in projects with high levels of performance. The third conclusion is that the strict application of sanctions as a governance mechanism is equivocal. Paired with a fair risk allocation and conflict management, the application of sanctions is part of a configuration displayed by well-performing PPP projects. In contrast, in the third path, which consists of relational governance mechanisms, it is only the absence of the strict application of sanctions that contributes to good performance. In this path, the strict application of sanctions seems to clash with the use of relational governance mechanisms. So, the effect of the strict application of sanctions on performance is not clear-cut. This suggests that the use of a specific governance mechanism should match with the other mechanisms used in the governance of PPPs. A last conclusion is again drawn from the third combination of conditions, as this path consists solely of relational governance mechanisms. Although the explanatory value of this path is small, it seems to suggest that good performance can be achieved using only relational governance mechanisms. This highlights the important role of relational governance in PPP performance.

All in all, in answer to this question it is clear that relational and contractual governance mechanisms perform predominantly as complements, resulting in a hybrid form of governance. Contractual governance mechanisms enforce previously made agreements regarding roles, risks, and responsibilities, providing clarity to the project

partners. Relational governance mechanisms are designed to increase partners' willingness to take into account the unique circumstances of the project, empathy for their project partner, and mutual consideration of each other's needs and interests. The exact balance between contractual and relational governance mechanisms is subject to change. Some professionals consider contractual governance the dominant governance mechanism, allowing only for relational governance as long as it does not detract from the agreements in the contract (see Chapter 2 of this dissertation). Others prioritize relational governance mechanisms. The combination of relational governance mechanisms presented in Chapter 6 suggests that the effect of relational governance should not be underestimated. Clearly, although contractual and relational governance are, in most cases, complementary forms of governance, the balance between them can be subject to change due to the dynamics within a PPP. The relevance of studying the dynamics within PPPs is addressed in greater depth later in this chapter.

7.2.5. Putting the pieces together: The right mix between contractual and relational governance in public–private partnerships

From the answers to the sub-questions discussed previously, it is now possible to formulate an answer to the central research question. The central question in this study was: *How do contractual and relational governance affect the performance of public–private partnerships, and what is the role of relational quality therein?* The main conclusion of this dissertation is that contractual and relational governance function as complements in high-performing PPPs. In some cases, relational governance mechanisms even seem to be the dominant governance mechanism. None of the high-performing PPP projects in our study uses only contractual governance mechanisms, and there are some that build predominantly on relational governance (as shown in Chapter 6). This emphasizes the importance of relational governance for PPPs. This is confirmed in Chapter 5, which provides evidence of the positive relationship between relational governance and PPP performance, in terms not only of performance measured as efficiency, but also of the balance between costs and benefits, the integral nature of the solution, and the satisfaction of all partners involved in the project. Moreover, relational governance is positively correlated with relational quality. As relational quality – measured using the important characteristic of trust – influences performance in the form of a good collaborative process, this leads to the conclusion that: relational governance has (a) a direct, positive effect on PPP performance and (b) an indirect, positive effect on collaboration. The quality of the relationships in PPPs therefore mediates the relation between relational quality and performance. Relational quality has a significant, positive effect not only on collaboration, but also on perceived performance. Overall, there is a significant relationship between relational quality

and PPP performance. Governance plays an important role in building relational quality. Both network management and a fair risk allocation are present in high-quality relationships. This means that both relational governance – in the form of network management – and contractual governance – characterized by a focus on risk allocation – matter for building good relationships. For the latter, this only applies if not all risks are transferred to the private partner. As long as the risk allocation is considered fair, contractual agreements can also lead to more openness, more trust, and more respect.

All in all, relational and contractual governance have a joint effect on PPP performance and function as complements. Relational governance is at least as important as contractual governance. The quality of the relationship mediates this relationship. It has a positive effect on performance but is in turn affected by the governance of PPPs.

7.3. LIMITATIONS

This section addresses the main limitations of this dissertation, focusing on limitations that apply to the dissertation as a whole. The limitations of the various sub-studies are discussed in their respective chapters.

The first limitation concerns the dynamics of PPP projects. After all, PPPs are dynamic partnerships. They change over time. Events that take place in the project may lead to an alternating increase and decrease in the quality of the relationship. At times, collaboration runs smoothly, but large financial and technical setbacks may cause tensions. As every relationship has its ups and downs, it is unlikely that the quality of the relationship between project partners in a long-lasting PPP will remain stable throughout the entire project (Pennink, 2017). This dissertation uses a number of research methods that either take a snapshot of the relationship at a certain point in time or ask respondents to give their overall impression of the relationship in the construction phase of the project. Other phases, such as the following maintenance phase, in which partners collaborate for years to come, are not included, nor are the relationships between public and private partners in PPPs tracked over time.

The second limitation is a consequence of the methodological decisions made in this dissertation. The choice of methods like QCA and Q-methodology might indicate a lack of causal inference. However, these methods are relatively new to PPP research and provide interesting and new insights into the balance of different forms of governance in PPPs. Nevertheless, they do not offer statistically significant results, and the generalizability of the findings is not always optimal. Also, the methods used are not designed to make an overall assessment of the framework in one go. After the first three empirical chapters dug into governance and relational quality, Chapters

5 and 6 addressed the relationship with performance. Each chapter examines part of the proposed model. In consequence, albeit several relationships from the model have been studied in this dissertation, the scope of this dissertation limits the range of knowledge regarding the causal relationship between hybrid forms of governance and relational quality. Instead, this dissertation presents different perspectives on the governance of PPPs, reveals various hybrid forms of governance in which contractual and relational mechanisms are combined, and gives an indication of the importance of relational quality in PPPs.

Finally, a third limitation of this dissertation is its focus on how contractual and relational governance can be combined in PPPs. New insights are offered into the balance between the two forms of governance, presenting specific combinations of contractual and relational governance mechanisms, but the way or when questions cannot be explained. Why these combinations work so well in high-performing PPPs is unclear, as well as when, in which situation, which combination is used. The different paths presented by the QCA in Chapter 6 do raise questions regarding the role of time and context. Which combination is used at what time? The long-term, dynamic, and complex character of PPPs raises the question of whether the balance between various governance forms changes over time. The research methods used in this dissertation do not sufficiently take into account the context in which governance mechanisms are used to determine when and why specific combinations of governance might have the intended effect.

7.4. THEORETICAL RELEVANCE

In this section, I address some of the implications of the empirical findings in this dissertation for PPP theory. I first discuss the relevance of combining an institutional economic perspective on PPPs with a relational perspective. Then, I turn to the theoretical implications of relational governance in PPPs on four different levels.

7.4.1. Combining an economic rationale with a governance rationale

There is no such thing as a PPP theory. Rather, PPP has to be considered from different angles. Two dominant takes on PPP adopt either an economic angle or a governance angle. From an economic perspective, building upon theories such as transaction cost theory and principal–agent theory, PPPs need to be governed in order to prevent opportunistic behaviour. From this perspective, PPP governance, is based on control. The use of output specifications, monitoring, and the possibility to impose sanctions are the preferred mechanisms to steer actors' behaviour in the desired direction. In contrast, governance theories focus predominantly on the complexity of PPPs, addressing

the interdependencies between actors and the potential to collaborate to realize win-win solutions. Governance here focuses on connecting actors, aligning interests, and creating shared norms and values; this suggests the use of relational governance mechanisms. This dissertation proves that there is added value in combining both perspectives. Combining insights from both perspectives helps to gain insight into hybrid forms of governance. Moreover, it can unravel and explain the mixes of contractual and relational governance used in PPPs. To understand the rationale behind the various hybrid forms of governance, it is not sufficient to choose either an economic or a governance perspective. Combining both perspectives provides the opportunity to join the recent trend regarding relationality in public administration. Bartels and Turnbull (2020) argue for an increased focus on relationships and relational processes. Not only are these relationships important in governing networks and collaborations, these relationships and the relational processes also have value in themselves (e.g. Bartels & Turnbull, 2020; Vandenbussche, 2020). A relational approach, which considers social reality as a process that is relationally constructed, analysed, and understood (Bartels & Turnbull, 2020: 15), may help to enhance our understanding regarding the functioning of PPPs and the way in which these partnerships are governed.

7.4.2. Cross-cutting research on public–private partnerships

A second contribution of this dissertation lies in demonstrating the importance of relational governance. The theoretical implications can be found on various levels. Although this dissertation has focused predominantly on relational governance on project level and its effect on project performance, the use of relational governance in PPPs has consequences on levels other than just the project level. The following levels are involved: (a) the level of individual (public) professionals and the teams they function in, (b) the project level, (c) the organizational level, and (d) the institutional level (focused on national policies, culture, and so on). Here, I briefly address the consequence of relational governance on each level, before making the argument that the theoretical implication of studying relational governance lies in research that connects these levels, rather than studying only its consequences within each level.

To build upon the principles of relational governance, even in difficult or unexpected situations, these principles must be embedded in PPPs on various levels. First, relational governance calls upon individual professionals to commit to this way of working. Professionals from both sides need the right skillset to do so, but it is also paramount that they share the conviction that a relational way of governing is useful for PPP and sometimes might even work better than a unilateral focus on strict contractual forms of governance. The findings presented in Chapter 2 of this dissertation have shown that this is not always the case. Relational governance is not embedded in the preferences of all practitioners working in PPPs. In fact, there are major differ-

ences between professionals' views regarding the governance of PPPs. These professionals have some discretion to shape PPP governance in everyday life. This makes the behaviour of individual professionals an interesting research avenue (see for example Weißmüller, 2020, for a behavioural focus on PPPs). In order to understand what happens if professionals do not share the same governance perceptions, research into PPPs should pay more attention to the way in which professionals perceive and shape the governance of PPPs. This calls for the study of PPPs on an even more micro level. Hodge & Greve (2013) suggested five different levels on which to study PPP, of which PPP as projects was the narrowest. However, this research suggests that a new level is required, that of PPPs as collaborative processes between individual professionals. Studying inter-team collaboration might elucidate the collaborative processes that take place within PPPs on a micro level.

Second, on a project level, the governance of PPPs could benefit from strategies that are arranged in such a way as to leave room for – or even stimulate – the use of relational governance mechanisms. Network management strategies are particularly useful in this respect. The study in Chapter 5 shows a positive effect of network management on PPP performance. Network management strategies are geared towards connection actors, aligning interests, and exploring content (Klijn et al., 2010). This includes process management strategies (e.g. Edelenbos & Klijn, 2009) such as conflict management. These strategies stimulate continuous interaction and an open dialogue regarding project partners' motivations, needs, and wants. This continuous interaction is crucial in developing joint actions – such as joint problem solving – which is central to relational governance (Claro et al., 2003). Given the importance of process management, theory building on process agreements should be much more embedded in PPP research. So, this dissertation confirms the importance of theories like network governance and collaborative governance for studying PPPs, even for contract-based PPPs such as long-term infrastructure contracts, but it also calls for more attention in PPP research on theory on the building of process agreements.

Simultaneously, there are theoretical implications that poses new challenges to such theories. PPP projects take place within an existing environment of organizations. It is important to realize that project team members, who work in PPPs on a daily basis, are also members of their respective organizations. Decisions made and actions taken in PPPs by project teams (which can be considered the inner circle) need to be approved and supported by their own organization (the outer circle). It is likely that the outer circle may influence the behaviour of project teams (the inner circle) and thus the performance of the PPP. Professionals explain that they have to ensure there is a strong support base within their organization. The result of negotiations between project teams needs to be accepted by their respective organizations. For the public client for example, it is important that the decisions made in relation to the project

fit into the organizations' policy. Therefore, for relational governance to be applied consistently in PPPs, it needs to be embedded in the organizations and not merely the project teams. This implies that, in PPP research, scholars should not focus merely on the partnership as a stand-alone entity. Rather, PPP theories should address the connections between actors in the project and actors outside the project. The focus should not lie merely on what happens within the project, but also on what happens between the professionals working in the project and their respective organizations. This calls for theory building that focuses on explaining the interactions between the different levels.

Finally, PPPs are often institutionalized and part of national procurement policies. Hodge & Greve (2013) addressed this as one of the broadest levels of PPP. This implies that it is a political choice whether a country opts to use PPPs. It is also a political choice to frame the use of PPPs as a form of contracting out – using elaborate contracts to govern the partnership – or as a form of horizontal collaboration – promoting a more collaborative attitude, which might imply the use of relational governance mechanisms. Although PPPs are often considered an international phenomenon, the findings in this dissertation imply that research in PPPs should be more sensitive to the institutional context of these projects. The governance of PPPs is also determined by institutional frameworks. How much attention and support do national governments give to PPP? What does national policy say about PPP? What are the main political drivers of PPP? Is there a shared culture among contractors that stimulates the use of PPPs? When it comes to the governance of PPPs, and in particular the balance between various governance mechanisms, the policy and culture of a country might affect its governance. Earlier studies have already provided some indications towards this (e.g. Verhoest et al., 2015). This implies that theory on PPPs needs to acknowledge the effect of national differences and gain more insight into how these differences affect the governance and performance of PPPs. Theoretical frameworks regarding the functioning of PPPs cannot be applied blindly to every PPP, regardless of institutional context. Research into PPP needs to pay more attention to the generalizability of its empirical findings and address the differences in PPP across countries in new comparative research.

The findings in this dissertation suggest that the mix of governance mechanisms has consequences beyond the level of PPP projects. Rather, it has consequences on individual, project, and organizational level. Some of the implications addressed here are translated into suggestions for further research in section 7.6. However, this section also suggests that attitude and behaviour on individual, project, and organizational level are intertwined. This calls for a theory that is able to (1) cross the boundaries between these different levels and (2) explain how these different levels interact.

7.5. SOCIETAL RELEVANCE

Based on the dissertation, the following insights might be relevant for public and private organizations collaborating in PPPs.

7.5.1. Individual level

This dissertation provides insight into the mix and match of relational and contractual governance. It addresses the hybrid character of the governance preferences that exist among PPP professionals. On an individual level, it is important that professionals understand that contractual and relational mechanisms complement each other. Moreover, it is vital that they understand each other's governance perceptions to prevent this becoming a subject of conflict during the project. Furthermore, professionals need the skills to apply and combine both governance forms. Whereas most of them are familiar with contractual governance, the use of relational governance requires different skills, such as flexibility, conflict management, and the ability to build open relationships (e.g. Dickinson & Sullivan, 2014).

Combining contractual and relational governance mechanisms can create dilemmas for managers. On the one hand, managers need to be able to use various governance mechanisms, combine them, and select the right balance for a particular situation. At the same time, they need to provide clarity to the involved partners regarding the governance of the project. Project partners' expectations of project partners regarding the governance of the project need to be aligned, so they know what to expect. There seems to be a thin line between flexibility and predictability in this respect. Managers thus should have the skill to facilitate a dialogue about the use of governance mechanisms and to combine various governance mechanisms. Q-methodology, which has proved its use as an instrument to ascertain professionals' perceptions and preferences, could also be a useful tool for practitioners in this respect. Information derived from a Q-study may provide a starting point for a dialogue on governance and the balance between contractual and relational governance in PPPs.

7.5.2. Project level

Given the long duration of the project, the use of governance mechanisms needs to be embedded in the project. With contracts being a core feature of contract-based PPPs, contractual mechanisms are usually rather well institutionalized. However, this might not be the case for relational governance. As this dissertation stresses the importance of using relational governance mechanisms, this is a point for attention. One suggestion regarding the implementation of relational governance mechanisms would be to design process agreements, such as the Pact van Vreeswijk, designed by project partners in the Princess Beatrix sluice project. At the start of the partnership,

partners should agree not only upon technical requirements and formal roles and responsibilities, but also, prior to their collaboration, on process agreements and discuss questions like: How does one treat the each other if the other makes a mistake? What should be done if an unanticipated issue is encountered? What process should be followed in the event of disagreement about roles, responsibilities, or the interpretation of specific contractual requirements? These process agreements do not necessarily need to take the place of a contract. Instead, both can co-exist alongside each other. To determine how the balance between contractual and relational governance should look in a contract, serious games and simulations can be useful as intervention methods. They help project partners to think about governance in complex situations and stimulate project partners to develop some awareness of each other's position and interests.

To embed the use of relational governance mechanisms in a project, these mechanisms need to be safeguarded throughout the process. Over time, project partners will develop a collective memory. This shared pool of knowledge and information not only contains technical specifications, but also addresses the way of working within a project, the way in which professionals interact, collaborate, and solve problems. This collective memory needs to be secured, to ensure that the built-up trust and gained learning experiences are not completely lost in event of personnel turnover. Mechanisms such as role protocols, transfer points, and project follow-ups can be useful instruments to safeguard collective memory in a project.

7.5.3. Organizational level

Managing expectations regarding the governance of a project does not apply only to the project teams involved in the project; it stretches to their respective organizations as well. How do organizations respond to the use of a mix of contractual and relational governance mechanisms in PPP projects? Does it fit in their organizational culture? Is there support for the use of relational governance mechanisms? This requires a dialogue on a level that surpasses that of individual projects. It calls for an organization-wide debate on how a public organization wishes to collaborate with private partners, and what that means for the organization itself. The Dutch *Marktvisie*, a document in which various public and private organizations expressed their intention to look beyond the contract in managing large infrastructural projects, is a first step towards such a dialogue. However, the intentions expressed in the *Markvisie* should echo through in each of these organizations. After all, mixing governance mechanisms into a hybrid form requires autonomy and support for project managers, so that they can choose the balance between contract and relationship that works best for their project at that juncture. Organizational support for using hybrid forms of governance should stretch across departments.

7.5.4. Institutional level

The call for more relational governance in the governance of long-term infrastructure projects might be hindered by a strong focus on contractual governance at national level. The political issues of the day do not necessarily stimulate the use of relational governance. The political climate and attention on megaprojects that face long delays in their realization and exceed their budgets make governments incline towards a more controlling approach. A clear example of the preference for contractual governance is the 2013 report of the Dutch Court of Audit, in which it was argued that the contract should ensure performance over time. It identified a few problems, including the fact that public organizations did not always monitor the performance of private partners optimally and the fact that sanctions were not always strictly applied. Strict contract management was clearly the dominant discourse. However, the results of this dissertation highlight the usefulness of relational governance and attention on the relationships between project partners. Changing the national discourse is not so easy. Nevertheless, PPP evaluations should not only consider hard performance indicators such as on-time and on-budget delivery. Rather, they should adopt a broader measure of performance and allow more space to learn from experiences with different forms of PPP governance. In particular given, the long duration of PPPs, relational governance can be a useful tool, because it helps to build and maintain good relationships between project partners and reduces the chance of dysfunctional conflicts (Lousberg, 2012).

7.6. AGENDA FOR FUTURE RESEARCH

To conclude this dissertation, I would like to make some suggestions for further research into this topic. The conclusions presented in this chapter suggest several research avenues that might help to further deepen and broaden our understanding of the governance of PPPs and its effect on relational quality. These new research avenues address this topic on various levels. Hence, I propose the following suggestions.

1. Maintaining high-quality relationships in public–private partnerships

This dissertation has confirmed the importance of relational quality in PPPs. Further research, using a variety of research methods, is, however, necessary to create a more solid base of evidence and to answer some of the questions that remain: How can good relationships be maintained in public–private partnerships? Earlier studies have already shown that relational quality is dynamic. The level of trust, for example, changes over time, creating a trust cycle (see for example Pennink, 2017). To further understand how relationships can be built and maintained, Pennink addresses the

key factors that contribute to the building-up and the breakdown of trust, including willingness to share information and resources, reputation and qualifications, and shared norms and values (Pennink, 2017). Despite these earlier studies and the contribution made by this dissertation, the question remains as to how relational quality is affected by stress or success in a project. It might be easy to be transparent and to trust one's project partner if the project runs smoothly and there is enough money to realize the project. If both partners are on a strict budget and have to be careful not to exceed their budget, it might be harder to admit mistakes and support a partner who is facing challenging issues. Occasionally, PPPs are under pressure, for example when severe accidents happen on the construction site. How do such events affect the relationship between project partners? So, what happens to the quality of the relationship between project partners when the project is under pressure? A connection with the recent literature on relational public administration (see Bartels & Turnbull, 2020; Vandenbussche, 2020) might provide new insights into relational quality and how social relationships function in public–private encounters under pressure.

2. Shifting the governance balance in dynamic public–private partnerships

This dissertation presents three specific combinations of contractual and relational governance. In response to these findings, the question arises as to when each of these hybrid governance forms occurs in PPPs. In what circumstance do PPPs need a specific hybrid form of governance? Are there, for example, different combinations of governance mechanisms being used in different phases of a project? What happens to the balance between governance mechanisms when a PPP moves from one phase to another? The transition from the construction to the maintenance phase comes with challenges related to personnel turnover and new tasks for both project partners. What does this mean for the governance of the partnership? It is crucial to learn more about the way in which contractual and relational governance mechanisms interact in various circumstances and how the balance might shift over time. What trade-offs are made between contractual and relational governance mechanisms in various phases in the project or when the project is under great pressure? The use of longitudinal data and process tracing methods (such as event sequence analysis, see Spekkink, 2015) to capture the dynamics of PPPs and the changes in the balance between contractual and relational balance might be a good starting point to address this issue in further research. Furthermore, to further unravel the balance between contractual and relational governance in different situations, experiments and serious games might be an intriguing option to study professionals' use of governance mechanisms (see for example Benitez Avila, 2019).

3. *Coping strategies for combining contractual and relational governance*

Choosing to combine governance mechanisms into hybrid governance forms raises questions about the decision-making process that precedes these choices. Given the vast number of different contractual and relational governance mechanisms, not all these mechanisms can be used simultaneously. Therefore, trade-offs have to be made. How do public organizations and public managers decide about the mix of governance mechanisms? What strategies do they use to balance contractual and relational governance mechanisms? The literature on coping behaviour might be of use in this respect. Thacher and Rein (2004) and Stewart (2006) have identified several coping strategies that can be used to explain what happens in a value conflict. Although the use of various governance mechanisms is not similar to a value conflict, it does represent a trade-off, and the different strategies might help to explain how public organizations and managers behave when deciding about the use of one or more governance mechanisms. Do they use different governance mechanisms sequentially over time (cycling), favour some forms of governance over others (bias), or assess the use of governance mechanisms case-by-case (casuistry)? Further research could dive into the trade-offs made when deciding about a specific combination of governance mechanisms.

4. *Boundary spanners in public–private partnerships*

Although this dissertation focuses on PPPs as projects, the institutional context in which these projects take place might be crucial for the development, use, and mix of governance in them. Hence, an important suggestion for further research would be to study the effect of a public organization on the governance and the functioning of PPP projects. Institutionalized behaviour and organizational culture influence the behaviour of public professionals representing the organization in PPPs and most likely also affect their choices regarding the governance of partnerships in which they work. Professionals willing to use other forms of governance might experience a lack of support from their own organization. The rationale behind the use of a specific mix of contractual and relational governance in PPPs might be better understood if further research takes into account the modus operandi and culture of public organizations and addresses the interplay at organizational and project level. In addition, a connection with the literature on boundary spanners (e.g. Noble & Jones, 2006; Van Meerkerk & Edelenbos, 2018) could reveal more about professionals who try to bridge the gap between their own organization, the project team, their project partners, and the challenges that they face in PPPs. Boundary spanners might help to bridge professionals' different perceptions as well as the different, and sometimes contradictory, perceptions on governance that exist within the inner circle (project teams) and the outer circle (their respective organizations).

5. International comparative research

Further research should address the differences in PPP governance that might arise in different cultures. The empirical findings in Chapter 2 show that governance perceptions diverge between professionals from different countries. Dutch professionals are more inclined to use relational governance mechanisms in contract-based PPPs, whereas Canadian professionals tend to favour contractual governance. This suggests that a country's culture and its approach to PPP play a role in determining the balance between contractual and relational governance. More research is required to better understand what role these institutional factors (macro level) play in determining the actual governance of PPP projects (meso level).

6. Enhancing methodological richness in research on public–private partnerships

Earlier studies have shown that PPP research is dominated by either small N case studies or survey research (e.g. Roehrich et al., 2014; Osei-Kyei & Chan, 2015). These findings are confirmed by the review presented in Chapter 3, which shows that case studies are the most common method in PPP research. Although case studies can be useful, and sometimes even necessary to answer some research questions (see for example my suggestion for longitudinal case study research to capture the dynamics of PPPs), this dissertation has proved that PPP research might benefit from a broader array of methods. Different methods may accommodate research questions on different levels. Q-methodology or discrete choice experiments are designed to unravel individual preferences, and their use might help to understand professionals' governance preferences of professionals' behaviour in (re)negotiations or decision-making processes. QCA might help to transfer from small N case studies to larger N studies to enhance the generalizability of important research findings. Moreover, it allows the combined effect of conditions to be studied. To study strategy and behaviour within PPPs, experiments and serious games might be useful instruments to understand behaviour in PPPs (see the recent trend in Behavioural Public Administration, which also makes ample use of experiments: James et al., 2017). These are just a few suggestions, demonstrating how more methodological variation might unlock new knowledge about PPPs. So, this final suggestion for further research is a plea to enhance the methodological richness of PPP research to further our knowledge on the governance of PPPs.

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Appendices

APPENDICES FOR CHAPTER 2.

APPENDIX I

Results of overall factor analysis in chapter 2.

This appendix includes the results of the overall factor analysis of the Q-sort of all respondents from Canada, the Netherlands, and Denmark. First, table A1.1 provides the factor loadings of each respondent all four factors (or profiles as we call them in the results of our study). Next, table A1.2 provides the factor arrays for the four factors (i.e. profiles), indicating how the statements are scored in the different profiles.

Table A1.1 Factor loadings on all four factors

Factor matrix with an X indicating a defining sort					
		Loadings			
Q-sort		Factor 1	Factor 2	Factor 3	Factor 4
1	1MJAO6NH	0.0750	0.3352	0.4947	0.1490
2	LTGLIRZO	0.3580	0.1072	0.0702	0.1218
3	GEPXMI32	0.2831	0.5279 X	0.2840	-0.2665
4	HDUVWIHR	0.6552 X	0.2306	0.2245	0.2141
5	2DOXFHES	0.0565	0.0982	-0.1772	0.6850 X
6	IFGG8VAC	0.2931	0.5505 X	0.1037	0.1962
7	EYLRS9UP	-0.0623	-0.1397	0.4802	-0.0234
8	OYKKTBD9	0.1618	0.0922	0.5507 X	0.2994
9	PQQ04LDM	0.5409 X	0.2495	0.3990	0.1426
10	AXG0BHYL	0.5280 X	0.0656	0.1840	0.0330
11	MPA3THHX	-0.0341	0.4836	-0.2179	0.1902
12	MWTCKGIC	0.4360	0.5726 X	-0.2653	0.2126
13	ENN6A3XB	0.0997	0.4228	0.1688	0.5077
14	SRWLBSHY	-0.3970	0.2190	0.5133	-0.0997
15	KVGTDVUM	0.0658	0.7562 X	0.1336	-0.4996
16	S8EX1ZRB	0.2811	-0.3051	0.4060	0.5483 X
17	D0HB5L1A	0.1326	0.1418	0.4899	-0.1189
18	1O6NQ5K9	-0.1013	0.0462	0.6338 X	-0.1822
19	PHZ4WD9B	0.4548	0.3638	-0.0835	0.4687
20	DHCDNRRQ	-0.0449	-0.2124	0.1810	-0.8315 X
21	E8K3FPSF	-0.4467	0.2259	0.0378	-0.0705
22	0ODV6JNC	0.2406	0.0677	0.0054	0.6254 X
23	WJXXW5IQ	0.3730	-0.2744	0.5680 X	-0.1186
24	L9JYDR8H	0.3979	0.3384	0.2191	-0.0255

Table A1.1 Factor loadings on all four factors (continued)

Factor matrix with an X indicating a defining sort					
		Loadings			
Q-sort		Factor 1	Factor 2	Factor 3	Factor 4
25	ZAWRBJMD	0.1253	0.1860	0.1599	0.7078 X
26	TX6UXN7F	-0.0084	0.1489	0.5978 X	-0.2268
27	78VXZCWM	0.0267	0.4132	0.4576	0.3125
28	MOB87VO2	0.0560	0.5414 X	0.4898	-0.1380
29	PG1MX0JE	0.4132	0.0764	0.2669	0.0969
30	IXFLVF3Y	0.4689	0.3329	0.0928	-0.1877
31	IRWL3ZMT	0.2224	0.4840	0.2414	0.2818
32	RFSPE9TK	0.1852	0.2809	0.6084 X	0.2202
33	QDZQOYS7	-0.0693	0.3892	-0.1153	0.3239
34	T5DCFUBI	0.1383	0.3320	0.1611	0.2688
35	YAELR2BU	0.3253	0.6768 X	0.1208	0.0102
36	6UO5BPRR	0.4035	-0.0646	0.3798	-0.0253
37	P1JFXU28	0.1171	0.4036	0.6747 X	0.0325
38	LKBAGY8D	0.2598	-0.1594	0.2425	0.0208
39	APU6039W	0.3949	0.2615	0.3819	0.2253
40	T21LID4P	0.1453	-0.1799	0.5536 X	-0.0919
41	RUIVNBKZ	0.1634	0.2478	0.8016 X	0.0910
42	1QN2S8PJ	0.0955	0.1233	0.5557 X	0.0681
43	WISGHYZV	0.4997	-0.0035	0.7052 X	0.0866
44	D7YKCJTK	0.3871	0.0789	-0.1350	-0.0163
45	BKJSU9UQ	0.0160	0.1437	0.1024	0.5559 X
46	RWN16OSM	0.6418 X	0.2877	0.1151	0.2466
47	SDBRNJC6	-0.4003	0.2267	0.2382	0.4216
48	ZCBDYZYF	0.5068	0.0616	-0.0043	0.0615
49	93AQDFRO	0.4894	0.1140	0.2268	0.5859 X
50	OX67KDJD	0.0345	-0.0011	0.6387 X	0.3453
51	WDTPU5AQ	0.6977 X	0.0720	-0.0294	0.4540
52	IDZSCF7S	0.3240	0.2336	-0.3273	0.4778
53	O7NVX24T	-0.0091	0.1355	-0.0825	-0.4010
54	FBGKLOTZ	0.5278 X	-0.0589	0.1628	0.3461
55	SVMPADXE	0.5361 X	-0.0534	0.3850	0.5120
56	6CDKRN3S	0.2689	-0.0781	0.1857	0.1916
57	OIR3JPNJ	0.4344	-0.2644	-0.0123	-0.2440
58	H2XYIDZ3	0.5066	0.1107	0.3754	0.6545 X
59	K0HQTEXX	0.2476	0.4751	0.1594	0.1871
60	4VTQYYWJ	0.2765	0.2854	-0.1683	0.4392
61	MMBQDXUV	-0.0823	-0.2259	-0.2183	-0.2429
62	JXU0LSMZ	0.5761 X	0.0146	0.2964	0.3193

Table A1.1 Factor loadings on all four factors (continued)

Factor matrix with an X indicating a defining sort					
		Loadings			
Q-sort		Factor 1	Factor 2	Factor 3	Factor 4
63	FXUNB2WC	0.2101	0.3002	-0.0161	0.2624
64	J9XIWF2A	0.3474	-0.0002	0.0279	0.4355
65	YNOK5ZO7	0.3535	0.1107	-0.0136	0.7691 X
66	WDMN9EQP	0.2571	0.0535	0.5138	0.0131
67	Y9K4BXLU	0.5116	0.0868	0.1533	-0.1058
68	YZHDKE4S	0.2761	0.4897	-0.1585	0.3156
69	MMZWFHU4	0.1643	0.4917	-0.0211	-0.3465
70	1ZCQJ3BA	-0.0646	0.1986	-0.1560	0.6313 X
71	MYEKLCF8	-0.0373	-0.1390	0.5069	0.0887
72	4HYIVU3J	0.4690	0.1808	0.0542	0.1582
73	2LJUNDHY	0.1825	0.1717	0.0089	-0.5180
74	2FNPRPLM	0.2771	-0.1217	0.6161 X	0.2089
75	83K49IN6	0.0932	0.3437	0.1054	-0.0132
76	NPWCMUOZ	0.2564	0.2032	0.1446	-0.0615
77	R8DHAEMH	0.2748	0.2402	0.3951	0.4539
78	GPBYTXBV	-0.0005	0.2909	0.2177	0.6237 X
79	4LSWZPRE	0.0775	0.4134	0.1293	0.2348
80	BOOV214T	0.5693 X	0.1070	0.2560	0.4007
81	1IN7SELH	0.4379	0.2834	0.1677	-0.0923
82	KBZRTQ2B	0.6913 X	0.0617	0.1052	0.5214
83	PKUQCZ7Q	0.0893	0.0949	0.5302 X	0.0102
84	PSUQOPE0	-0.1615	0.6339 X	0.2126	0.3712
85	LBHD1FKV	-0.0056	0.8064 X	-0.1261	0.1449
86	PACSUQ49	-0.0017	0.4314	0.5105	-0.1026
87	WXTIU62N	0.4291	0.3785	0.3638	-0.0739
88	P13S9TPS	0.2636	0.6413 X	0.2125	0.3115
89	QD0MCWB1	0.4613	-0.1200	0.3275	-0.2078
90	1KQTN3C6	-0.0355	0.6548 X	-0.0360	0.4950
91	MX9WEFN6	0.3915	0.4834	-0.0988	0.3061
92	UY8DIR1Z	0.1615	0.0863	0.3408	-0.3902
93	A7LDGEO4	0.0607	0.5311 X	0.0981	0.0882
94	Y9ASYI5Z	0.3833	0.4953	0.3307	0.0198
95	3ACKVGFE	0.5175	0.1119	0.0937	0.0839
96	ORDHLJG8	0.5676 X	0.4166	-0.0537	0.2749
97	TDAJSGVZ	-0.3465	0.2607	0.3129	0.0530
98	P2ESHAYY	0.3480	0.2214	0.2850	0.3347
99	RHJDYOE2	0.1755	0.3878	0.4042	0.2175
100	4NIDCBNH	-0.2153	0.6390 X	0.3024	0.1033

Table A1.1 Factor loadings on all four factors (continued)

Factor matrix with an X indicating a defining sort					
		Loadings			
Q-sort		Factor 1	Factor 2	Factor 3	Factor 4
101	TQIMRAO6	0.3364	0.2110	0.1717	-0.2296
102	AQOBUKET	-0.0812	0.4807	0.0865	0.0705
103	KKRFC1BN	0.3107	0.6697 X	0.1045	-0.0733
104	1HFS0CED	-0.0984	0.6520 X	-0.1695	0.2571
105	YMF4B3VO	0.2234	0.1115	0.2205	0.2095
106	6E2IDZ97	-0.1298	0.6155 X	0.3593	-0.0306
107	PELIVSMB	-0.2074	0.3870	-0.0740	0.6343 X
108	XCV0SWRH	0.0752	0.6659 X	0.0884	0.3671
109	6SEUJUFL	0.1311	0.5886 X	-0.1738	-0.0307
110	UEJR7SAC	0.4314	0.0457	-0.1294	0.1341
111	4I3LZZFW	0.2330	0.3048	0.2124	-0.1754
112	P3YDXLDT	0.2121	0.5795 X	-0.0641	0.1335
113	NLISLTWP	0.4006	0.4409	0.2225	0.3834
114	J7W9PT5I	-0.0208	0.6970 X	-0.0027	-0.1347
115	SKYTJGIB	0.2605	0.2212	0.2705	-0.0234
116	RALS2QNK	-0.2351	0.7106 X	0.3417	0.2406
117	Z0FVWTA2	-0.2452	0.2790	0.0844	-0.1153
118	9BLNEO2I	0.0291	0.5638 X	0.0242	0.1295
119	QMWF2APH	0.2350	0.2153	0.2526	0.2383
Explained variance		10%	13%	10%	10%
Respondents associated with this profile		11	21	13	12

Table A1.2 Factor arrays for our four study factors

Statement	Factor 1	Factor 2	Factor 3	Factor 4
1	-1	0	0	-3
2	-3	0	0	2
3	0	2	0	-1
4	2	1	0	3
5	1	-3	0	-1
6	2	1	3	0
7	0	3	1	0
8	0	1	-1	0
9	-2	-2	-1	-2
10	0	-1	3	1
11	1	2	2	1
12	1	-1	1	2
13	0	-2	-2	-1
14	-3	-3	-1	-2
15	-1	0	-3	0
16	3	1	-2	3
17	-2	-2	-2	-3
18	1	0	0	-2
19	0	3	1	1
20	-2	0	-3	2
21	-1	-1	-1	-1
22	3	-1	2	0
23	-1	0	2	0
24	2	2	1	1

APPENDIX II

Example of the factor interpretation crib sheets used in chapter 2.

This appendix includes an example of the factor interpretation crib sheet that was used to interpret each factor (i.e. profile) stemming from the original analysis, and the separate analysis per country.

Table A2.1 Factor interpretation crib sheet (example)

Factor 2
Statements ranked at +3
19. The public professional must encourage an open attitude towards intensive collaboration and consultation between partners in a public–private partnership. 7. In public–private partnerships it is important for public professionals and private partners to jointly determine how to support each other during the project.
Statements ranked higher in factor 2 array than in other factor arrays
3. In public–private partnerships it is important that collaboration takes place on an equal basis between public professionals, private contractors, and other relevant involved actors. (+2) 11. In public–private partnerships it is important to compose mutually agreed rules of behaviour so that both partners know what to expect. (11: +2) (with factor 3) 15. The public professional must guarantee the collaborative process between partners and create the right conditions to achieve synergy between them. (0) (with factor 4) 1. In public–private partnerships it is important to safeguard public values like equality, democracy and transparency. (0) (with factor 3) 8. In public–private partnerships it is important that the private partner is given the opportunity to monitor its own performance (+1)
Statements ranked lower in factor 2 array than in other factor arrays
10. In public–private partnerships it is important to establish a performance-based relationship between public and private partners. (-1) 12. In public–private partnerships it is important that the private partner is responsible for the implementation of the project, assisted by public professionals where required. (-1) 13. The public professional must prevent that the functioning of public–private partnerships results in unwanted situations (like exclusion, arbitrariness and so on). (-2) (with factor 3) 22. The public professional must hold private partners accountable for delivering on the output specifications and apply sanctions if performance falls short. (-1)
Statement ranked at -3
14. The public professional must apply strict contract management and monitor the performance of the private consortium. 5. In public–private partnerships it is important that political authorities play a significant role in formulating the aim and direction of the project.
Additional items
17. The public professional must keep a clear view of, and control on, what happens in public–private partnerships. (-2) 24. The public professional must have confidence in the private partners to manage their own consortium based on their own expertise. (+2)

APPENDIX III

Results of separate factor analysis per country in chapter 2.

This appendix includes the results of the factor analysis of the Q-sorts per country. It shows how each statement is scored in the different profiles that resulted from the analysis per country.

Table A3.1 Factor arrays for analysis of the Canadian Q-sorts

Statement	Factor 1	Factor 2	Factor 3
1	0	-3	0
2	-1	0	-3
3	2	-1	-2
4	0	3	1
5	-2	-2	-2
6	3	1	3
7	1	0	0
8	0	1	-1
9	-1	-3	-1
10	2	0	2
11	2	1	1
12	0	0	1
13	-1	-1	-2
14	-2	-1	2
15	0	2	-1
16	-3	3	2
17	-3	-2	-1
18	1	-2	0
19	3	2	0
20	-2	2	-3
21	-1	-1	0
22	1	0	3
23	1	0	0
24	0	1	1

Table A3.2 Factor arrays for analysis of the Dutch Q-sorts

Statement	Factor 1	Factor 2	Factor 3
1	0	-1	0
2	1	-3	-3
3	1	2	-2
4	0	1	3
5	-3	-3	-1
6	2	2	2
7	3	2	1
8	0	1	0
9	-1	-2	1
10	0	1	0
11	2	0	2
12	-1	0	1
13	-1	-1	0
14	-3	0	-3
15	0	-1	-2
16	0	1	3
17	-1	-2	-1
18	-2	-1	1
19	3	0	2
20	1	-2	-2
21	-2	0	-1
22	-2	3	0
23	1	0	-1
24	2	3	0

Table A3.3 Factor arrays for analysis of the Danish Q-sorts

Statement	Factor 1	Factor 2	Factor 3
1	-2	-2	0
2	-1	2	-1
3	1	-2	1
4	1	3	0
5	2	0	2
6	3	-1	0
7	-1	0	3
8	0	0	-1
9	-2	-3	-2
10	0	1	0
11	0	3	3
12	2	0	1
13	0	-1	-1
14	-3	-2	-3
15	-1	0	-3
16	1	1	2
17	-3	-3	-2
18	0	-1	1
19	1	1	1
20	0	2	-2
21	-2	-1	-1
22	3	0	0
23	-1	1	0
24	2	2	2

APPENDIX IV

Results of the additional linear regression analyses in chapter 2.

This appendix includes the results of the multiple linear regression analysis conducted as a robustness check, to test if the results of the Q-sort holds.

To perform a linear regression, we used the factor scores for each profile as the dependent variable. The analysis was performed for each profile (model 1 refers to profile 1, model 2 to profile 2, and so on). The difference between professionals working for the public partner or the private partner, the country these respondents come from, and their experience are included as independent variables, using dummies to test them. Each model is linear and has a normal distribution. The analysis shows that all models are significant. The results of the multiple linear regressions can be found in the table below.

Table A4.1 Linear regression analyses

	Model 1		Model 2		Model 3		Model 4	
	β	Sig.	β	Sig.	β	Sig.	β	Sig.
Public versus private professionals (Public professionals as reference)								
Private partner	-.255	.011*	.204	.024*	-.151	.120	.301	.002**
Country (Canada as reference)								
Netherlands	-.160	.140	.427	.000***	-.253	.018*	.125	.221
Denmark	.089	.401	-.072	.457	-.272	.010**	.322	.002**
Experience (< 1 year as reference)								
1-3 years	.005	.971	.068	.574	.121	.355	.212	.093
3-5 years	-.032	.812	-.037	.762	.303	.023*	.328	.011*
5-10 years	.042	.786	-.052	.710	.357	.019*	.321	.028*
> 10 years	-.071	.664	.109	.458	.222	.163	.374	.016*

* p < .05; ** < .01; *** p < .001
β: Standardized Coefficients Beta

APPENDICES FOR CHAPTER 3.

APPENDIX V

Characteristics of the records included in the literature review of chapter 3.

This appendix provides the exact data regarding the characteristics of the records included in the review. For example, the countries analysed in the articles, and an overview of the journals these articles are published in are included.

Table A5.1 Countries analysed in the articles[13]

Country	Number of times studied
Australia	8
Canada	2
China (including Hong Kong)	10
Cyprus	1
Estonia	1
Greece	1
India	2

13 The total number times a country-specific case is studied (70) is larger than the number of articles included in this review (62), because some articles study multiple cases in different countries.

Indonesia	1
Ireland	1
Italy	2
Jordan	1
Malaysia	2
Netherlands	5
Nigeria	1
Norway	1
The Philippines	1
Portugal	1
Singapore	1
South-Africa	1
Spain	3
Sri Lanka	1
UK	11
USA	5
Not mentioned	1
No specific country	6

Table A5.2 Overview of journal articles[14]

Journal	No. of articles included in review	Field of study [14]
ABACUS	1	Business, accounting, and Finance
Administration and Society	2	Public Administration
Asia-Pacific Journal of business administration	1	Business, accounting, and Finance
Asia-Pacific Journal of management	1	Management
Australian Accounting Review	2	Business, accounting, and Finance
Building and Environment	1	Construction and Engineering
Built Environment Project and Asset Management	1	Construction and Engineering
Civil Engineering and Environmental systems	1	Construction and Engineering
Cross cultural & Strategic Management	1	Management
Engineering, construction and architectural management	3	Construction and Engineering | Management
Environment and Planning C: Government and Policy	1	Public Administration
Habitat International	1	Environmental studies | Planning and development | Urban studies
Health Policy	1	Health

14 The classification of the journals is based on the InCites Journal Citation Reports - http://jcr.incites.thomsonreuters.com/JCRLandingPageAction.action. Note that some journals may fall in multiple categories.

International Journal of Disaster resilience in the Built Environment	1	Other
International Journal of Managing projects in business	2	Business, accounting, and Finance | Management
International journal of operations & production management	1	Management
International journal of organizational analysis	1	Organizational studies
International Journal of Project Management	2	Management
International Journal of Public Sector Management	2	Public Administration
International review of Administrative Sciences	3	Public Administration
Journal of Accounting & Organizational Change	1	Business, accounting, and Finance
Journal of business logistics	1	Business, accounting, and Finance | Management
Journal of business research	1	Business, accounting, and Finance
Journal of civil engineering and management	1	Construction and Engineering
Journal of international development	1	Planning and development
Journal of managerial psychology	1	Psychology | Management
Journal of purchasing and supply management	2	Management
Journal of Strategic security	1	Military Science
Management	1	Management
Management and Organization Review	1	Management
Negotiation journal	1	Management | Interdisciplinary social sciences
Nonprofit and voluntary sector quarterly	1	Social issues
Policing and society	1	Criminology & Penology
Policy and Politics	1	Public Administration
Policy and Society	1	Public Administration
Preventing chronic disease	1	Health
Public Administration	2	Public Administration
Public administration and development	1	Public Administration
Public Administration Review	1	Public Administration
Public Management Review	2	Public Administration
Public money and management	2	Public Administration
Public performance and management review	2	Public Administration
Scandinavian political studies	1	Political Science
Social Science and medicine	1	Health | Biomedical Social Sciences
Society and natural resources	1	Environmental studies | planning and development | Sociology
Systems research and behavioural science	1	Management | Interdisciplinary social sciences
Transport reviews	1	Transportation
Urban Geography	1	Geography | Urban studies

APPENDIX VI

Overview of all characteristics, antecedents, and outcomes of relational quality from the literature review of chapter 3.

This appendix provides an overview of all the characteristics, antecedents, and outcomes mentioned in the articles that are included in the literature review of chapter 3.

Table A6.1 Characteristics of social relationships in PPP projects[15]

Characteristics	Number of articles mentioning it
(Mutual) trust	52
Commitment	31
Communication	26
Reciprocity	12
Respect	9
Openness	9
Goodwill	9
Confidence	7
Social capital	7
Fairness	6
Knowledge sharing	6
Common goals	6
Willingness to compromise	4
Mutual understanding	3
Cohesion	3
Responsibility	3
Loyalty	3
Care	2
Other[16]	22
Total	220

Table A6.2 Antecedents of social relationships in PPP projects[16]

Antecedent	Number of articles mentioning it
Shared norms, values, and beliefs	22
Communication	21

15 In the table we clustered terms with similar meaning into one aspects in order to keep the table clear and readable. An example is the merge of the aspects 'communication' and 'social interaction' into one cluster.

16 In the table we clustered terms with similar meaning into one aspects in order to keep the table clear and readable. An example is the merge of the aspects 'shared values and beliefs' and 'shared norms' into one cluster.

Expertise and experience	15
Prior ties	10
Leadership and (process) management	9
Contract & control mechanisms	9
Shared goals and interests	8
Clear division of labor	6
Selecting the right partner	6
Information sharing	6
Reputation	6
(willingness to) compromise	5
Flexibility	5
Personnel turnover	5
Expected benefits for both	5
Professionals' personalities	4
Risk transfer	4
Similar mind set	4
Power balance	4
Geographic proximity	3
Organizational attributes	3
Other[18]	39
Total	195

Table A6.3 Outcomes of social relationships in PPP projects[17]

Outcome	Number of articles mentioning it
Success and performance of PPP project	25
Efficiency, effectiveness	9
Better collaborative process	9
Information sharing	8
Decreased transaction costs	6
More innovation	5
Increased flexibility	5
Higher sustainability	5
Reduced number of conflicts	3
Enhanced problem solving capacity	2
Satisfaction	2
Trust	2
Other[20]	18
Total	99

17 In the table we clustered terms with similar meaning into one aspects in order to keep the table clear and readable. An example is the merge of the aspects 'successful PPP projects' and 'better performance of PPP project' into one cluster.

APPENDICES FOR CHAPTER 4.

APPENDIX VII

Cluster analysis for different countries, project types, and government levels

To check the results for existing clusters in our data, we performed additional analysis to see whether the results vary over the different clusters.

For the clustering it is important to look at both the pooled consistency as well as the cross-sectional consistency for the different clusters in the data. Consistency usually is considered sufficient above the generally accepted threshold of 0.75 (see also Ragin, 2008). The distance between the consistencies of each cluster indicates he differences between the clusters. If the distance is close to zero, the consistencies are (almost) identical between the various clusters. Distances between consistencies of 0.2 or more indicate strong differences between clusters in the dataset (Garcia-Castro & Arinõ, 2016).

The cluster analysis shows, first, that there are no substantial differences between Dutch and Flemish cases included in our study (see Table A7.1). The distance between the consistencies are very small, even the configuration NM*RA is slightly less able to explain Flemish PPP projects. With a consistency of 0.748, it is slightly below the threshold of 0.75. The study also shows that there are no substantial differences between PPP projects on the national and the local level. Both the consistency scores and the distance between consistencies indicate that the solution formula can be used to explain both PPPs on a local as well as a national level (see Table A7.2).

Table A7.1 Cluster analysis between countries

	NM*EXP	NM*RA	EXP*RA
Pooled consistency	0.902	0.839	0.916
Consistency for Belgian cases	0.901	0.748	1.000
Consistency for Dutch cases	0.903	0.882	0.882
Distance from between to pooled	0.001	0.058	0.044

Table A7.2 Cluster analysis between cases on local and national level

	NM*EXP	NM*RA	EXP*RA
Pooled consistency	0.902	0.839	0.916
Consistency for local cases	1.000	1.000	1.000
Consistency for national cases	0.868	0.809	0.899
Distance from between to pooled	0.050	0.075	0.037

Finally, a cluster analysis was performed to check for differences between different types of PPP projects (Table A7.3). Here, the analysis shows that the three configurations are well able to explain transport infrastructure projects, but that the consistency for social infrastructure projects are somewhat lower. In particular the configurations NM*RA and EXP*RA score below the threshold of 0.75. This also leads to small differences between the clusters. In particular, the distance in consistencies for configuration EXP*RA (0.119) suggests some heterogeneity between the different types of PPPs. However, the distance is still well below the threshold of 0.2, suggesting that the differences are only small and no strong differences across type of PPP exist in this dataset.

Table A7.3 Cluster analysis between project type

	NM*EXP	NM*RA	EXP*RA
Pooled consistency	0.902	0.839	0.916
Consistency for social infrastructure	0.845	0.712	0.712
Consistency for transport infrastructure	0.943	0.888	1.000
Distance from between to pooled	0.039	0.078	0.119

APPENDIX VIII

Robustness checks for the QCA analysis in chapter 4.

Due to the required calibration of the data, all QCA studies run the risk of potential measurement errors. Careful and transparent calibration of all conditions might lower this risk, but to test for potential measurement errors, several robustness checks are performed to see if the results hold after the measurement of a condition or outcome is altered. In this appendix I present two robustness checks. First, a different calibration of 'experience' has been used. In the second robustness check, the use of the multi-value construct of 'relational quality' has been replaced by trust. The results of the robustness checks show no significant differences in the analysis of necessity. However, changing the outcome variable from relational quality to trust does have an impact on the solution formula in the analysis of sufficiency.

For the first robustness check, some changes are made in the calibration of the condition 'experience'. The original condition (EXP) is calibrated using the public partners' perception on the private partners experience, corrected using website information in PPP projects. In the recalibrated version, we only use the survey data (EXP2). This means we leave out the information on the constructors' websites regarding PPP projects to correct the survey data. Although the score of experience increases from 0.733 to 0.846, the renewed analysis of necessity shows that still none of the conditions passes the threshold of 0.9, indicating that none of the conditions

is necessary. The analysis of sufficiency shows a few cases changing truth table rows, but this does not have a big impact on the solution formula (see table A8.1). The solution formula shows that the path NM*EXP(2) and the path EXP(2)*RA remain, which slightly different scores. However, the path NM*RA has disappeared. Closer study of the data shows that case P11 and P23 are responsible for this change. Both cases scored below 0.5 when using EXP. Using the recalibrated EXP2, both projects score above the cross-over point of 0.5. This makes the configuration NM*RA unnecessary, as both cases now also display the combination NM*EXP. P11 and P23 were the only two cases that in the original analysis were not covered by both paths, thus their changed set membership in the set EXP2 leads to the disappearance of the path NM*RA. As the solution formula using EXP2 shows only small, non-contradictory changes to the original solution formula, the analysis indicates that the study is fairly robust.

Table A8.1 Conservative solution term, using EXP2 instead of EXP

Configurations →	Path 1	Path 2
	NM*EXP2	EXP2*RA
Consistency	0.882	0.923
Raw coverage	0.668	0.534
Unique coverage	0.245	0.111
Solution consistency	0.875	
Solution coverage	0.779	

In the second robustness check, the outcome has been calibrated differently. Our theoretical argument is that relational quality consists of more than mere trust, even though trust is considered a core concept in this respect. Therefore, instead of using 'relational quality', which has been calibrated using scores on trust, openness, and frequent communication, the outcome has been calibrated using only the core concept of trust. The analysis of necessity shows no significant differences. Still, none of the conditions passes the threshold of 0.9. However, the solution formula (see table A8.2) shows that using trust rather than relational quality does not yield the same results. The configuration NM*RA remains, and the combination EXP*RA is altered only slightly by the addition of ~FC (the absence of frequent communication in the tender phase). However, the configuration NM*EXP changes into NM*~FC, and a fourth configuration appears. The most noteworthy change is the sudden appearance of ~FC. This suggests the importance of the absence of frequent communication for high mutual trust between project partners. The explicit mentioning of ~FC is particularly surprising as it seems to contradict most theories in this respect. In general, frequent communication is considered rather important for trust. Here, the explicit absence of frequent communication in the tender phase seems to lead to trust between project

partners. So, the change from relational quality as the outcome variable into trust, does have an effect on the robustness of the paper. This suggests that extra care has to be taken in how to measure relational quality. Trust is not considered the exact same as relational quality as it is currently used in this paper.

Table A8.2 Conservative solution term, using Trust instead of Relational Quality

Configurations →	Path 1	Path 2	Path 3	Path 4
	NM*~FC	NM*RA	~FC*~EXP*~RA	~FC*EXP*RA
Consistency	0.893	0.880	0.855	0.884
Raw coverage	0.485	0.477	0.379	0.277
Unique coverage	0.041	0.207	0.051	0.022
Solution consistency	0.839			
Solution coverage	0.786			

APPENDICES FOR CHAPTER 5.

APPENDIX IX

Means, standard deviations and correlations (n= 94) for the analysis in chapter 5.

Table A9.1 Means, standard deviations and correlations (n= 94)

	M	SD	1	2	3	4	5	6	7
1. perceived performance	3.98	0.49	1						
2. cooperation	3.39	0.75	0.46***	1					
3. management	3.89	0.58	0.37***	0.30**	1				
4. trust	6.71	1.95	0.41***	0.43***	0.40***	1			
5. technical complexity	7.31	2.13	0.30**	0.02	0.04	0.08	1		
6. project phase (1 = building finished)	0.36	0.48	0.27**	0.23*	0.13	0.20	0.02	1	
7. organizational background (1 = public partner)	0.48	0.50	-0.16	-0.15	-0.03	0.05	-0.18	-0.10	1

Note: *** $p < .001$; ** $p < .01$; * $p < .05$

APPENDIX X

The intercept only

The intercept only with the outcome variable 'perceived project performance' (PER1)
Summary of the model specified:
Level-1 Model

$$PER1_{ij} = \beta_{0j} + r_{ij}$$

Level-2 Model

$\beta_{0j} = \gamma_{00} + u_{0j}$

Mixed Model

$PER1_{ij} = \gamma_{00} + u_{0j} + r_{ij}$

Final Results

$\sigma^2 = 0.14642$

Standard error of $\sigma^2 = 0.02613$

τ

INTRCPT1,β_0	0.09961

Standard error of τ

INTRCPT1,β_0	0.03724

Table A10.1 Intercept only 'perceived project performance'

Random level-1 coefficient	Reliability estimate
INTRCPT1,β_0	0.552

The value of the log-likelihood function at iteration 8 = -7.179775E+001

Table A10.2 Final estimation of fixed effects

Fixed effect	Coefficient	Standard error	*t*-ratio	Approx. *d.f.*	*p*-value
For INTRCPT1, β_0					
INTRCPT2, γ_{00}	3.997710	0.060063	66.558	49	<0.001

Table A10.3: Final estimation of fixed effects (with robust standard errors)

Fixed effect	Coefficient	Standard error	*t*-ratio	Approx. *d.f.*	*p*-value
For INTRCPT1, β_0					
INTRCPT2, γ_{00}	3.997710	0.060057	66.566	49	<0.001

Table A10.4: Final estimation of variance components

Random effect	Standard deviation	Variance component	*d.f.*	χ^2	*p*-value
INTRCPT1, u_0	0.31561	0.09961	49	119.73308	<0.001
level-1, r	0.38264	0.14642			

The intercept only with the outcome variable 'cooperation' (SAM1)

Summary of the model specified

Level-1 Model

$SAM1_{ij} = \beta_{0j} + r_{ij}$

Level-2 Model

$\beta_{0j} = \gamma_{00} + u_{0j}$

Mixed Model

$SAM1_{ij} = \gamma_{00} + u_{0j} + r_{ij}$

Final Results

$\sigma^2 = 0.37682$

Standard error of $\sigma^2 = 0.06858$

τ

INTRCPT1,β_0	0.21086

Standard error of τ

INTRCPT1,β_0	0.08733

Table A10.5: Intercept only 'cooperation'

Random level-1 coefficient	Reliability estimate
INTRCPT1,β_0	0.503

The value of the log-likelihood function at iteration 17 = -1.172110E+002

Table A10.6: Final estimation of fixed effects

Fixed effect	Coefficient	Standard error	*t*-ratio	Approx. *d.f.*	*p*-value
For INTRCPT1, β_0					
INTRCPT2, γ_{00}	3.373292	0.091571	36.838	49	<0.001

Table A10.7: Final estimation of fixed effects (with robust standard errors)

Fixed effect	Coefficient	Standard error	*t*-ratio	Approx. *d.f.*	*p*-value
For INTRCPT1, β_0					
INTRCPT2, γ_{00}	3.373292	0.091564	36.841	49	<0.001

Table A10.8: Final estimation of variance components

Random effect	Standard deviation	Variance component	*d.f.*	χ^2	*p*-value
INTRCPT1, u_0	0.45919	0.21086	49	107.36216	<0.001
level-1, r	0.61386	0.37682			

APPENDIX XI

The Lindell and Whitney test

The Lindell and Whitney test uses a theoretically unrelated construct as a marker variable to adjust the correlations between the principal constructs. Any high correlation among these items would be an indicator of common method bias. We used a survey variable that is not used in this study to answer our research question as a marker (to what extent are societal groups involved?). Table A11.1 shows the correlation coefficients and the R-squared between variables in the model and the marker. The highest value corresponds to the perceived performance variable. The R-squared of this correlation coefficient shows the maximum percentage of variance shared between factors. If common sources bias were a concern, we would obtain high levels of dependency between factors and the marker. In our study however, a low level of common source effect is shared between constructs (R2=0.025).

Table A11.1 Correlation and R2 between variables and marker

Variables in the model	Pearson's coefficient	R2
Cooperation	0.128	0.016
Perceived performance	0.158	0.025
Management	0.034	0.001
Trust	0.056	0.003
Organizational background	- 0.111	0.012
Project phase	- 0.127	0.016
Technical complexity	0.073	0.005

APPENDICES FOR CHAPTER 6.

APPENDIX XII

The calibration procedure used in chapter 6.

This appendix provides further details about the calibration of the four conditions (risk allocation, the application of sanctions, conflict management, and trust) and the outcome (outstanding performance).

Outstanding performance

In this article, we have defined successful PPPs as projects with outstanding performance (OP). In an earlier attempt, successful PPPs were defined as 'good performance', but many projects scored reasonably well, leading to too little variation between the

projects. Therefore, we raised the bar, wondering what distinguishes exceptionally good projects from poor or reasonable performing PPP projects. Outstanding performance was calibrated using four conditions:

- On time delivery
- On budget delivery
- Value for money
- Satisfaction

The first three conditions are calibrated individually for each project. A score of zero means that respondents agree that the criteria have not been met (e.g. no on time delivery, or no on budget delivery). If respondents agree that the criteria have been a scores of one is given. When respondents partially agree with the statement, or if there are minor differences of opinion (e.g. one actor totally agrees that value for money has been delivered, while the other only partially agrees), the project will receive a score of 0.67. Large differences of opinion between partners (e.g. the public partner agrees that the project was delivered on budget, but the private partner strongly disagrees with this statement) will result in a score of 0.33.

The initial score for the project is then determined according to the following scheme:

Table A12.1 Calibration of individual indicators for 'outstanding performance'

Situation	Calibration OP
All three conditions are calibrated with a 1	1
All conditions have a score above the cross over point, but at least one of them scores 0.67	0.67
One out of three conditions scores below the cross over point. The other two score above.	0.33
Two or three out of three conditions score below the cross over point.	0

These initial scores are corrected using the indicator satisfaction. Satisfaction is calibrated in the same way as the other three conditions. Satisfaction scores can be used to adept the initial score. If the difference between the assessment of the 'traditional' performance measures and the satisfaction of the partners with the project is substantial, qualitative interview data are used to provide information on whether respondents merely try keeping up appearances by giving a high satisfaction score or whether they have other reasons to be satisfied with the project performance. This finally results in the 'final score' for outstanding performance.

Table A12.2 Calibration of 'outstanding performance'

Project	On time delivery	On budget delivery	Value for money	Initial score	Satisfaction	Final score
P1NG	0.51	0.00	0.33	0.00	0.67	0.00
P2BG	0.33	0.33	0.67	0.00	0.67	0.00
P3NTI	1.00	0.33	0.67	0.33	0.33	0.00
P4NG	0.33	0.33	1.00	0.00	0.33	0.00
P5BTI	0.33	1.00	0.33	0.00	0.67	0.00
P6BTI	0.51	1.00	0.33	0.33	0.67	0.33
P7NTI	1.00	0.33	1.00	0.33	1.00	0.67
P8NTI	0.51	0.51	1.00	0.67	0.67	0.67
P9NG	1.00	0.33	0.67	0.33	0.67	0.33
P10BTI	1.00	0.33	1.00	0.33	1.00	0.33
P11NTI	1.00	0.33	1.00	0.33	1.00	0.33
P12BG	0.00	1.00	1.00	0.33	1.00	0.33
P13BG	0.67	0.33	1.00	0.33	1.00	0.33
P14NTI	1.00	0.33	1.00	0.33	0.67	0.67
P15NTI	0.51	1.00	1.00	0.67	0.67	0.67
P16NG	0.33	0.33	1.00	0.00	0.67	0.33
P17BG	0.33	0.33	0.67	0.00	1.00	0.33
P18NTI	1.00	0.67	1.00	0.67	1.00	1.00
P19BTI	1.00	1.00	1.00	1.00	1.00	1.00
P20NG	0.67	1.00	1.00	0.67	1.00	0.67
P21BTI	1.00	0.67	1.00	0.67	1.00	0.67
P22BTI	1.00	1.00	1.00	1.00	1.00	1.00
P23NG	1.00	0.67	1.00	0.67	1.00	0.67
P24BG	1.00	1.00	1.00	1.00	1.00	1.00
P25BG	1.00	1.00	1.00	1.00	1.00	1.00

Risk allocation

For the calibration of the condition risk allocation, we used a relatively straightforward method, determining the scores on the number and type of tasks that were transferred to the private partner or deliberately remained a responsibility of the private partner. We limited ourselves to the formal risk allocation. However, we also tested a calibration using a combination of aspects on risk allocation, namely the formal risk allocation and the perceptions on the fairness of this allocation. However, this way of calibrating the data leads to very paradoxical scores. In projects where partners pay attention to a proper risk division, the partners are also well aware of the fact that partners are sometimes unable to carry the risks they have been given. In projects where only limited attention was given to risk division, and the private partner carried most of the risks, both partners were less worried about the question

whether partners would be able to deal with the consequences of these risks. This resulted in lower scores for the first group on 'proper risk allocation', and higher scores for the second group, which does not reflect the basic theoretical assumptions underlying this condition.

Strict application of sanctions

In the calibration of this condition data stems from the survey data, using the statement: 'We sometimes deviate from the sanctions as described in the contract in order to maintain a good relationship between the partners involved in the project.' Furthermore, qualitative interview data is used to distinguish the reasons for imposing or remitting sanctions in order to determine the set membership score on the condition 'strict application of sanctions'. If there is a strict application of sanctions, sanctions will always be applied if the monitoring process shows that performance does not live up to the required standards. If there is no strict application of sanctions, sanctions are not always applied. Sometimes sanctions are cancelled due to circumstances or because the shortcomings are beyond the power of the partner to prevent them. A project with a full membership score of 1 in the set 'strict application of sanctions' can be defined as *'a project in which obligatory sanctions are imposed without any exceptions. The optional sanctions are usually imposed, unless there are very compelling reasons not to. There are no or limited options to discuss the sanction.'* A project with a score of 0 would mean that *'optional sanctions are hardly ever imposed, while obligatory sanctions are avoided as much as possible. There would be many examples in the project of sanctions not being imposed, even if there was an opportunity to do so.'*

Conflict management

The calibration of the condition conflict management is done using a Generic Membership Evaluation Template suggested by Tóth et al. (2017). This allows us to provide a clear overview of the qualitative data on this condition per project. Differences between actors can be included in the form. Table A12.3 provides an example of the GMET for the condition conflict management.

Table A12.3 GMET used to calibrate 'conflict management'

Generic Membership Evaluation Template (GMET)				
Membership in the set of 'good conflict management'				
Overall case description from a 'conflict management' perspective	*Here, we give a description of the case in terms of conflict, differences of opinion, and the way the partners in the project deal with them.*			
Dimensions	Context-specific description	Direction/ effect on membership	Intensity/ relative importance	Illustrative quotes
Nature of agreements on conflict management Focus of the agreements on conflict management Timing of agreements on conflict management Early attention for potential 'sensitive issues'	*Description of the presence of this dimension in the case*	*Negative, neutral or positive*	*High, medium, or low*	*State quotes from the interviews*
Supportive Quantitative data	*Here, we include the scores of the respondents in the case based on the statements: 'Conflicts between public and private partners are resolved constructively', and 'The partners involved in the project succeeded in controlling differences of opinion in an adequate matter.'*			
Set membership in 4-value fuzzy set	*Here, we insert our score on the 4-value fuzzy set*			
Reason for fuzzy-set attribution score	*Give a qualitative explanation for scoring the project with the above-mentioned membership score.*			

Guidelines towards the decision of the set membership score for each project in 4-value fuzzy set:

1: Overall intense and various positive dimensions - The project had both formal and informal agreements on conflict management, the agreements were focused on both prevention and solving conflicts, the agreements were made early in the process, and there was early attention for potential 'sensitive' issues.

0.67: Mostly positive dimensions with a few negative dimensions - For example, a project has both formal and informal agreements on conflict management, focused on preventing and solving conflicts, and there was some attention to 'sensitive issues.' However, the agreements were only installed after a conflict arose during the construction phase.

0.33: Mostly negative dimensions with a few positive dimensions - For example, a project has both formal and informal agreements on solving conflicts that have been established early in the process. However, there is no early attention for potential sensitive issues, and there are no agreements made on how to prevent the rise of conflicts.

0: Overall intense and various negative dimensions

Trust

In determining the set membership score for the condition trust, survey data on five statements (see below) are used. The statements can be found below:

- To what extent do the partners involved in this project fulfil their agreements?
- To what extent do the partners involved in this project give each other the benefit of the doubt?
- To what extent do the partners involved take each other's interests into account?
- To what extent can the partners involved in this project assume that the intentions of the other partner are in principle good?
- To what extent do the partners involved in this project use the efforts of the other partner for their own gain (at the expense of joint goals)?

Results

The result of the calibration procedure is shown in Table A12.4 below.

Table A12.4 Results of the calibration process

Project	Risk allocation (RA)	Strict application of sanctions (S)	Conflict management (CM)	Trust (T)	Outstanding performance (OP)
P1NG	0.00	0.33	0.67	0.00	0.00
P2BG	0.00	0.67	0.00	0.00	0.00
P3NTI	0.33	0.67	0.33	0.00	0.00
P4NG	0.00	0.67	0.33	0.33	0.00
P5BTI	0.33	0.00	0.33	0.67	0.00
P6BTI	0.67	1.00	0.00	0.33	0.33
P7NTI	0.67	0.33	1.00	0.67	0.67
P8NTI	0.33	0.00	1.00	0.67	0.67
P9NG	0.00	1.00	0.00	0.67	0.33
P10BTI	0.67	1.00	0.33	0.67	0.33
P11NTI	0.67	0.67	1.00	1.00	0.33
P12BG	0.33	0.33	0.33	0.67	0.33
P13BG	0.00	0.67	0.67	0.67	0.33
P14NTI	1.00	0.33	1.00	0.67	0.67
P15NTI	1.00	1.00	1.00	1.00	0.67
P16NG	0.33	0.67	0.33	0.33	0.33
P17BG	0.00	0.67	0.33	0.33	0.33
P18NTI	1.00	0.00	1.00	0.67	1.00
P19BTI	0.33	0.33	0.33	0.67	1.00
P20NG	1.00	0.67	1.00	0.33	0.67
P21BTI	0.00	0.33	0.33	0.67	0.67
P22BTI	1.00	0.33	0.33	0.67	1.00
P23NG	0.67	1.00	0.00	0.67	0.67
P24BG	0.67	1.00	0.67	0.67	1.00
P25BG	0.00	0.33	0.33	1.00	1.00

APPENDIX XIII

Additional analysis for the QCA in chapter 6.

Most parsimonious solution term and the intermediate solution term

In the analysis, we also produced the most parsimonious solution term. This includes a simplifying assumption on truth table row 7. The most parsimonious solution term is only slightly different from the conservative solution term. Based on the theoreti-

cal expectations that all four conditions in their presence contribute to outstanding PPP performance, the intermediate solution term is created. This creation results in exactly the same solution term as the conservative solution term presented earlier.

Table A13.1 Most parsimonious solution term

Configurations →	Path 1	Path 2	Path 3
	T*RA	RA*CM	T*CM*~S
Consistency	0.845	0.770	0.901
Raw coverage	0.594	0.540	0.485
Unique coverage	0.109	0.054	0.135
Solution consistency	0.784		
Solution coverage	0.783		

Table A13.2 Intermediate solution term

Configurations →	Path 1	Path 2	Path 3
	T*RA	RA*CM*S	T*CM*~S
Consistency	0.845	0.823	0.901
Raw coverage	0.594	0.377	0.485
Unique coverage	0.109	0.028	0.135
Solution consistency	0.823		
Solution coverage	0.757		

Cluster analysis for different countries, project types, and government levels

To check the results for existing clusters in our data, we performed additional analysis to see if the results vary over the different clusters. For the clustering based on country both the pooled consistency and the cross-sectional consistency for each individual country in the set is rather high (see also table A13.3 below). Only the consistency for the Dutch cases in the configuration RA*CM*S is below the generally accepted threshold of 0.75 (see also Ragin 2008). Important is also the distance between the between consistencies, and the overall consistency. If this distance is close to zero, this indicates that the consistencies are (almost) identical between the countries (Garcia-Castro & Arinõ 2016). The results show that most configurations hold for both the Dutch as well as the Belgian cases. The differences in terms of consistency are limited. For the first two configurations (T*RA and T*CM*~S) this is close to zero, indicating that there are no differences between countries with regard to these configurations. The adjusted distance of 0.112 for the configuration RA*CM*S indicates some of heterogeneity across countries. Since all distances between consistencies are below 0.2, none of the adjusted-distances suggest the existence of strong differences across country in the dataset (Garcia-Castro & Arinõ 2016).

Table A13.3 Cluster analysis between countries

	T*RA	T*CM*~S	RA*CM*S
Pooled consistency	0.845	0.901	0.823
Consistency for Belgian cases	0.799	0.875	1.000
Consistency for Dutch cases	0.875	0.918	0.727
Distance from between to pooled	0.032	0.017	0.112

For the clustering between types of project (transport versus social infrastructure) the analysis shows that the consistency scores are rather good, except for the consistency for the transport infrastructure PPPs in the configuration RA*CM*S. With 0.726, this is just below the threshold of 0.75. Only the adjusted difference for the configuration RA*CM*S shows some heterogeneity, but none of them suggests the existence of strong differences between the two types of cases.

Table A13.4 Cluster analysis between project types

	T*RA	T*CM*~S	RA*CM*S
Pooled consistency	0.845	0.901	0.823
Consistency for social infrastructure PPPs	1.000	0.857	1.000
Consistency for transport infrastructure PPPs	0.789	0.924	0.726
Distance from between to pooled	0.084	0.026	0.112

Finally, we also tested for differences between the local and the national level. All consistency scores, both the pooled consistency and the between consistencies are above the threshold of 0.75. Moreover, none of the adjusted distances indicates heterogeneity. There is no sign of differences between the cases on a local and national level.

Table A13.5 Cluster analysis between cases on local and national level

	T*RA	T*CM*~S	RA*CM*S
Pooled consistency	0.845	0.901	0.823
Consistency for national level PPPs	1.000	1.000	1.000
Consistency for local level PPPs	0.809	0.883	0.785
Distance from between to pooled	0.075	0.044	0.085

Robustness tests

Despite all efforts to provide a solid calibration of the conditions used in this study, the risk of potential measurement errors remains. As most conditions in this study are calibrated using qualitative interview data and in-depth case knowledge, it is hard to artificially determine different thresholds. Moreover, alternative calibration without

harming the underlying (theoretical) principles is not always possible. However, in order to test for potential measurement errors, we performed two robustness tests using different calibrations of the conditions 'trust'. The conditions trust is only based qualitative survey data, which allows us to change the threshold more easily. In the first robustness test the same five indicators for trust are included, but the thresholds are altered. The cross-over point of 0.5 in the original condition trust (T) was set at 30,5. In the alternative calibration of trust (T2), we altered the cross-over point to 33. The threshold determining the difference between a membership score of 0 and a score of 0.33 changed from 25,25 to 22. The threshold determining the difference between a membership score of 0.67 and 1 remained at 40. Using these thresholds, we performed a new analysis. The analysis of necessity had the same results as the original analysis. The truth table displayed a few differences. Truth table row 10, 11, 12 were not regarded as sufficient for the outcome in the analysis using T2 due to inclusion cuts below 0.8. As we excluded row 10 and 12 in the original analysis due to the presence of deviant cases consistency in kind, not including row 11 remains the only difference. Although the set membership score of the case in row 11 remains the same, the inclusion cut for this row drops below 0.8. This results in a different solution formula (see Table A13.6) in which the third path disappeared. This can be explained easily, as the case covered in truth table row 11 was the only uniquely covered case in path 3. Path 1 and 2 remain exactly the same.

Table A13.6 Conservative solution term, using T2 instead of T.

Configurations →	**Path 1**	**Path 2**
	T*RA	RA*CM*S
Consistency	0.845	0.823
Raw coverage	0.594	0.377
Unique coverage	0.245	0.028
Solution consistency	0.821	

In the second robustness test we included only four indicators for trust. These four indicators were formulated in a positive way. The only statement that was formulated in a negative way was excluded, as respondents might overlook the negative phrasing of this statement and score it similar as the four positive statements. As the maximum score now changed from 50 to 40, we also altered the thresholds. The cross-over point of 0.5 in the original condition trust (T) was set at 30,5. In this alternative calibration using only four indicators (T3), the cross-over point is 28. The threshold determining the difference between a membership score of 0 and a score of 0.33 changed from 25,25 to 19.9. Finally, the threshold determining the difference between a membership score of 0.67 and 1 changed from 40 to 34. Using T3 as an alternative calibration

of trust, the results of the analysis were almost identical to the original analysis. Both the analysis of necessity and the conservative solution term in the analysis of sufficiency are identical to the original analysis. The only difference is that some of the truth table rows had a slightly higher inclusion cut, but as the same rows remained included in the analysis, this is not a substantial change.

Table A13.7 Conservative solution term, using T3 instead of T.

Configurations →	**Path 1**	**Path 2**	**Path 3**
	T*RA	RA*CM*S	T*CM*~S
Consistency	0.845	0.823	0.901
Raw coverage	0.594	0.377	0.485
Unique coverage	0.109	0.028	0.135
Solution consistency	0.800		
Solution coverage	0.757		

Based on the results of the robustness tests as described above, we would argue that the results of our analysis are fairly robust. The changed calibration of the conditions trust had no major effect as the results are close to the original. The use of the altered condition T3 resulted in an identical conservative solution formula. It displayed the same INUS conditions. The results for the analysis using T2 were not as good, but still satisfying as the new solution did not contradict the old one. Moreover, the new solution formula was a subset of the original conservative solution formula. Therefore, both solutions are in a set relation, which indicates that the results are fairly robust (see Skaaning 2011; Schneider & Wagemann 2012).

Samenvatting (Dutch summary)

Vandaag de dag worden publiek-private samenwerkingen in veel landen gebruikt om publieke goederen en diensten te realiseren. Het gebruik van publiek-private samenwerkingen – die we kunnen omschrijven als een vorm van samenwerking tussen publieke en private partijen met een duurzaam karakter, waarin de actoren gezamenlijk werken aan de ontwikkeling van een product of dienst en risico's, kosten en baten gedeeld worden – vraagt van publieke organisaties dat zij hun rol in het realiseren van publieke dienstverlening opnieuw overdenken. Ze moeten nadenken over de manier waarop ze met hun partners willen samenwerken en over de manier waarop ze sturing binnen samenwerkingsverbanden en partnerschappen willen vormgeven. De zoektocht naar antwoorden op deze vragen roept voor publieke organisaties interessante dilemma's op tussen autonomie en controle, zekerheid en flexibiliteit, en risico en meerwaarde. Eén van de belangrijkste dilemma's waar publieke organisaties in publiek-private samenwerkingen mee om moeten gaan is de spanning tussen controle en samenwerking. Dat laatste impliceert in zekere zin immers een bepaalde mate van loslaten.

Publiek-private samenwerking als contractvorm

Dit sturingsvraagstuk speelt ook bij de '*long term infrastructure contracts*' die centraal staan in dit proefschrift. Deze vorm van publiek-private samenwerking is gebaseerd op langdurige contractuele samenwerking tussen publiek en private partners en integreert verschillende projectfasen in één contract: zowel het ontwerp, als ook de bouw, de financiering en het onderhoud worden gebundeld om zoveel mogelijk lifecycle optimalisaties mogelijk te maken. Een typisch kenmerk van deze contractvorm is dat de risico's verdeeld worden tussen de publiek en private partner op basis van het principe dat de risico's belegd worden bij de partner die ze het best kan beheersen. In de praktijk leidt dit er nog wel eens toe dat het overgrote deel van de risico's bij de private partij terecht komt. Onder andere in Nederland wordt dit type publiek-private samenwerking vaak gebruikt, onder de naam DBFM of DBFMO, refererend naar de verschillende projectfasen die in het contract vervat zitten: design (D), build (B), finance (F), maintain (M) en eventueel operate (O).

Contractuele versus relationele sturing

Het gebruik van contracten in publiek-private samenwerking, zoals DBFM, is een bekende sturingsvorm en bouwt voort op bekende economische theorieën over transactiekosten en de principaal-agent relatie tussen opdrachtgever en opdrachtnemer. Deze theorieën gaan uit van rationeel en mogelijk zelfs opportunistisch gedrag van partners - waarbij partners een situatie in hun eigen voordeel zullen benutten - en zien het contract als een geschikt instrument om het gedrag van beide samenwerkingspartners te sturen en opportunistisch gedrag te voorkomen. Een belangrijk en

inherent nadeel aan het gebruik van deze contracten is echter dat contracten nooit compleet zijn. Ze zijn niet in staat om rekening te houden met alle mogelijke omstandigheden. De complexiteit van publiek-private samenwerkingsprojecten en het langdurige karakter van dergelijke projecten maken dit des te meer een onmogelijkheid.

Relationele sturing is een sturingsvorm gebaseerd op heel andere uitgangspunten. Het gaat uit van het idee dat publiek-private samenwerkingen ingebed zijn in sociale relaties, die gekenmerkt worden door wederzijdse afhankelijkheid tussen de partners. Partners hebben elkaar nodig en moeten daarom samenwerken. Sturingsmechanismen ontstaan in dit geval op basis van de waarden en processen in deze relatie, en krijgen de vorm van onder meer informatiedeling, open communicatie, en het gezamenlijk oplossen van problemen. Deze vorm van sturing probeert samenwerking en het streven naar win-win oplossingen te stimuleren. Ondanks de positieve connotatie die velen hebben bij deze sturingsvorm, kent ook relationele sturing nadelen. Het vraagt om een grote investering in de vorm van tijd en middelen om deze sturingsvorm te ontwikkelen en consequent toe te passen. Tijd en middelen die partners op dat moment niet kunnen investeren in kerntaken. Het is bovendien niet altijd eenvoudig om gezamenlijk een oplossing voor een probleem te formuleren. De verschillende agenda's, tegenstrijdige belangen, verschillende machtsbronnen, en de complexiteit van onderliggende issues hierbij een uitdaging. Het bereiken van overeenstemming met behulp van deze sturingsvorm kan daarom tijdrovend zijn, waardoor de vordering van het project soms traag te noemen is.

Wat is de hoofdvraag van dit proefschrift?

Hoewel vaak gepresenteerd als twee tegengestelde vormen van sturing, kunnen we contractuele en relationele sturing zien als de uiteinden van een spectrum, waarbij het mogelijk is om beide vormen met elkaar te combineren. Eerder onderzoek heeft al aangetoond dat contractuele en relationele sturing elkaar niet uitsluiten, maar elkaar juist goed kunnen aanvullen (Poppo & Zenger, 2002). Bij het dilemma tussen controle en loslaten dat publieke organisaties ervaren in publiek-private samenwerking, speelt de balans tussen contractuele en relationele sturing een grote rol. De keuze voor een sturingsvorm, of een mix van sturingsvormen, heeft effect op de prestaties van publiek-private samenwerkingsprojecten. In dit proefschrift bestudeer ik de manier waarop publieke organisaties contractuele en relationele sturing kunnen combineren voor een succesvolle publiek-private samenwerking. Daarbij wordt ook aandacht besteed aan de kwaliteit van de relatie tussen projectpartners. In eerder onderzoek wordt gehint op de mogelijkheid dat de kwaliteit van de relatie in staat is om de relatie tussen sturing en performance te verklaren (Zheng et al., 2008). Het is immers niet alleen het gebruik van sturingsmechanismen, maar ook de reactie van projectpartners op het gebruik daarvan die het uiteindelijke succes van de sturing bepaalt.

Pogingen tot relationele sturing hebben wellicht minder effect als wantrouwen tussen projectpartners ertoe leidt dat ze zich niet volledig aan deze sturingsvorm willen committeren. Strikte contractuele sturing in een relatie van matige kwaliteit kan leiden tot verdere verslechtering van die relatie, waardoor deze vorm van sturing uitmondt in eindeloze discussies over de interpretatie van contractvereisten. Omgekeerd kunnen hoogwaardige relaties tussen projectpartners leiden tot acceptatie van de toegepaste sturingsstrategie, waardoor het waarschijnlijker wordt dat deze mechanismen hun beoogde effect zullen bereiken. In dit onderzoek wordt daarom relationele kwaliteit meegenomen als mediërende variabele in de relatie tussen sturing en performance. Dat leidt tot de centrale onderzoeksvraag in dit proefschrift:

> *Hoe kunnen contractuele en relationele sturing de prestaties van publiek-private samenwerkingen beïnvloeden en wat is de rol van relationele kwaliteit daarin?*

Om deze onderzoeksvraag te beantwoorden, zijn er vier deelvragen geformuleerd, die in de verschillende empirische hoofdstukken beantwoord worden. De eerste deelvraag richt zich op de sturingsvoorkeuren van de professionals die in dergelijke projecten werken: *Wat zijn de verschillende percepties van professionals werkzaam in publiek-private samenwerkingsprojecten met betrekking tot de sturing van publiek-private samenwerking?* Hoofdstuk 2 van dit proefschrift analyseert hun percepties en belangrijkste overwegingen met betrekking tot het gebruik van verschillende sturingsmechanismen. De tweede deelvraag richt zich op het ontwikkelen van een beter begrip van het concept 'relationele kwaliteit': *Wat is relationele kwaliteit en welke determinanten zijn van invloed op de relationele kwaliteit in publiek-private samenwerkingen?* Hoofdstuk 3 en 4 pogen een antwoord te formuleren op deze deelvraag. De derde deelvraag richt zich ook op relationele kwaliteit, maar dan in relatie tot de prestaties van publiek-private samenwerkingen: *Welke invloed heeft relationele kwaliteit op de prestaties van publiek-private samenwerkingen?* In hoofdstuk 5 wordt de veelvoorkomende aanname dat hoogwaardige relaties de prestaties van samenwerkingen verbeteren getest. De laatste deelvraag gaat over het effect van sturing op de prestaties van publiek-private samenwerkingen. Deze deelvraag richt zich daarbij expliciet op het combineren van verschillende sturingsvormen en heeft tot doel te identificeren welke combinaties van contractuele en relationele sturing aanwezig zijn in goed presterende publiek-private samenwerkingsprojecten: *Hoe verhouden contractuele en relationele sturing zich tot elkaar in succesvolle publiek-private samenwerkingsprojecten?* Zowel hoofdstuk 5 als 6 besteden aandacht aan deze laatste deelvraag.

Waarom is dit proefschrift relevant?

De wetenschappelijke waarde van dit onderzoek ligt zowel op theoretisch als methodologisch vlak. Allereerst reageert dit proefschrift op de roep om meer aandacht voor relationele aspecten in het onderzoek naar publiek-private samenwerkingen. Met name in het onderzoek naar door contracten gestuurde publiek-private samenwerkingsprojecten is de aandacht voor relationele 'zachte' aspecten beperkt. Dit onderzoek richt zich juist op die elementen en draagt zodoende bij aan meer inzicht in en begrip van het belang van deze relationele factoren in dergelijke samenwerkingsprojecten. Een tweede theoretische bijdrage ligt op het gebied van de literatuur over sturing. Hoewel inmiddels bekend is dat verschillende sturingsvormen gecombineerd kunnen worden in meer hybride vormen van sturing, biedt dit proefschrift heel concreet inzicht in hoe contractuele en relationele sturingsvormen gecombineerd kunnen worden en welke specifieke combinaties een rol spelen bij succesvolle projecten. Een laatste wetenschappelijke bijdrage ligt op methodologisch vlak. Onderzoek naar publiek-private samenwerkingen wordt gedomineerd door kleinschalige casusstudies en kwantitatief vragenlijstonderzoek. Het onderzoek in dit proefschrift is uitgevoerd met meer geavanceerde onderzoeksmethoden, zoals Qualitative Comparative Analysis en Q-methodology. Deze methoden worden tot op heden weinig gebruikt worden in onderzoek naar publiek-private samenwerkingen. Het gebruik van deze methoden leidt tot het ontstaan van nieuwe kennis over publiek-private samenwerking en draagt tegelijkertijd bij aan de methodologische ontwikkeling van dit onderzoeksveld.

Naast wetenschappelijk waarde, levert dit proefschrift ook waardevolle inzichten op voor de samenleving. Steeds vaker ontmoeten publieke en private professionals elkaar in het publieke domein om publieke goederen en diensten te leveren. Die ontmoetingen leiden niet altijd tot succesvolle samenwerking. Dit proefschrift biedt handvaten voor samenwerkende professionals ten aanzien van de sturing van de samenwerking en de relatie tussen professionals werkzaam in deze samenwerking. Het biedt inzicht in de mogelijkheden om verschillende sturingsvormen met elkaar te combineren, benadrukt het belang van een goede relatie, en toont aan welke factoren kunnen bijdragen aan de ontwikkeling van een goede samenwerkingsrelatie. Deze inzichten vormen belangrijke puzzelstukjes voor publieke organisaties en professionals die worstelen met de puzzel van sturing in publiek-private samenwerking.

Wat zijn de kernbevindingen van dit proefschrift?

Om een antwoord te geven op de hoofdvraag, bevat dit proefschrift vijf empirische hoofdstukken die elk een deel van de hoofdvraag helpen te beantwoorden (hoofdstuk 2 tot en met 6).

1. De sturingsvoorkeuren van professionals verschillen, maar zijn meestal hybride vormen van sturing, waarin verschillende sturingsmechanismen gecombineerd kunnen worden.

Op basis van het onderzoek in hoofdstuk 2 naar de percepties van publieke en private professionals op de sturing van publiek-private samenwerking, kunnen we vier verschillende profielen onderscheiden. Deze profielen zijn clusters van professionals die een soortgelijk beeld hebben van de manier waarop sturing in publiek-private samenwerking eruit zou moeten zien. Elk profiel vertegenwoordigt een andere voorkeur op het gebied van sturing. In het onderzoek valt op dat de percepties van professionals vrijwel altijd een combinatie zijn van bestaande theoretische paradigma's over sturing. Hun sturingsvoorkeuren kennen een hybride karakter, waarbij contractuele en relationele sturingsvormen gecombineerd kunnen worden. De profielen verschillen voornamelijk in de mate van controle versus samenwerking en de mate waarin de private partner de ruimte krijgt om het project te managen. Het eerste profiel combineert een voorkeur voor controle met beperkte ruimte voor de private partner om zijn eigen besluiten te nemen. De private partner moet leveren volgens de voorgeschreven performance indicatoren, en de publieke opdrachtgever controleert dat vervolgens. Elke partner heeft zijn eigen taken en verantwoordelijkheden volgens duidelijk vastgelegde afspraken. Samenwerking is alleen mogelijk zolang dit geen invloed heeft op de verdeling van taken en verantwoordelijkheden. Het tweede profiel richt zich juist sterk op samenwerking en benadrukt het belang van openheid en vertrouwen. Er is geen sprake van veel ruimte voor de private partner, omdat besluiten bij voorkeur in gezamenlijkheid genomen worden. Het derde profiel biedt meer ruimte voor de private partner om zelf besluiten te nemen ten aan zien van het management van het project. Aangezien veel risico's overgedragen worden naar de private partner, is al te veel invloed van de publieke partner onwenselijk. De publieke partner bepaalt slechts de kaders waarbinnen de private partner moet werken. Binnen het vierde en laatste profiel domineert opnieuw het idee dat de private partner de ruimte moet krijgen om zijn eigen besluiten te nemen. In tegenstelling tot het vorige profiel, hechten professionals hier minder belang aan publieke controle. De private partner wordt gezien als de partij met voldoende expertise om het project te realiseren, terwijl de publieke partner zich schikt in een rol als facilitator. Elk profiel bestaat uit een mix van professionals met verschillende culturele, organisatie- en persoonlijke achtergronden. Desondanks valt wel op dat sommige profielen in een bepaald land dominanter zijn dan in het andere land. Nederlandse professionals hechten bovengemiddeld vaak waarde aan het tweede profiel, waarin samenwerking centraal staat, terwijl Canadese professionals meer neigen naar een vorm van sturing gebaseerd op contracten en prestatie-indicatoren. De Deense professionals neigen het meest naar het vierde profiel, waarin veel ruimte gegeven wordt aan private partijen binnen de samenwerking.

Ook de ervaring van de professional en de organisatie waarvoor iemand werkt, lijken een rol te spelen. Meer ervaren professionals kiezen, net als professionals werkzaam voor private organisaties, in verhouding vaker voor een vorm van sturing waarin meer ruimte gelaten wordt aan de private partner.

2. Relationele kwaliteit bestaat uit meer dan alleen vertrouwen. Openheid, communicatie, respect en toewijding zijn eveneens relevante kenmerken van hoogwaardige relaties.

De literatuur review in hoofdstuk 3 toont aan dat eerder onderzoek naar relationele kwaliteit in publiek-private samenwerkingen nog relatief beperkt is. Het concept relationele kwaliteit lijdt bovendien nog aan conceptuele vaagheid. Het onderzoeksgebied kan in dit verband leren van de bestaande literatuur over gerelateerde onderwerpen, zoals sociaal kapitaal, relationship marketing en de literatuur over netwerken en samenwerking. Hoofdstuk 3 biedt een eerste conceptualisering van het begrip relationele kwaliteit in publiek-private samenwerking. Het concludeert dat relationele kwaliteit gaat over de staat van relaties, die gedefinieerd kunnen worden als langdurige, interpersoonlijke, sociale banden tussen actoren. Deze relatie wordt onder andere gekenmerkt door vertrouwen, een van de meest onderzochte aspecten van relationele kwaliteit. Hoofdstuk 3 onderscheidt daarnaast ook andere elementen van sociale relaties tussen projectpartners: de aanwezigheid van openheid, communicatie, respect en toewijding zijn eveneens relevante kenmerken van hoogwaardige relaties. Dit nodigt ertoe uit om bij het onderzoeken van relationele kwaliteit naar meer te kijken dan alleen vertrouwen. Er bestaan complexe en wederkerige relaties tussen deze vijf verschillende kenmerken. Zo kan openheid bijvoorbeeld van invloed zijn op vertrouwen en vice versa. Daarnaast is relationele kwaliteit een dynamisch concept, aangezien de kwaliteit van de relatie in de loop der tijd kan veranderen. Dit levert uitdagingen op bij het meten van relationele kwaliteit. De literatuur review identificeert daarnaast een aantal mogelijke determinanten die de kwaliteit van de relatie kunnen beïnvloeden. Deze determinanten bestaan op individueel (ervaring, personeelsverloop), project- (management, gedeelde waarden) en organisatieniveau (leiderschap).

3. Een eerlijke risicoverdeling, netwerkmanagementactiviteiten en ervaring kunnen in verschillende combinaties een bijdrage leveren aan het bouwen van goede relaties.

Het vierde hoofdstuk uit het proefschrift test een aantal van de determinanten die in de literatuur review geïdentificeerd worden, namelijk netwerkmanagement, de risico allocatie van publiek-private samenwerkingsprojecten, ervaring, en de communicatie voorafgaand aan de start van de bouw. Met behulp van een Qualitative Comparative

Analysis onderzoeken we hoe deze condities voorkomen bij 25 publiek-private samenwerkingsprojecten in Nederland en Vlaanderen. De analyse toont drie combinaties van condities, ook wel configuraties genoemd, die voorkomen bij publiek-private samenwerkingsprojecten waarvan de projectpartners een goede relatie hebben.

a. Een combinatie van netwerkmanagementactiviteiten en ervaring;
b. Een combinatie van een eerlijke risicoverdeling en ervaring;
c. Een combinatie van netwerkmanagementactiviteiten en een eerlijke risicoverdeling.

Op basis van deze resultaten kunnen een aantal conclusies getrokken worden. Allereerst toont dit onderzoek aan dat er een kern van waarheid schuilt in de uitspraak: 'een goed begin is het halve werk'. Immers, zowel de risicoverdeling als de ervaring van de professionals wordt in dit onderzoek voorafgaand aan het project bepaald. Een eerlijke verdeling van risico's en ervaren medewerkers zijn blijkbaar goede uitgangspunten voor hoogwaardige relaties in een samenwerking. Daarnaast toont dit hoofdstuk het belang van netwerkmanagementactiviteiten. Deze activiteiten helpen om de relatie te behouden gedurende het project. Aangezien netwerkmanagementactiviteiten, met name de activiteiten gericht op het verbinden van actoren, beschouwd kunnen worden als vorm van relationele sturing, zien we hier ook een indicatie van de relatie tussen sturing en relationele kwaliteit. De derde configuratie laat ten slotte zien dat contractuele sturing – in de vorm van risicoverdeling – en relationele sturing – in de vorm van netwerkmanagement – niet op zichzelf staan, maar elkaar kunnen aanvullen bij het realiseren van hoogwaardige relaties in publiek-private samenwerkingsprojecten.

4. Goede relaties doen ertoe: vertrouwen leidt tot betere samenwerking en betere prestaties.

Hoewel er zelden getwijfeld wordt aan het belang van goede relaties, is het belang van een sterke vertrouwensband tussen partners in publiek-private samenwerkingen niet uitgebreid onderzocht. Op basis van een vragenlijstonderzoek onder professionals werkzaam in publiek-private samenwerkingsprojecten in Nederland concludeert hoofdstuk 5 van dit proefschrift dat vertrouwen en netwerkmanagement belangrijk zijn voor de samenwerking in en de gepercipieerde performance van publiek-private samenwerkingsprojecten. Zo toont het onderzoek aan dat zowel vertrouwen als netwerkmanagement een significante relatie hebben met de gepercipieerde performance van publiek-private samenwerkingen. Daarnaast is er ook een significante relatie tussen vertrouwen en samenwerking. Netwerkmanagement is in deze analyse niet significant. De correlatietest laat echter wel zien dat management samenhangt met vertrouwen. Het is daarom mogelijk dat er een indirect verband ligt tussen

netwerkmanagement en samenwerking, via vertrouwen. Dit is een indicatie voor de mediërende rol van relationele kwaliteit (in dit hoofdstuk getest in de vorm van vertrouwen) in de relatie tussen relationele sturing (in dit hoofdstuk in de vorm van netwerkmanagement) en performance (hier: samenwerking).

De bevindingen benadrukken het belang van relationele kwaliteit in publiek-private samenwerking. Gezien de complexiteit van dergelijke projecten en hun sterke relatie met de omgeving, en dus met andere betrokken stakeholders, is dit niet verwonderlijk. Publiek-private samenwerkingsprojecten hebben een lange looptijd en er kunnen in die tijd onverwachte dingen gebeuren. Dat betekent dat constante aandacht voor de samenwerking, het vermogen om om te gaan met onverwachte gebeurtenissen die niet gespecificeerd zijn in het contract, en het beheren van relaties cruciaal zijn voor het succes van het project.

5. Succesvolle publiek-private samenwerkingen combineren contractuele en relationele sturingsmechanismen tot een hybride vorm van sturing.

Het laatste hoofdstuk bouwt voort op het onderzoek van Poppo en Zenger (2002) die suggereren dat contractuele en relationele sturing elkaar niet uitsluiten, maar juist aanvullen. De resultaten in hoofdstuk 6 bevestigen dit en toont bovendien aan welke mix tussen beide sturingsvormen mogelijk is. In dit hoofdstuk wordt geconcludeerd dat, hoewel succesvolle PPS-projecten vaak een mix van sturingsmechanismen vertonen, in enkele projecten sommige sturingsinstrumenten andere mechanismen lijken te vervangen. Niet alle contractuele en relationele sturingsmechanismen hoeven aanwezig te zijn in een publiek-private samenwerking. Hoofdstuk 6 presenteert drie specifieke combinaties van contractuele en relationele sturingsmechanismen die kunnen worden aangetroffen in goed presterende publiek-private samenwerkingen:

a. Een combinatie van vertrouwen en een eerlijke risicoverdeling;
b. Een combinatie van een eerlijke risicoverdeling, strikte toepassing van sancties, en conflictmanagement;
c. Een combinatie van vertrouwen, conflictmanagement, en het ontbreken van een strikte toepassing van sancties.

Uit deze drie configuraties kunnen enkele conclusies worden getrokken. De eerste conclusie is dat contractuele en relationele sturingsmechanismen complementair aan elkaar kunnen zijn. De eerste twee configuraties zijn concrete voorbeelden waarop deze sturingsvormen gemixt kunnen worden en leveren daarmee duidelijk bewijs voor het idee dat een hybride sturingsvorm noodzakelijk is. De tweede conclusie is dat duidelijke afspraken belangrijk zijn om de prestaties van publiek-private samenwerkingen te verbeteren. Ze verminderen onzekerheid en bieden richtlijnen

als het moeilijk wordt. De vraag of deze afspraken tot stand zijn gekomen met behulp van contractuele of relationele sturingsmechanismen is wellicht van minder belang, aangezien zowel de afspraken die in een contract zijn vastgelegd - zoals afspraken over de risicoverdeling - als de afspraken die zijn gemaakt via relationele controlemechanismen - zoals conflictbeheersing - te vinden zijn in bovenstaande configuraties. Een derde conclusie is dat het effect van de strikte toepassing van sancties als sturingsmechanisme niet eenduidig is. In de tweede configuratie zien we de aanwezigheid van strikte toepassing van sancties, terwijl de derde configuratie juist de afwezigheid van strikt opgelegde sancties benadrukt. Dit suggereert dat het gebruik van een specifiek sturingsmechanisme goed moet aansluiten bij de andere mechanismen die worden gebruikt in de sturing van publiek-private partnerschappen om het gewenste effect te hebben. Een laatste conclusie betreft de derde configuratie, waarin relationele sturingsmechanisme dominant zijn. Hoewel de verklarende waarde van dit pad laag is, lijkt het erop te wijzen dat goede prestaties kunnen worden bereikt met uitsluitend relationele sturingsmechanismen. Dit onderstreept de belangrijke rol van relationele sturing in publiek-private samenwerkingen.

Putting the pieces together: wat zijn de belangrijkste conclusies van dit proefschrift?
In antwoord op de centrale onderzoeksvraag in dit proefschrift: *Hoe kunnen contractuele en relationele sturing de prestaties van publiek-private samenwerkingen beïnvloeden en wat is de rol van relationele kwaliteit daarin?* kunnen we stellen dat contractuele en relationele sturingsvormen complementair aan elkaar zijn. Het is de mix van sturingsvormen die ertoe doet en belangrijk is in goed presterende publiek-private samenwerkingen. Dit resulteert in een hybride vorm van sturing (zie hoofdstuk 2 en 6). Contractuele sturingsmechanismen dwingen af dat eerder gemaakte afspraken over rollen, risico's en verantwoordelijkheden nageleefd worden en geven duidelijkheid aan de betrokken partners. Relationele sturingsmechanismen zijn ontworpen om de bereidheid van partners te vergroten om rekening te houden met de unieke omstandigheden van het project, empathie voor hun projectpartner te tonen, en tijd te nemen voor een gezamenlijke afweging van elkaars behoeften en belangen.

In sommige gevallen lijkt dit proefschrift erop te wijzen dat relationele sturingsmechanisme de dominante sturingsvorm (zouden moeten) zijn. Geen van de goed presterende publiek-private samenwerkingsprojecten in deze dissertatie maken uitsluitend gebruik van contractuele sturing, maar er zijn er wel enkele die voornamelijk bouwen op relationele sturing (zie hoofdstuk 6). Dit benadrukt het belang van relationele sturing voor het functioneren van publiek-private samenwerkingen. Dit wordt bevestigd in hoofdstuk 5, dat het positieve verband aantoont tussen relationele sturing (in de vorm van netwerkmanagement) en de prestaties van publiek-private samenwerking. Dat laatste wordt daarbij niet uitsluitend gemeten in termen van efficiëntie, maar ook

aan de hand van de balans tussen kosten en baten, de integrale aard van de oplossing en de tevredenheid van alle partners die bij het project betrokken zijn. Bovendien heeft relationele sturing een positieve correlatie met relationele kwaliteit. Omdat relationele kwaliteit – gemeten aan de hand van het belangrijke kenmerk vertrouwen – de samenwerking beïnvloedt, leidt dit tot de conclusie dat: relationele sturing (a) een direct, positief effect heeft op de prestaties van publiek-private samenwerking en (b) een indirect, positief effect op samenwerking van dergelijke projecten. Relationele kwaliteit heeft daarnaast ook een significant, positief effect op de ervaren prestaties. De kwaliteit van de relaties in publiek-private samenwerkingen vormt daarmee een mediërende variabele in de relatie tussen relationele sturing en de performance van publiek-private samenwerkingen. Sturingsmechanismen spelen een belangrijke rol bij het opbouwen van hoogwaardige relaties in publiek-private samenwerkingen. Zowel netwerkmanagement als een eerlijke risicoverdeling zijn aanwezig in hoogwaardige relaties (zie hoofdstuk 4). Dit betekent dat zowel relationele sturing - in de vorm van netwerkbeheer - als contractuele sturing - gekenmerkt door een focus op risicoverdeling - van belang zijn voor het opbouwen van goede relaties. Voor dat laatste geldt dit alleen als niet alle risico's worden overgedragen aan de private partner. Zolang de risicoverdeling als eerlijk wordt beschouwd, kunnen contractuele afspraken ook leiden tot meer openheid, meer vertrouwen en meer respect.

De consequenties van dit onderzoek voor de praktijk

Het combineren van contractuele en relationele sturingsmechanismen kan voor managers dilemma's creëren. Enerzijds moeten zij in staat zijn om verschillende sturingsmechanismen te gebruiken, deze te combineren, en de juiste balans te vinden voor een bepaalde situatie. Tegelijkertijd moeten ze duidelijkheid verschaffen aan de betrokken partners over de 'governance' van het project. De verwachtingen van projectpartners met betrekking tot de sturing van het project moeten worden afgestemd, zodat beide partners weten wat ze kunnen verwachten. Er lijkt in dit opzicht een dunne lijn te zijn tussen flexibiliteit en voorspelbaarheid. Managers moeten de vaardigheid bezitten om een dialoog over het gebruik van sturingsmechanismen te faciliteren en verschillende sturingsmechanismen te combineren. De Q-methodologie, die zijn nut heeft bewezen als instrument om de percepties en voorkeuren van professionals te achterhalen, zou in dit opzicht ook een nuttig instrument kunnen zijn voor professionals die bij de uitoefening van hun beroep te maken krijgen met publiek-private samenwerkingen. Informatie afkomstig van een Q-study kan een startpunt bieden voor een dialoog over governance en de balans tussen contractuele en relationele sturing in publiek-private samenwerkingen. Het gebruik van met name relationele sturingsmechanismen is daarnaast in veel publiek-private samenwerkingsprojecten geen standaard werkwijze. Het is daarom belangrijk om deze mechanismen te ver-

ankeren in het project, waarbij er zowel bij de start van het project als gedurende het project expliciet aandacht besteed wordt aan relationele vormen van sturing. Het gebruik van simulatiespellen en 'serious games' kan hierbij een hulpmiddel vormen. Ten slotte kan het gebruik van hybride sturingsvormen uitdagingen oproepen voor de (publieke) organisatie. Niet elke organisatie is eraan gewend noch ingericht om dergelijke hybride vormen van sturing te accommoderen en te ondersteunen. Het implementeren van een mix aan sturingsvormen vraagt om een organisatie-breed debat over hoe een publieke organisatie wil samenwerken met private partners, en wat dat betekent voor de organisatie zelf. De Nederlandse Marktvisie, een document waarin verschillende publieke en private organisaties de intentie uitspreken om verder te kijken dan het contract bij het managen van grote infrastructurele projecten, is een eerste stap op weg naar een dergelijke dialoog. De intentie die in de Markvisie wordt uitgesproken, zou echter in elk onderdeel van deze organisaties moeten doorklinken. Het mixen van sturingsvormen tot een hybride manier van sturing vereist immers autonomie en ondersteuning van projectmanagers, zodat ze de ruimte hebben om de balans tussen contract en relatie kunnen kiezen die op dat moment het beste werkt voor hun project.

About the author

Rianne Warsen (1991) studied Public Administration and Organizational Sciences at Utrecht University. After completing her bachelor's degree and the Dutch master's degree 'Bestuur en Beleid', she completed the two-year research master's degree in research in public administration and organizational science. During her study she was student member of the Board Academic School of the Utrecht School of Governance (2013-2014), worked as a research assistant for IKPOB on a project on public values (2014-2015) and worked on the strategy and policy department of TNO while writing her master's thesis (2015).

After graduating, Rianne joined the Erasmus School of Social and Behavioural Sciences (ESSB) at the Erasmus University, Rotterdam as a PhD candidate. Her PhD project was part of the NWO Smart Governance project and focused on hybrid forms of governance in public-private partnerships. During her PhD, Rianne has been collaborating internationally with scholars from Belgium, Denmark, and Canada. In 2017, she was visiting PhD researcher at the Copenhagen Business School. She presented her work at various international and national conferences, acted as a reviewer for academic journals such as the Journal of Public Administration Research and Theory and delivered several talks about her research at various occasions. Rianne completed several courses at the Netherlands Institute of Governance (NIG), the Erasmus Graduate School of Social Sciences and the Humanities (EGSH), and renowned method schools such as the ECPR Winter School in Bamberg. During her PhD project, she was also affiliated with consultancy firm Rebel, where she contributed to the evaluation of the Dutch Grensmaas/ Zandmaas programme. Next to her academic work, Rianne represented the interests of PhD's within the PhD council of the Erasmus Graduate School of Social Sciences and the Humanities (2017-2018).

Currently, Rianne is working as an Assistant Professor Public Management at the Department of Public Administration and Sociology at the Erasmus University, Rotterdam. She teaches various courses, both at bachelor and master level and recently (May 2020) obtained her University Teaching Qualification. Her work has been published in, among others, top journals in the field of public administration, such as Public Administration, Public Management Review, and the Journal of Public Administration Research and Theory. Although she uses both quantitative and qualitative methods, Rianne has specialized in qualitative methods, including Q-methodology and Qualitative Comparative Analysis. Her current research interests are the study of public-private partnerships, hybrid forms of governance, inter-organizational collaboration and networks in the public sector, and the effect of collaboration on the functioning of public organizations.

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