

Public sector decision-making in the context of
Public-Private Partnership
Case: Pneumatic waste collection

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Abstract

Scarcity of funds has arisen the need for the public sector to seek for new ways to fund important investments. This has increased the popularity of Public-Private Partnerships, which are found to be a worthy alternative to the traditional procurement methods. Nowadays, these partnership arrangements are widely used in the provision of public services.

In a Public-Private Partnership a public operator does not purchase an asset but signs a long-term contract with the private company for the supply of serviced asset. The private company builds and maintains the needed facilities and delivers the acquired services. Instead of a large initial investment, public sector operator makes a regular payment, which covers the use of the asset and provision of the related services.

Public sector should pursue Public-Private Partnership only if its overall benefits exceed the benefits of other options. This is normally shown with a value for money analysis, which is a variant of the net present value method. However, decisions to conduct a Public-Private Partnership are not always based on analytical findings. Furthermore, accounting in general is not a neutral instrument but it can be used to promote or disguise decision-makers motives. Many studies have questioned the reliability of the value for money analysis.

The purpose of this study is to identify characteristics of decision-making practices in Finnish public-private-partnerships thorough a case study. Empirical data was collected by interviews and observations of a competitive tendering of a pneumatic waste collection system.

This study shows how public sector decision-making is a complex task that may dilute responsibility. Additionally, it reinforces the assumption that public sector decision-making is often focused on economical aspects. This study also highlights the weakness of the value for money analysis to disregard the fall back position, an option where the public sector decides to provide the needed services with already existing infrastructures

Keywords Public-private-partnership, Investments, decision-making

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Tiivistelmä

Julkisen talouden vaikea tilanne on nostanut esiin tarpeen investointimalleille, jotka mahdollistavat tärkeiden investointien alkuun saattamisen ohi julkisten budjettirajoitteiden. Tämä on johtanut julkisen ja yksityisen sektorin yhteistyöllä toteutettujen investointien suosion kasvuun.

Yhteistyö-mallilla toteutetussa investoinnissa julkinen taho ei hanki tarvitsemaansa omaisuuserää itselleen vaan solmii sen tuottamisesta pitkäaikaisen sopimuksen yksityisen yrityksen kanssa. Yksityinen yritys vastaa hankkeen suunnittelusta, toteutuksesta ja rahoituksesta. Suuren alkuinvestoinnin sijaan julkinen valta sitoutuu maksamaan sopimuksen mukaisesti palvelumaksuja, joilla katetaan omaisuuserän käyttö sekä siihen liittyvät palvelut.

Julkisen vallan tulisi kuitenkin toteuttaa hanke yhteistyössä yksityisen toimijan kanssa vain jos siitä saadut kokonaishyödyt ovat muita mahdollisuuksia suuremmat. Tämä todennetaan yleensä käyttäen ”value for money” analyysia, joka on muunneltu nettonykyarvo menetelmästä. Aikaisemmissa tutkimuksissa on kuitenkin todettu, että päätökset yhteistyöstä eivät kuitenkaan aina perustu analyttisiin löydöksiin. Myöskään laskentatoimea ei itsessään voida pitää täysin neutraalia vaan sitä voidaan hyödyntää päätöksentekijän motiivien eteenpäinviemiseen. Useat tutkimukset ovatkin kyseenalaistaneet ”value for money” analyysin luotettavuuden.

Tämän tutkimuksen tarkoituksena on tutkia yhteistyöpäätöksiä suomalaisessa asiayhteydessä. Tutkimuksen empiiriset havainnot kerättiin seuraamalla jätteiden putkikeräysjärjestelmän kilpailutusta sekä haastatteleamalla kilpailuprosessin osallistujia.

Tämä tutkimus osoittaa julkisen vallan päätöksenteon olevan monimutkaista ja mahdollistavan vastuun jakautumisen eri päätöksentekijöille. Tämä tutkimus tukee aikaisempaa käsitystä siitä, että julkisen sektorin päätökset perustuvat usein taloudellisiin asioihin. Lisäksi tutkimuksen tulokset tukevat oletusta ”value for money” analyysin heikkoudesta jättää huomiotta julkisen sektorin mahdollisuus tuottaa tarvittavat palvelut käyttäen jo olemassa olevaa infrastruktuuria.

Avainsanat Elinkaarimalli, Investoinnit, Päätöksenteko, Julkinen sektori

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1. Introduction

1.1 Background and motivation

Scarcity of funds has increased public sector's need to create partnerships with private sector entities, in order to finance, construct and operate capital-intensive projects (Grimsey & Lewis, 2002a; Rutherford 2003; Liu et al., 2015). Due to the economic crisis governments across the European Union pursue reduction in public spending and debt (Alonso et al., 2015). In Finland municipalities also face very challenging economic situations. It may be hard or even impossible for municipalities to finance investments, although their need is be clear. Sometimes budgetary constraints can even prevent socially profitable investments (Head & Georgiou, 2011). Thus, there is need for untraditional ways to finance and operate public investments.

Partnerships with the private sector have found to be highly rational in a situation where the municipalities lack financial or operational resources to provide needed services with acquired quality (Massoud & El-Fadel, 2002; Head & Georgiou, 2011). In a traditional Public-Private Partnership a public operator does not purchase an asset but it signs a long-term contract with a private operator for the provision of infrastructure-based service (Grimsey and Lewis, 2002b). The public operator does not have to pay for the initial investment. Hence, partnerships with the private sector ease public sector's financial situation. (Head & Georgiou, 2011) Additionally, the project efficiency and service quality have increased as private sector management, knowledge and innovation abilities are exploited in the public sector activities (Tang et al., 2010). On the other hand, private companies secure stabile cash inflow for a long time period. Private operators may also participate in a partnership because they are interested to expand business opportunities (Rutherford, 2003). Although benefits of the public-private partnerships are clear, it is important to recognize that they are complex schemes and do not offer a miracle cure or a quick fix to public sector problems (European Union, 2003).

Studies show that the investment decisions are not always based on financial aspects, but strategic issues have often a large importance. The emphasis of strategic issues over financial has national differences, but it may also vary within a country. (Carr et al., 2010) studies have shown that public sector decisions in public-private partnerships are mainly based on the financial aspects (Edwards & Shaoul, 2003). Additionally, decisions to partner with the private sector are often ambiguous (Shaoul, 2005). However, majority of the studies concentrate on validity of the justifications of the decision and the reliability of the decision-making tools. Still, it is also interesting to find out how the decision-making is done in practice.

Carr et al. (2010) state that strategic investment decision-making practices cannot be taken out of their context. Public-Private Partnership has a very unique context for decision-making as it compares aspects from public and private sector. The purpose of public investments is to make sure that municipalities are able to provide residents the services that they are entitled to. Additionally, Brunsson (1990) argues that the public sector practices may include a lot of talk and the decisions might be even more important than the actions they engage in. On the other hand, companies always act upon the interests of the shareholders, even though they are providing public services. Public-private partnership projects offer an interesting opportunity to study how the financial and strategic aspects are balanced not only within a specific sector, but in a combination of public and private sector. Hence, Public-Private Partnerships present a very interesting research area.

As already stated, fiscal problems have been one of the essential reasons for the increased popularity of these partnerships, although there have been county-specific variances (Bovaird, 2004; Love et al., 2015). As the economy in Finland does not show any signs of recovery, it can be assumed that in the future we are going to see an increase in the amount of the partnership arrangements between the public and private sector. Thus, it is important to study how they work in practice.

1.2 Objectives and scope

The purpose of this study is to identify characteristics of the public sector's decision-making practices in Finnish Public-Private-Partnerships (PPP) context. Through a case study this study aims to examine the key issues of PPP decision-making and to present guidance on how to improve municipal investment decisions. It also attempts to specify how qualitative and quantitative issues are balanced in the decision-making.

Laws and regulations dictate municipalities to offer certain services to the public. Hence, public sector decision-making often focuses on the selection of the right alternative. For example, public operators do not have to decide if they should provide healthcare or waste collection, but how these services are arranged. This study concentrates on selection process between the different investment opportunities. Furthermore, This study does not consider the interface between the public and private sector from the perspective of political liabilities, i.e. what are the responsibilities of the municipal government, but the study emphasizes purely on how municipalities handle their obligations.

1.3 Structure

The rest of this paper is structured into seven chapters. In the chapters 2–5 a review of relevant literature is presented to lay down the foundation for the empirical part of the study. First, chapter 2 presents a more detailed definition of public-private partnerships and its benefits. Chapter 3 focuses on the value for money analysis. The fourth chapter introduces the most relevant critique on the partnership arrangements and on the related decision-making. Conclusions of the literature findings are drawn in chapter 5. The relevant methodology in this research is discussed in chapter 6. The seventh chapter presents the empirical findings of this study. In the final chapter, the results of the research are discussed with respect to the literature findings, the research findings are summarised and the conclusions of this study are presented.

2. Public-Private Partnership

This chapter presents a definition of Public-Private Partnership and other key concepts on the general level. Afterwards, it continues with a discussion of the most common benefits of the partnership arrangements, which are divided into micro- and macro level. Ultimately the public-private partnership is, like all the other partnerships in business, a contractual agreement. The contractual aspect is discussed in the end of this chapter.

2.1 Definition

European Union (2003) defines Public-Private Partnerships (PPP) as “a partnership between the public sector and the private sector for the purpose of delivering a project or a service traditionally provided by the public sector”. PPPs are used around the world (Iossa & Martimort, 2015; Tang et al., 2010; Khadaroo, 2014; Love et al., 2015) and they have found to be a worthy alternative to the traditional infrastructure procurement methods (Love et al., 2015). PPPs can be applied practically to any large infrastructure project and have already been used, for example, in construction of schools, hospitals, roads, power distribution, IT services and waste management (Zimmerman & Eber, 2014; Iossa & Martimort, 2015).

The exact definition of PPP varies, depending on the situation or the country where the partnership takes place. Concept of PPP may vary from short-term management contract to joint ventures between public and private sectors (Grimsey & Lewis, 2005). In some occasions, any transaction between public and private sector is understood as PPP, whereas in others a contractual agreement is required. (Tang et al., 2010) Generally a Public-Private Partnership comprehends long-term contract between a public sector and private sector operator for the supply of serviced asset (Engel et al., 2014). The main idea is that the public operator does not purchase an asset but signs a long-term contract with the private company for the provision of needed service. The company then builds and maintains the needed facilities and delivers the acquired services. (Grimsey and Lewis, 2002b) Public sector operator makes a regular payment, which covers the use of the asset and provision of the related services. (Cuthbert & Cuthbert, 2012) In a PPP the private partner is responsible for the needed services and

bears the risks associated with providing them. However, the public sector still maintains the ultimate responsibility. (Grimsey & Lewis, 2005; Shaoul et al., 2012)

A traditional PPP process has three phases: initiation and planning, procurement and contract management/partnership (Li Bing et al., 2005; Love et al., 2015). PPP is normally includes a special purpose vehicle (SPV), a company specifically established for the project (Shaoul et al., 2012). This company is usually a shell company, which is used to operate the assets in question. A crucial aspect of a PPP is a delivery of an overall solution that generates value over the whole lifecycle of the project (Zimmerman & Eber, 2014). Hence, certain flexibilities in the agreements are also needed (Clifton & Duffield, 2006).

The PPP concept includes many kind of partnership arrangements, of which some are purely economical whereas others include also more strategic aspects, for example the sharing of risks and rewards (Hodge and Greve, 2005). The arrangements may differ for example with regard to the ownership of the asset at the end of the contract (Iossa & Martimort, 2015). The private finance initiative dominates the discussion in the United Kingdom (Head & Georgiou, 2011), where PPPs are widely used (Heald, 2003). A lot of studies also concentrate on the PFI arrangements. In this study the term PPP is used as a general term for all kinds of public-private partnerships. A similar approach has been selected also in the earlier studies for example by Head & Georgiou (2011).

PPP is one of the tools used in new public management (Shaoul et al., 2012), which is an ideology that aims to downsize the public sector and introduce private sector practices into the public services (Alonso et al., 2015). New public management is based on a strong believe that market-based transactions deliver the most rational and efficient solutions. (Shaoul et al., 2012). Thus, these believes determine also the usage of PPP.

Public-Private Partnerships can be seen as a way to fill the gap between traditionally procured public sector projects and full privatisation. It is a hybrid, which blurs boundaries and combines resources from public and private sector. (Shaoul et al., 2012) It allows public sector to sift non-core activities to the ownership of private sector

(Rutherford 2003). Additionally, partnerships allow public sector to outsource operations that cannot be traditionally privatised due to political or economical reasons (Edwards & Shaoul, 2003). By using a PPP, public sector can save recourses by focusing only on its core competencies and avoid conducting unfamiliar projects (Cumming, 2007).

Outsourcing public tasks separates the purchaser and provider and breaks the hierarchical chain traditionally found in the public sector operations, which enables occurrence of principal-agent problems (Shaoul et al., 2012). However, in a PPP the public sector operator shares risks and responsibilities for the delivery of a service with one or more private sector companies. The partnership arrangement allows deeper relationship and more direct control between the different parties than would be accomplished by a simple market-based purchase. (Broadbent and Laughlin, 2003) A working relationship between the public and private sector operators is very important to the success of the PPP because it decreases the possibility of misunderstandings and conflicts (Tang et al., 2010). The form of partnership varies in different PPP, although certain common features exist. Usually the public operator operates the core service, provided to the end user, whereas the private operator is responsible for the ancillary services. (Shaoul, 2005) For example, in a school under a PPP contract, the public sector organizes the teaching while the private operator maintains the school facilities.

Some form of partnership may occur also in traditional public procurement, as the private operator's role might go beyond delivery of an asset. This is especially true if the private operator has expertise that is valuable in the operations. The difference between traditional procurement and PPP is in the control of the service provisions. In a PPP the public sector only specifies the required output. It is then up to the private operator to specify how the services are provided and design the needed assets. (Broadbent and Laughlin, 2003) Thus, it is important that the public sector's requirements are clearly specified, whereas the operational specifications are left as open as possible. This increases the private operators possibility to innovate, which leads to better solutions and improved value for money. (Grimsey and Lewis 2002b)

The supply of public services is key aspect that differentiates PPP from making traditional purchases. Hence, it is important to clearly separate public and private services when discussing about PPP. The most simplistic way to distinguish them from traditional services would be to examine whether the services are free of charge for the consumers, as public services are often financed from governmental budgets. However, an increasing amount of public services are becoming subject to charge (Broadbent & Laughlin, 2003). For example in Finland, medical examination is not totally cost free, although it is a public service. Hence, Broadbent & Laughlin (2003) suggest that it would be more appropriate to examine who controls the inputs and outputs of the actions. If the public sector has control over the operations' input provisions or has ownership claims over the outputs, the services are public services. Then, it does not matter who owns the operator or how the operations are funded. (Broadbent & Laughlin, 2003)

A concept that has to be defined is partnership. Basically, any voluntary relationship between different parties can be considered as partnership. However, this definition is too wide and serves no purpose in a case of a PPP. Grimsey and Lewis (2002) present three factors that define partnership in the context of PPP. First, time span of the contract has to be long-term. Partnership cannot be formed with a single purchase. Interaction between the parties has to be constant and parties have to believe that the joint actions continue also in the future. Secondly, partnership should be based on mutual trust between the parties. Partnership is a joint venture where all the parties have to be able to trust that everybody is working towards the same goal. Although terms of the contract dictate many situations, it can never be all-inclusive. Third, both parties should have something to lose if the partnership does not succeed. This is underlined by the fact that "PPP is at base a risk-sharing relationship". (Grimsey and Lewis, 2002)

In a partnership the relationship between the partners can be defined as essentially horizontal (non-hierarchical) or essentially vertical (hierarchical). A true partnership consists of essentially horizontal relationship, where the decision-making is consensual and all the parties are involved in the action, instead of vertical relationships, where one party is superior to others and able to make decisions unilaterally. (Wettenhall, 2003) In a PPP the private operator is responsible for the operations and is able to make a lot of

unilateral decisions, albeit in the limits set by the public operator. Thus, PPPs are not true partnerships.

One of the interesting features of PPP is that it combines interests of public and private sector and emphasizes on creating a partnership that maximizes the value for both, the owners of the private company and the society. Purpose of private companies is to increase the wealth of their owners whereas public sector focuses on the value for the whole society. This difference is especially important in capital investment decisions. (Shaoul, 2005) In order for the partnership to be successful, it is crucial that these different objectives are reconciled (Edwards & Shaoul, 2003). However, there is a concern that the private operator, driven by emphasis on profit generation, might not support the values of the public sector (Broadbent and Laughlin, 2003) and it has often been difficult for the private sector to defend its distinct values in a partnership with the private sector (Wettenhall, 2003). Additionally, nonfinancial expertise may become underrated, as efficiency and monetary issues are placed into the center of the operations (Jupe, 2012). Hence, it is important to ensure that the interests of the private sector do not suppress issues of public policy and public interests (Wettenhall, 2003).

2.2 Benefits

Usage of PPPs can be justified from both micro- and macro-economic perspectives. At micro level, PPP provide better value for money than would be achieved with traditional public procurement. At macro level, PPPs provide funding for needed investment, which could not be founded from public funds alone. (Demirag et al., 2012).

2.2.1 Micro level

There are three factors that make PPP more efficient than traditional public procurement: private ownership, bundling of tasks and allocation of risks between the partners (Blanc-Brude et al., 2006).

PPP increase efficiency by introducing private ownership to the projects. In a complex situation with high uncertainty, the future events are unknown and cannot be agreed in a

contract. This contractual incompleteness increases the possibility of renegotiation, which can lower investors' income. Thus, they keep investments to relation-specific assets as low as possible. If the investor would own the asset it would not face the same problems. Hence, incompleteness of contracts increases the importance of ownership. (Blanc-Brude et al., 2006) For example, if a company were selling paper machines together with maintenance contracts, an installation of a new lubrication system could ease its maintenance and decrease its cost significantly. However, it is likely that the purchaser would want to renegotiate the payment terms of the maintenance contract, which would decrease the profitability of the new investment for the company. Because all investment projects include also risks, the company may pass the investment. However, if the company owns the machine and the purchaser pays only for its availability, the benefits of cost reduction remain within the company. The first situation correspond a case similar to traditional public procurement, whereas the second corresponds to PPP.

The relation between contractual incompleteness and importance of ownership can also be reversed, for example in the context of controlling of activities. The owner of the asset has power over everything that is not included in the contract. Thus, if the contracts are incomplete the ownership matters and it is better for the public sector to own the asset itself. (Hart, 2003)

A crucial aspect of PPP is a bundling of different contracts and activities (Iossa & Martimort, 2015). As already shown, PPPs include synergy gains as the assets are owned and maintained by the same operator. These gains are even more prominent if design, construction and operation phase are done by the same entity, because it increases constructor's motivation to investment in improved operational efficiency already in the construction phase and to deliver an optimal overall solution. (Blanc-Brude et al., 2006; Grimsey and Lewis 2002b). Additionally, including only one private operator in a PPP assures bet possible risk allocation (Grimsey and Lewis 2002b). This does not mean that the private operator has to be a single company, but it can be a consortium of private firms, for example construction company and facility management company (Iossa & Martimort, 2015). In this case, it is important to verify that the members of consortium are jointly responsible for the project. Nevertheless,

The private operator does not have to do everything by itself, but it can also use subcontractors and outsource some activities. (Demirag et al., 2012) The private operator still holds the responsibility of delivering the services. However, subcontracting and changes in the consortium decreases benefits of integration, as they increase the possibility of conflicting interests. Additionally, subcontracting can create a long supply chain, which decreases the efficiency and transparency of the operations. (Shaoul et al., 2012)

Bundling of tasks encourages constructor to do upfront investments that decrease the operational cost of the project. However, builder can do two kinds of investment that both decrease project's operational cost, but differ in respect to delivering benefits for the public sector (Blanc-Brude et al., 2006) Innovative investments increase the assets operational efficiency simultaneously with the overall benefits, whereas the quality-shading investments result with improved operational efficiency but reduced quality (Hart, 2003). For example, constructor of a can decide to invest on lighting that uses low-cost bolts. This reduces the maintenance costs but decreases the quality of the building, as it may be dimmer. On the other hand, constructor can invest on high quality long-lasting strip lights.

Quality requirements in the contract can be used to control the type of investments the constructor is going to do. Thus, the selection between traditional procurement and PPP should be based on which one is easier to specify quality of service or quality asset. If it is easier to define the quality of the service the PPP should be selected. In a PPP the constructor has the freedom to do both type of investments. However, it is not likely to do quality-shading investment, because it has to meet the quality requirements. Thus freedom will only increase the possibility of innovative investment. On the other hand, if it is hard to define the quality of the service traditional procurement offers a better option. In this case the freedom will also increase the possibility of quality-shading investments. (Hart, 2003)

2.2.2 Macro level

Redundancy on public funds is one of the fundamental attractions of the PPP for the public sector (Grimsey & Lewis, 2002a; Rutherford 2003; Liu et al., 2015). In a PPP the private operator is responsible for the overall financing of the project (Broadbent & Laughlin, 2003) and the funds are gathered from the private finances (Zimmerman & Eber, 2014). Thus, the private sector is able to initiate projects that could not be funded from governmental budgets.

Zimmerman and Eber (2014) present two specific modes of financing of PPP project: the project financing and the forfaiting model. The project financing represents a traditional private sector financing, where the bank makes the risk assessment of the project and designates an interest rate for the possible loan. In the forfaiting model public sector guarantees the loan and has the responsibility for the risk analysis. The forfaiting model includes lower financing costs, as the project benefits from the public sector credit rating. (Zimmerman & Eber, 2014). However, for the public sector this means also an additional risk as it guarantees the funds used.

Benefits of private financing do not limit only to the increase in funds available. Introduction of outside financing includes a tradeoff between increased risk sharing i.e. increased costs and improved information. Outside financiers are experts in evaluating risks. Exploitation of this expertise improves the quality of information and benefits all the partners in a PPP. On the other hand, the additional layer of contracting and risk sharing increases the cost of the project. (Iossa & Martimort, 2015) Furthermore, public sector does not necessarily need a partnership arrangement to acquire financial expertise, but it can also by hire outside advisors (Khadaroo, 2014). This can decrease the value added by private financiers in the PPP.

PPPs also allow public sector to spread its expenditures over a longer time frame, which is tempting especially in periods of austerity (Khadaroo, 2014). In a PPP public sector is tied to long-term operational payments, but does not have to do large initial investment. In a traditional procurement the case is usually the opposite. After relatively large initial investment, the operational costs are lower. (Khadaroo, 2014; Grimsey and

Lewis, 2002b) In both cases the services are still funded by public funds so there are no opportunities for the public sector to diminish its expenditures. Still, the opportunity to avoid large investments is tempting for many governmental bodies as it allows them to keep their debt ratios in a low level. (Grimsey and Lewis, 2002b) Possibility to spread costs over time can distort the decision-making in favor of PPP. However, spreading public spending over time can rather be questioned than promoted by economical justifications. First of all, it conceals holes in public finances and makes public sector budgets look healthier than they are. (Cuthbert & Cuthbert, 2012). Additionally, it transfers costs from current to future generations. (Iossa & Martimort, 2015)

2.3 Partnership as a contractual agreement

There are two distinct functions that contracts can have. First, they specify the rights and obligations of different contract parties. Second, contracts delegate management and authority by designating control over future. This discursive level role of contracts is more rhetoric and useful in the context public sector operations. (Froud, 2003)

An appropriate contract, which defines the responsibilities and penalties for both partners, is essential for the PPP. The partnership contract should align the distinct objectives of public and private sector i.e. it should satisfy private sectors need for profit, but at the same time it should allow the project to generate value for money for the public sector. Furthermore, PPP projects last for a very long time so even small details can have a significant effect on the end results. (Froud, 2003) It is crucial to make sure that the initial objectives and quality standards are met over the whole project. Thus, performance regimes and payment mechanism, such as incentives, are key aspect for the PPP to be successful. (Grimsey & Lewis 2005) Additionally, it is important to properly design the contracts already at the start of the project, because later modifications might be very costly. (Froud, 2003)

Payment mechanism has to be designed in a way that it supports public sector objectives. Payments can depend on the availability or performance of the service or they can be linked to the service usage or gained benefits, for example, improvements in the safety. (Grimsey and Lewis 2002b) In some occasions, it may be rational to tie

payments to demand because it decreases the overall risk for the public sector. If government builds a road that no one uses it loses money. Hence, a new road investment includes a demand risk, which can be reduced by sharing it with private sector. On the other hand, fixed payments can be used to transfer operational risk to private sector and bring benefits to the public sector. If the operation costs are higher than the fixed payments the operator will lose money. This incites the operator to be more cost-effective and increases its quality-enhancing efforts in all of the project's phases. (Iossa & Martimort, 2015)

However, PPP contract should not give private operator motivation to increase its revenues if it does not also benefit the public sector (Grimsey and Lewis 2002b). For example, if the payments depend solely on usage of the service, service provider may try to increase the demand at the expense of service quality. However, the quality of services is often defined in the contract, although it's measuring may be ambiguous. (Shaoul, 2005)

All the parties accept the contract as they sign it and in the most preferable situation they remain content for the whole life cycle of the project. However, time frame in a PPP is very long, which increases the possibility that one or more party is not going to remain satisfied with all the terms of the contract. If both, the private operator and the public purchaser, are unhappy with the situation, it might be rather easy to alter the contracts in a way that benefits all the parties. However, problems can arise if only one of the partners is unsatisfied because the partner which is content with the situation may be unwilling to alter the contract. (Heald, 2003).

If the private operator is discontented, it can tolerate the situation for some time. There are contractual penalties as well as reputational aspects that make it uneasy for the private operator to dispute the contract. However, if the situation continues for a long time, the private operator will eventually face difficulties to manage its obligations. In the worst-case scenario, this can mean financial distress or even bankruptcy. If the private operator is not able to manage its obligations responsibilities are transferred back to the public sector. Furthermore, if the private operator would face bankruptcy the public sector had to take control for the whole asset and operations related to the

contract. This makes private operator's discontentment adverse also for the public sector operator and it is likely that the public sector is compliant to renegotiate. However, the situation where only the public sector partner is discontent is more problematic. It is responsible not only to its partner, but has a responsibility to provide services for the citizens. In addition, the public sector does not have the possibility of bankruptcy. Thus, it is much harder for the public sector to neglect its obligations. However, in some cases it might still be reasonable for the private operator to ease the public sector purchaser's position. (Heald, 2003).

3. Value for money

Benefits of a PPP have to be larger than those of the traditional procurement, because private funding is usually more expensive than funding from governmental budgets. However, this does not mean that the project has to be the most cost effective, but that it delivers superior value for money. (Grimsey and Lewis, 2005) Value for money (VFM) is a sum of all the benefits, costs and risks related to a project during its life cycle (Clifton & Duffield, 2006). It can arise from private sector innovations, skills in asset design, operational practises, construction techniques or risk transfer. Furthermore, it is crucial to understand that value for money does not concern only costs, but also the quality of a service. PPP should allow the most cost-effective way to provide high quality services. (Grimsey and Lewis, 2002a)

According to the European Union (2003) superior VFM is a prerequisite for the selection of PPP over the traditional procurement method. It is also widely recognized in the literature as the main reason for public sector to conduct a PPP (Grimsey & Lewis, 2005; Clifton & Duffield, 2006). VFM is important for the rhetorical success of PPP and it is often used to justify public sector's decisions (Froud, 2003; Khadaroo, 2014). These justifications are reinforced even further by utilization of expert financial advisors (Khadaroo, 2014).

This chapter shows how the value for money is taken into account in the decision-making. First, a general overview of the value for money analysis is presented. After that, the two most important parts of the analysis, the public sector comparator and the risk transfer, are discoursed in more detail.

3.1 Value for money analysis

In the value for money analysis private sector bids are compared against a public sector comparator (PSC), which is a benchmark based on cost estimation of the traditional procurement (Liu et al., 2015; Love et al., 2015; Clifton & Duffield, 2006). If PPP bid proves to deliver higher VFM than the PSC, contract is awarded to the private bidder (Li Bing et al., 2005; Khadaroo, 2008) The analysis is a variation of the net present

value (NPV) technique and compares net presents costs (NPC) of the different procurement opportunities. Projects NPC is the sum of its discounted future cost supplemented with costs of project related risks. The project with lowest NPC is regarded to deliver best VFM. (Shaoul, 2005) Thus, in principle the VFM test allocates responsibilities to the sector that can add the greatest value. Illustration of the result of a VMF analysis is shown in the figure 1. And the different components are presented in more detail in the next section.

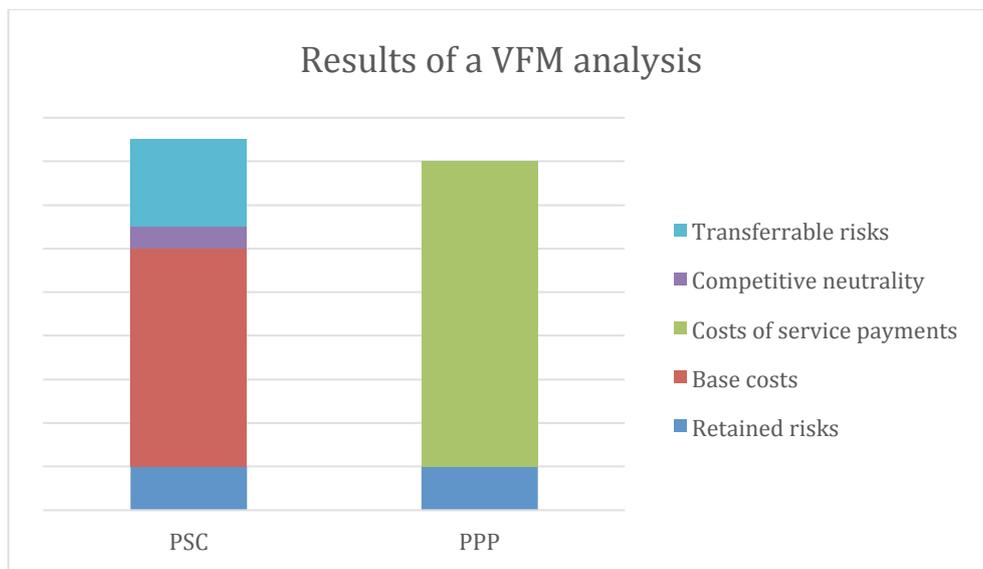


Figure 1. Illustration of the comparison of PSC and PPP

The way of testing the value for money (VFM) differs in different countries, although the process presented above is the most commonly used. According to Grimsey and Lewis (2005) there are four different ways to test value for money. For example in Germany, full costs-benefit analysis of the most likely public and private sector alternatives is conducted. However, this requires a lot of work and results with rather ambiguous answer for which alternative is going to deliver to greatest value for money. More transparent approach is to compare PPP against a hypothetical public sector comparator (PSC), defined more precisely in the next section. Comparison can be done after the private sector's bids are received, like for example is done in U.K. Still, The PSC is usually created before the tenders are released. This ensures that the PSC is purely a public sector opinion. Additionally, preparation of the PSC helps to define the project specifications and indicates what the private sector should offer. The comparison can also be done before bids are invited, like in Japan. Now, the PSC is

compared with a shadow PPP, which is based on estimations of the PPP bids. This gives an early indicator of the possible VFM that the PPP can deliver. However, a second test is still needed, because the estimations might differ a lot from the real bids. Fourth approach, used for example in United States, is based on reliance on a competitive bidding process to determine the VMF. (Grimsey & Lewis, 2005)

Because the VFM analyses are done using the net present values, the discount rate has huge effect on its results (Grimsey & Lewis, 2005). However, selection of a discount rate is ambiguous, as there are several techniques to set it. In its purest form discounting is used only to take time value of money into account. It is also quite usual to adjust the discount rate to take also risks into account. However, this approach has a few problems. Firstly, the risk-adjusted discount rate assumes that the risks are the same from year to year, which in reality is not likely. Secondly, increase in the discount rate has higher effect on the later cash flows than to those closer to the calculation point. The time frame in PPP calculations is considerable long, so this effect is even more notable. Another way of taking the risks into account would be the use of the certainty equivalents. However, Grimsey and Lewis (2005) point out that adjusting the individual cash flows may be overly difficult. Furthermore, economic literature suggests that public sector should use lower discount rates in the investment appraisals than the private sector and that sensitivity analysis should be conducted on the results by using a series of discount rates (Shaoul, 2005).

VFM analysis cannot take into account all the factors concerning the managerial aspects of a project. Thus, in some occasions the partnership can be the most preferable option even if the VFM test would show PSC to be superior and there would be funding available. For example, public sector may lack managerial expertise or political motivation, which can lead to situation where the realized costs of the PSC can be assumed to be higher than the PPP. (Heald, 2003)

3.2 Public sector comparator

As stated earlier public sector comparator is a crucial part of VFM analysis. It represents a reference project, which is used to quantify the financial benefits of the PPP

(Clifton & Duffield, 2006). PSC includes all the discounted costs and risks of appraisal of the traditional public procurement, which the partnership arrangement is supposed to replace. It has to be based on the most preferred option of the traditional procurement, which should be selected with a proper cost-benefit analysis of available alternatives. All the numbers have to be explicit enough for the PSC to provide useful benchmark against the PPP bids. Furthermore, PSC has to include all elements that are needed for the public procurement to deliver the same quality that is required from the private sector operator. (Grimsey & Lewis, 2005)

In addition to its use in the VFM analyses, the PSC has other beneficial roles. It focuses attention to the output specifications, risk allocation and comprehensive costing already in the procurement process. It also provides consisted benchmark for the project and advocates full costing at an early stage in the project development. In addition, PSC enhances confidence for financial precision and transparency in the market. (Grimsey & Lewis, 2005) Actually, the fact that public sector is forced to review and specify its needs is one of the benefits of PPP. This is because one of the main reasons for cost overruns in construction projects are the changes in client requirements. (Blanc-Brude et al., 2006)

Grimsey and Lewis (2005) define four parts of PSC: base costs, competitive neutrality, transferable risk and retained risk. The base costs represent a full and fair estimate of raw costs of delivering the services publicly, from preliminary set-up and planning to the decommission costs at the end of the project. (Grimsey & Lewis, 2005) They can be further divided to investment cost, financing costs, operating costs and transaction costs (Zimmerman & Eber, 2014). In a PPP construction costs (i.e. investment costs) are usually higher than in a traditional procured project, due to the risk transfer and bundling of tasks (Blanc-Brude et al., 2006). However, the benefits of these activities outweigh the costs. Operating costs are related to the quality of the infrastructure, which can affect them in two ways. In some cases quality reduces the cost whereas in others it increases them. (Iossa & Martimort, 2015). For example, better insulation lowers the heating costs of a building at winter. On the other hand, a state of the art cooling system improves the usability of a building, but at the same time it may increase the operating cost.

Competitive advantages that are caused by the governmental ownership have to be eliminated from the comparison. These advantages include for example taxes that private sector has to pay because of the PPP structure, for example land and payroll taxes. Cash flows from these payments have to be included as costs in the PSC. However, there are also competitive disadvantages, like increased reporting requirements, which have to be taken into account. (Grimsey & Lewis, 2005).

Evaluation of transferable risk is very critical, because optimal risk allocation is one of the main benefits of PPP (Grimsey & Lewis, 2005). All the risks have to be identified and priced in order to measure the total amount of risks in the project (Demirag et al., 2012). It also needs to be defined how these risks can be allocated and how much it would cost to transfer risks from the public sector to the private sector. However, all of the risks should not be transferred to the private company, but the risk allocation between the partners should be optimized. (Grimsey and Lewis, 2002b) The optimal risk allocation and its benefits are further discussed in the next section.

In the comparison of the PPP bids and PSC it needs to be recognized that the PSC is essentially a theoretical estimate, with attached unknowns and evaluation of the future, whereas the PPP bids are actual binding offers, which represent how the private companies are going to execute the project. In addition, it is usually not cost effective or even possible to get real values for all the calculations and thus there has to be some assumptions used. It is very important that all the calculations are based on same assumptions or the comparison is going to be inadequate. For example, timing has to be same for all the projects i.e. all the alternatives should be assumed to start at the same time point. Additionally, it has to be assumed that there is funding is available for all the alternatives, although in real life there may not be public capital available. Still, this cannot affect the analysis of which alternative is able to deliver best possible value for money. It is also crucial that only the costs related to the project at hand are included in the calculations, for example procurement costs has to be considered as sunk costs. Lastly, outputs specifications and performance standards have to be same for both the PSC and the PPP. (Grimsey & Lewis, 2005)

The comparison of the PSC and the PPP bids do not take place only at once, but at several stages during the procurement process. Thus, the PSC should be kept up to date, so that it provides a valid comparison. Although risk assessment is initially done at the beginning of the project, when the PSC is created, transferrable risk may be updated later. For example, as the optimal risk allocation becomes clearer during the negotiations with private sector provider. (Grimsey & Lewis, 2005) In addition, innovations during the tendering process can change the project descriptions and final solution may differ from the initial idea (Heald, 2003). If the VFM test is done already before the tendering process, its results may not be valid in the new situation, because both the PPP and PSC may differ substantially from the initial proposals (Shaoul, 2005).

3.3 Risk transfer

Risk transfer is an essential part of PPP's value delivery (Shaoul, 2005). In a PPP the public sector operator can transfer some of the risks of the project to a private company. If it would purchase and operate the asset by itself, it would have to bear all the risks associated with the project. It is important to acknowledge that transferring risk to the private sector costs money and should be done only if its benefits outweigh these costs (Blanc-Brude et al., 2006). Public sector may be able to carry some risk better than private companies. In addition, private operators may charge high payments for risks that they feel unconfident with and thus it can be reasonable for the public sector to retain them. For example, political risks should be retained by the public sector, where as other, e.g. relationship risks, can be jointly shared by the both parties (Li Bing et al., 2005). The optimal risk allocation depends on the situation and the public sector operator may retain some of the risk in order to reduce the contract price (Demirag et al., 2012).

In a PPP risks are allocated according to the terms of the partnership contract. Fixed payments can be used alongside with variable charges, related to for example the demand of the services. Additionally, there can be covenants that set the minimum amount of the service that public sector is going to purchase. This decreases the risk of changes in demand for the private operator, which should also lead to a decrease in the

contract price. The jointly shared risks fit also to the definition of partnership, as all the parties should suffer if the partnership defaults. However, covenants create new risks for the public sector, which increase the project's overall costs. If it would produce the services itself, it would pay only for the services needed. On the other hand, it should also pay for the whole construction of the asset.

3.3.1 Risk and uncertainty

Concept of risk is ambiguous. In some cases it can be used to denote danger and it should be avoided, whereas in others it can be seen as a characteristic of an entrepreneurial society, where the seeds to success lie in risk taking. In addition, it can be very difficult to separate the concept of risk from the concept of uncertainty. At its simplest, division of risk and uncertainty can be done by assuming risk to be something that can be estimated with probabilities and uncertainty to be something that cannot be estimated. Another way would be to perceive risk as a probability that things go wrong whereas uncertainty would refer to situation where the outcomes are just not known. (Froud, 2003).

According to Khadaroo (2014) "in modern society risk is often defined and quantified in terms of financial consequences of an adverse event occurring." Traditionally risks are quantified by combining probability of occurrence with the estimation of possible losses it causes (Zimmerman & Eber, 2014). However, accounting numbers are not necessarily objective, since they are creations of a social process and thus based on subjective assumptions (Khadaroo, 2014). In the risk quantification the objective probabilities adjusted by using subjective estimations i.e experts' opinions. These estimations may distort the quantification of risks, which can lead to highly unrealistic results. (Zimmerman & Eber, 2014)

Froud (2003) presents three different concepts of risks and uncertainty: technicist, post-modernist and radical. According to the technicist concept, risk is calculable and it is possible to achieve optimal risk allocation. Understanding and managing risks is seen as the key factor to successful actions and decision-making. The second approach, post-modernist concepts display risks as manufactured and incalculable, and considers new

democratic policies to be the right way to deal with them. In the heart of the post-modernist conceptualization is a concept of risk society: a society full of opportunities that no one can fully understand. Risks are not a causal result of earlier decisions, but they are unlimited in time and space. Thus, probabilistic models cannot be used to model them and it is not possible to manage risks by accounting and compensations. As opposed to the role of experts in the technicist approach, post-modern concepts advocate the voice of citizens. Lastly Froud presents radical concepts, which clearly distinct what is calculable and what is unknowable, in other words risk and uncertainty. Additionally, it acknowledges that uncertainty does not apply only in the long-term, but has also an effect on the middle range decisions. The radical approach suggests that it is important to not only recognize uncertainty as a notable factor but also act upon it. For decision-making and analysis purposes it is important to identify situations, when risk calculations can be used. Then it becomes clear where uncertainty prevails and has to be taken into account. (Froud, 2003)

The technicist approach is very simple and it gives a good rhetorical support for decision-making. Quantified decision making techniques, such as probabilistic models, are used to include risks in the profitability calculations. However, these techniques fail to capture the outcomes that cannot be included in probability calculations. While risks are considered to be manageable, the concept of uncertainty, meaning something that cannot be predicted, is completely ignored. At the same time, the fact that previous actions shape the future is ignored. (Froud, 2003)

The post-modern approach gives valid solutions to some problems of the technicist approach, but still cannot replace it entirely. First of all, current risk analysis techniques are largely based on technicist way of assessing risks. Thus, decision-making cannot be explained without taking these views into account. Secondly, concepts of risk and uncertainty are not separated. Prevalence of uncertainty faced for example during a financial crisis, should not be mixed with largely calculable risks in post-industrial societies. Lastly, post-modernist views tend to see risks only as threats and overlook the opportunities. However, decision makers should account both for the potential gains and losses. Thus, the post-modernist approach is too narrow and a broader approach is needed. This is especially true as government is making medium- or long-term

decisions about provision of public services or infrastructure projects. (Froud, 2003)

In the context of PPP the interphase between risk and uncertainty is obscure. The long time frame makes it impossible to make forecast concerning the end of the contract period. Furthermore, decisions with large-scale effects, such as decision to execute a PPP project, shape the future. Thus, it can be questioned if there are calculable risks or just unknown uncertainties. Actually, it can even be questioned if it is possible to make a forecast of the beginning of a project's operational phase after the construction is finished. (Froud, 2003) Uncertainty can also arise from lack of appropriate investigation and increasing the knowledge about the situation can reduce it. However, a proper analysis is not always possible or economically rational. Because the time frame of a PPP project is very long and there are multiple factors that can change the situation, making a thorough analysis of all the factors would not be rational. The costs of this analysis would be astronomical and still the results would not be reliable. Thus, in the context of PPP estimations are used to cope with uncertainties. (Zimmerman & Eber, 2014)

3.3.2 Quantification of risks

In a VFM analysis the assessment and allocation of risks follow usually the technicist approach. Risk denotes the chance of things not working out as planned and it should be quantified and allocated between the parties. However, this kind of approach includes several weaknesses. First of all, including risks only in the financial comparison means that only risks that are quantifiable are taken into account. In addition, technicist approach's lack of ability to notice uncertainty can lead to several problems. Lastly, using purely mechanical models to determinate a policy can be criticized, because more subjective factors are usually used to steer public decision-making. (Froud, 2003)

Risk assessment is often quantitative and thus focuses on the risks that can be measured by numbers. This overemphasizes the importance of quantifiable risks over the more qualitative risks. (Demirag et al., 2012). In addition, many of the risks assessed during the decision-making process are related to the assets, although the main focus in PPP is in the delivery of services. Furthermore, the focus is usually on the early stages of the project, for example in the construction phase. (Froud, 2003). This is quite

understandable, because these risks are a lot easier to determine than possible changes that take place 20 years after the decision point. In addition, many of the risks assessed are those primarily faced by the private sector, for example risks related to taxation or project financing (Froud, 2003).

Lastly, all the risks cannot be captured in the decision-making process. (Demirag et al., 2012). This is quite obvious, as nobody can really forecast the future. In addition, creating a comprehensive list of all the risks would most likely be extremely costly. However, it is also possible that only those risks that can be managed are identified, which makes the project look less risky. Furthermore, quantification of different risks can be used to manipulate the value-for-money test to favor the option more preferred by the decision-maker.

There are several ways to classify risks in the context of PPP. For example, Grimsey and Lewis (2002a) define nine risks that infrastructure projects face: Technical risks (engineering and design failures), construction risks (faulty construction techniques, cost escalation and delays in construction), operating risks, (higher operating and maintenance costs), revenue risks (volatility of prices and demand of products), financial risks (inadequate hedging), force majeure risks (war etc), regulatory/political risks (legal changes and unsupportive policies), environmental risks (adverse environmental impacts and hazard), project default (failure of the project from a combination of risks). On the other hand, Medda (2007) defines four risk domains in PPP transport investments: technical risks (construction overruns/delays, design of the tender specification or contractor design fault), commercial risks (uncertainty in the marketplace, changes in demand forecasts), political and regulatory risks (governmental actions) and economic and financial risks (economic growth, inflation, currencies and exchange risks).

With a PPP, public sector can transfer construction risks to the private partner. Construction risks consist of risk of the project being delayed or over budget. These are historically quite typical in public sector projects. However, there are also other risks to be considered, when it is assessed whether PPP delivers value for money. (Grimsey & Lewis, 2005). For example, governmental actions can cause political and regulatory

risks, which could be mostly retained by the public sector (Li Bing et al., 2005). Changes in taxation or restrictions on the ability to raise tariffs may decrease the private sector's possibilities to generate profits. Additionally, the absence of a stable government increases the regulatory risk. Political and regulatory risks increase the cost of a PPP and discourage private sector participation. Thus, functional public governance is necessary for a working PPP. (Iossa & Martimort, 2015) In addition, changes in government can reduce the consistency of decision making, which makes it harder for private sector to conduct its business. (Medda, 2007).

An interesting aspect in PPP is the risk of changes in the demand of services i.e. demand risk. This can have huge effect on both the private and the public sector, depending on the terms of the contract. For the private sector operator demand fluctuation might be crucial. (Froud, 2003). If the demand rises significantly, it might be difficult for the service provider to satisfy all the need. On the other hand, if the demand decreases significantly, there will be a huge overcapacity, because of the oversized assets. However, Froud (2003) points out that, traditionally in a PPP public sector can control the demand and prices of the services, whereas private operators have only limited control over them. For example, in a case of a hospital, public sector decision makers have a huge effect on its demand. Public sector decision makers can decide what kind of treatments are offered in the hospital or how close is the nearest competing hospital. Public sector will aim towards the total optimum for its whole hospital network, but for a single hospital the situation might be dissatisfactory.

Because the quantification of risk is crucial in order to show VFM it can be argued that PPP projects make risks more transparent and improve the decision-making as it forces decision-makers to consider how to deal with risks. However, the identification of risks is always a subjective process and can be quite opportunistic. As already stated the risk assessment in PPP projects follow the technisist approach, meaning that the selection of risks is a mechanical process. However, this does not mean that it would be neutral, as it includes subjective judgments of what is important and how different aspects should be prioritized. For example, policy makers can show that risks previously ignored are now being taken care of. (Froud, 2003) In addition experts' judgments include a lot of uncertainties, which decreases their reliability. In order to decrease the possibility that

an individual expert's opinion misleads the process, risk valuation can be done in workshops (Khadaroo, 2014). However, this does not mean that risk quantification is necessarily less subjective. On the contrary, experts can reinforce each others miss believes and thus the process becomes even more distorted.

3.3.3 Optimal allocation of risks

One of the main benefits and the most critical parts of a PPP is risk allocation between the partners (Demirag et al., 2012; Grimsey and Lewis, 2002; Edwards & Shaoul, 2003; Khadaroo, 2008). For the public sector it is also often essential in order to justify PPP projects (Jupe, 2012). However, risk transfer itself does not increase project efficiency, but transferring risk to the party that can have an effect on it improves the risk management, which in turn makes the whole project more efficient (Blanc-Brude et al., 2006). The risks should be allocated to the party, which can affect on the probability of them to realize (Zimmerman & Eber, 2014; Iossa & Martimort, 2015; European Union, 2003). This creates incentives to minimize the risk and thus decrease the total risks of the project. (Medda 2007). For example, construction risk should be allocated to the private sector, because it can control its causes. On the other hand, there is no point to transfer risk to the party that has no affect on it (Iossa & Martimort, 2015). However, some of the risks cannot be controlled by either parts of the contract, but they should still be allocated. In order to do it, private sector's pricing has to be transparent. Then, the public sector entity can decide if it should pay the price of risk transfer or retain the risk. (Grimsey and Lewis, 2002b)

There can also be differences in the risk-aversion of the partners. In these cases the less risk-averse can offer guarantees to the more risk-averse partner, in order for it accept more risks. These guarantees can include for example commitments to meet the obligations in case of default. In the case of PPP the public sector is the less risk-averse agent and has to indemnify the private operator against some risks. Actually, the private operator is most likely trying to decrease the uncertainties of its future cash flows by maximizing the amount of guarantees. However, it is in the interest of the public sector operator to keep the amount of guarantees limited, because it does not want inflict additional cost to taxpayers. (Medda, 2007)

According to Medda (2007) the risk allocation in PPP can be considered as a bargaining process, which can be modeled with arbitration game framework. As a result of this game, the fairest offer is created as a combination of players' opposing objectives. Thus, optimal risk allocation is equilibrium between the partners and changes from this equilibrium result in increased project costs for both of the parties. (Medda, 2007) Khadaroo (2014) presents a figure (figure 2) to illustrate the relationship between the risk transfer and VFM. In the figure the x-axis denotes the amount of risk transferred to the private sector and the y-axis denotes the VFM. If no risk at all is transferred, the value-for-money remains at point A. The VFM increases as more risk is transferred to the private sector up to the point where the risk allocation is optimum. After this point the VFM starts to decrease, because the private operator is going to charge more than it would cost for the public operator to retain the risks. As shown in the picture, excessive risk transfer can deliver less VFM than would be created with no risk transfer at all. (Khadaroo, 2014)

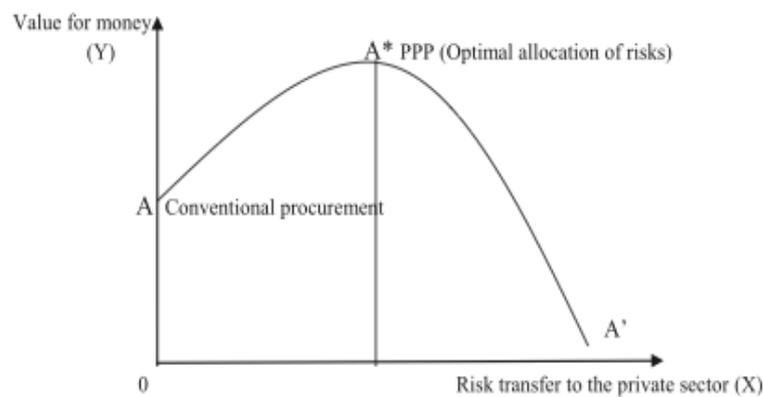


Figure 2. Optimal allocation of risks (Khadaroo, 2014)

Benefits of risk transfer are not limited to the optimal allocation of risk, but it also decreases the total costs of the project. Optimal risk allocation gives private sector incentives to diminish the possibility of undesired outcomes and thus improves the delivery of projects and enhances the maintenance of the assets. (Demirag et al) Furthermore, PPPs do not only allocate risks, but also affect their total amount. For example, the construction risk decreases as they are allocated to the constructor. On the other hand, the demand risk increases as the public operator signs a long service

contract with the private operator. (Heald, 2003) Thus, a PPP contract can evaporate some risks at the same time as it diminishes others. The increase in the amount of risk might outweigh the benefits of risk transfer, even in the level of an individual risk. However, it is not the individual risks that are important, but their total amount. Thus, it is very important that the VFM analysis considers the all risks of the project.

It needs to be acknowledged that PPPs are complex arrangements, which make their evaluation and risk management a difficult task. In order to verify transparency in the procurement process, risk allocation has to be based on mutual understanding and clear communication. (Li Bing et al., 2005) There are many technical, political and economical aspects that have to be taken into account. In addition, there are many stakeholders involved, which all have their own preferences in the project. (Demirag et al., 2012) In order for a PPP project to be successful these needs have to be satisfied in the risk allocation process. However, these needs might be conflicting, which complicates the process. In addition, the complexity of PPP contracts creates new risks that do not exist in the traditional procurement process. (Grimsey & Lewis, 2002a) For example, a situation where the private operator is going to get some of its revenues in relation to the demand of the services creates a risk of demand fluctuation, which would not exist in a traditional procurement. For example, in case of a road investment the private company might get payments related to road's usage to cover for the maintenance costs. Hence, the cash flows fluctuate depending on the amount of people driving on the road. If the road would be owned by the state there would be no fluctuation in the payments, because a fixed payment could be set from the governmental budget. (Froud, 2003).

4. Criticism

The feasibility of public-private partnerships can be sometimes questioned. For example, they reduce the public sector's ability to plan and modify its actions (Froud, 2003) and decrease competition in the market (Cuthbert & Cuthbert, 2012). In addition, the results of the VFM analysis are not unambiguous, for example they can be politically controlled. Furthermore, the public sector's decision-making in the context of PPP can be problematic. This chapter addresses these critique and the consequences of these problems.

4.1 Feasibility of Public-Private Partnerships

PPP contracts decrease public sector opportunities to adapt future uncertainty, as PPP contracts bind public sector to a private service provider, who gets a monopoly in the provision of services under the PPP (Shaoul, 2005). Additionally, the public sector operator is tied up on a certain type of service for a long period of time. If there is a need to make alterations, changes have to be negotiated with the private sector provider. Hence, changes in activities are constrained by the cost of changes in the contract. (Froud, 2003) For example, in a PPP public sector might be locked with a contract of purchasing unneeded services for a long period of time, instead of owning for example an empty building. (Heald, 2003; Shaoul, 2005). There is more flexibility in a situation where the public sector provides the service itself, although changes are not cost free even in this case. Furthermore, Froud (2003) argues that because the services are specified at the time of signing the contract, it is unlikely that they are sufficient to meet public sector requirements at the end of the contract period. (Froud, 2003) Even the most reliable forecasts can fail due to changes in user needs or macroeconomic conditions. Additionally, quality of assets can decline significantly over time (Iossa & Martimort, 2015) and thus even their validity at the end of the contract period is not certain.

In principle this is true, PPP contracts are really long and the world is inevitably going to change in 20 years. However, for large infrastructure projects, such as building a hospital or a new road, the fundamental demand of services is likely to remain relatively

the same, although some minor modification may occur. In addition, an alternative way of doing the investment is unlikely going to be more flexible. Froud (2003) gives an example of rigidity of a PPP contract, when the demand of services does not meet the expected level. In the example a hospital trust that signs a PPP contract for a new hospital. The trust is obligated to pay annual payments to its partner for a long time. However, healthcare services are tendered regularly, so the demand of services is not constant for the trust. If the trust does not win contracts from healthcare purchases it cannot meet its obligations. (Froud, 2003). In my opinion, this is not a question of failing of the PPP contract, although the contract offers a little flexibility in a situation like this. If the trust would build the hospital on its own, it would still have problems if there would not have been demand for its services. Of course the hospital could be shut down and the facilities left empty, but the trust would most likely still have financial obligations due to the initial investment phase of the project. Thus, realized demand risk should not be surmised to concern only PPP. Instead, partnership with the private sector company can even reduce the demand risk for the public sector, as it becomes shared with the private sector partners.

PPP contracts include penalties for the private operator if the service quality does not meet the agreed limits (Blanc-Brude et al., 2006). However, it might be hard to enforce link between performance and payments, due to the difficulties of identifying and monitoring the performance measurements (Edwards & Shaoul, 2003). Thus, it may also be hard to prove that the private operator is indisputably responsible for the poor performance. (Khadaroo, 2014). In addition, penalties are usually quite low and cannot compensate the losses if the quality is far off from what is needed. (Froud, 2003). The public sector may also be unwilling to endanger the relationship with the private operator, because of minor deductions to the payments. However, PPPs tendency to bind public sector decision-making has also another aspect. PPP projects enjoy contractual protection over non-PPP projects, for example in situation where services are cut down. The payments to the private operators fixed in the contracts and cannot be altered without renegotiations. Thus, public sector may be forced to target budget cuts to non-PPP projects even though they would be more beneficial. (Khadaroo, 2014)

The feasibility of the risk transfer can also be questioned. Firstly, a PPP is not needed in order to allocate risks, but it can be done by contractual agreements and fixed pricing. (Blanc-Brude et al., 2006). Additionally, in real life risks are not allocated only to the two contracting parties, but there is also a third party: end-users (Li Bing et al., 2005). However, risk transfer and associated penalties fails to take them into account. When problems in the delivery of the services occur, public sector operator's payments are usually reduced. However, the end-users are do not get compensated for the unavailability of the service, although they are the ones really need it. (Shaoul, 2005) In addition, the service may be essential for the end-users and there has to be compensatory service or they will suffer. Thus, the penalties may not be sufficient to cover for loss of whole society.

Transferring the provision of public services may also increase the anxiety within the society. Public sector employees might have fear deterioration of conditions of employment or even losing their jobs as the operation efficiency is increased. Citizen might fear increases in service fees as the profit oriented private company takes over the operations. Additionally, private operators may worry about lose of their independency as they enter to the public sector's territory, normally governed by politicians. (Bovaird, 2004). In the case of a PPP many of these fears are irrelevant. The project comprises new infrastructure although it is offered in form of a service. In the case of replacement investment it is the assets that are replaced, not the people. This does not remove the possibility of cutbacks in the workforce as the maintenance operations increases. PPP improves the situation for the citizens, as it delivers best possible VFM. The private operator is protected by the terms of the PPP contract.

Complexity of PPP projects makes them infeasible for many companies and thus decreases competition in the markets. Large firms have a clear advantage in managing this kind of project, which diminish the possibilities for the smaller local companies. (Cuthbert & Cuthbert, 2012). In many cases an individual company cannot do the project, but a consortium is needed. It may be rather hard to form a consortium, which inevitably decreases their number. In addition, PPP contracts bolt the situation for a long time. Thus, PPP projects can have a real impact on economy.

On the other hand, PPP arrangements provoke innovation because public sector specifies only the services and leaves it up to the private operator to decide how to produce them. This allows the private operator to innovate new more efficient ways to deliver the services and the solution that private operator offers or what is eventually selected in the tendering process may differ a lot from the public operators initial idea. (Heald, 2003) Additionally, the contract can be designed in a way that allows constant improvements and innovation. This is actually very important in order to make sure that the innovation does not cease after the signing of the contract.

An interesting question concerning the adaption to new possibilities is that who is best able to do it. Opening public services into private competition increases their operational efficiency. As stated earlier, one of the main goals of PPP contracts is to bring private sector capabilities into public sector actions. Private sector is normally considered to be more flexible and innovative than the bureaucratic public sector. Competition forces private companies to continuously improve their processes and create new solutions. However, PPP offer stabile and secure cash flow for the private operator, which can make it more passive. Additionally, the contract gets tendered only at the beginning of the project, which sets the private operator free from competition for the rest of the partnership. Hence, PPP can decrease motivation to make new innovations, especially those that would decrease private operator's revenues. Shorter contracts would allow more flexibility for the public sector and more competition in the markets. However, the private operator would have less time to get back the initial investment, such as the construction costs. This would increase the contract price dramatically and encourage private operator to offer short-term solutions. Thus, the contracts should be build in a way that allows and encourage the private operators to innovate and seek new opportunities.

4.2 Reliability of value for money analysis

Results of a VFM test are not unambiguous. Usually the NPCs of the PSC and the PPP bids are really large, but the differences between the alternatives remain relatively small. Thus, changes in the underlying assumptions may have significant effects on the result of the VFM test. According to Shaoul (2005) the small differences in the results

of the VFM analysis, which are highly sensitive to the changes in the discount rates or risk transfer, question its feasibility as a tool for the decision-making.

4.2.1 Calculations of the value for money

Shaoul (2005) states, “In the context of public finance, VFM is associated with the three Es, economy, efficiency and effectiveness”. However, in practice focus is only on the economical aspects (Shaoul, 2005; Edwards & Shaoul, 2003). Furthermore, PPP decision-making is dominated by quantitative appraisals, while many qualitative factors are disregarded (Khadaroo, 2014; Shaoul, 2005). This is apparent in the VFM analyses, as they do not take unquantifiable elements into account (Grimsey & Lewis, 2005). This means that qualitative benefits, for example social benefits, are omitted. However, these benefits or costs may have significant impact on total value of public projects and there can be a lot of variation between different alternatives. Shaoul (2005) presents a real example of Victoria Line in the UK: without the social effects the project’s NPV was -£2m, but if these effects were included the project was highly profitable with NPV of £65m. (Shaoul, 2005) Thus, it is important to expand the scope of the analysis in order to take also into account the nonfinancial aspects. However, it still needs to be acknowledged that, as Grimsey & Lewis (2005) point out, comparison of quantitative factors is the most significant element in governmental decision-making, although there is a lot of talk about the qualitative factors.

Construction of PSC and PPP include several elements that make VFM test’s feasibility in decision-making debatable. First of all, all of the numbers used are not objective, but they are subject to professional judgments (Heald, 2003). In their study Zimmerman and Eber (2014) show that estimations of PSC have been either overly optimistic or imprecise. These faults result from the fact that many of the inputs needed are not available or have to be adjusted. These data modifications are done by introduction of experts’ judgments, which are often more of an enlightened guesses than objective and accurate predictions of the future. Thus, the input data includes a lot of subjective estimations. (Zimmerman & Eber, 2014) Additionally, the PSC is often only hypothetical illustration, so its value can be easily manipulated to show whatever is needed (Heald, 2003; Grimsey and Lewis, 2005) Furthermore, VFM analysis was initially designed to compare projects that differ only in terms of their financing, but in

practice the PSC and PPP may be different. Lastly, VFM analysis ignores the public sector's possibility to spread its expenditures over time. (Shaoul, 2005)

The calculations of the NPC are based on the NPV technique, which has been developed for private sector purposes. As a consequence, its usage as a public sector decision-making tool has limitations. First of all, NPV method aims to maximize shareholder wealth. However, public sector organizations focus on societal benefits, which does not necessarily mean maximized financial benefits. Additionally, NPV method is supposed to be used in a situation where capital rationing excludes alternatives, which cannot be funded. It also assumes that the investment opportunity is engaged immediately after the decision-making. However, in real life there may be long period before the decision is executed. The overall feasibility of the NPV method can also be questioned. It is practically impossible to forecast future cash flows, because of the prevailing uncertainties. Additionally, management decisions mold the cash flows during the project. However, PPP contracts lock in many future variables, as fees and service specifications are usually fixed beforehand for the whole contract period. Thus, PPP increase the reliability of NPV method based analysis. (Shaoul, 2005)

The time frame in VFM analysis is very long and thus there are a lot of outcomes that remain uncertain. The PPP contracts may last up to 60 years, so forecasting the whole contract period is practically impossible. Additionally, long-term focus decreases the reliability of conclusions that are based on financial evaluations and thus it reduces the reliability of cost estimates and risk allocation. (Grimsey & Lewis, 2005) Love et al. (2015) point out that many of the measurements used to ensure the VFM are focused on the early phase of the project. However, PPP includes a dynamic process and should be evaluated from a life-cycle perspective. Long-term nature of PPPs brings forth the importance of the operational stage, as efficiency issues and cost reductions at this stage have a huge effect on the projects end results. (Love et al., 2015)

Grimsey and Lewis (2005) suggest that instead of using point estimates, the VFM analysis should be conducted by using ranges of outcomes, which are based on sensitivity analyses for the most critical assumptions. They also suggest Monte Carlo simulations as a way to make the most detailed comparisons. (Grimsey and Lewis,

2005) However, making the VFM test more complex increases its costs. Hence, it is important to consider the cost-benefit relationship of these analyses. If the more complex analysis does not affect the decision, it is only a cost increase and a simpler analysis would be sufficient.

The need for the VFM analysis can be sometimes questioned. As already stated information to construct a PSC has to be detailed and realistic. Gathering of such information may be rather costly and benefits of the analysis may not exceed the cost of making the comparison. (Grimsey & Lewis, 2005) In addition, the use of PSC may decrease the flexibility in the tendering process and thus make it harder to achieve optimal long-term outcomes (Clifton & Duffield, 2006). If the PPP is already used in similar projects and it has proven to deliver value for money, there might not be a need to conduct a new VFM analysis. Competition among the private sector bidders ensures that the project will eventually deliver value for the money. However, the PSC might still have other uses, for example improvements in the output specifications or increased transparency. It can also be used as a negotiation tool, as it provides a benchmark for the private sector bids. In addition, PSC is vital component of the decision-making audit trail and thus an important factor when the public accountability is examined. (Grimsey & Lewis, 2005)

The value that a project can generate for an individual public purchaser might differ a lot from the benefits for the whole public sector. The VFM analysis is done only from a perspective of the purchasing public body and thus fails to take into account the consequences for the whole public sector. (Heald, 2003; Shaoul, 2005) Sometimes the PPP might even cause indirect costs to other public body, which could have been otherwise avoided (Heald, 2003). In addition, there might be synergies that are lost, when private sector operator does project. In the worst case the option that is best for the purchaser is the worst for the public sector as whole. This does not underlie only the weakness of the VFM, but emphasizes the need for collaboration between the different parts of public sector. It needs to be acknowledged that although there are different organizations within the public sector, initially they are all funded from the same funds.

4.2.2 Risk transfer

It is the transferrable risks that make the costs of the PSC higher than the costs of the PPP and without the risk transfer PPP would not usually deliver value for money over the PSC (Heald, 2003). However, Shaoul (2005) argues, “risk transfer is conceptually flawed”, because it includes an assumption that all the future outcomes can be forecasted and put into a format that can be used in a quantitative analysis. In reality the infinite number of possible outcomes makes it practically impossible to forecast the future. Thus, business decisions-makers have to deal with uncertainty, not risk. (Shaoul, 2005)

Froud (2003) presents a summary of risk transfer and value for money in new hospital projects in the U.K. In the summary private finance options and PSC are compared in respect to their ability to generate VFM. This comparison shows that it is the risk adjustment that makes the private sector bid preferable. Still, the differences of risk adjusted VFM remain low. Other studies have shown very similar evidence (Khadaroo, 2008; Khadaroo, 2014; Shaoul, 2005). In his study Khadaroo (2014) show that the PSC may include risks that are not really transferred to the private sector and should have been excluded in the valuation. In addition, upside risk of the traditional procurement may be unidentified and thus left out of the analysis. (Khadaroo, 2014) This raises a question if the risk transfer is deliberately designed the way that the value for money test favors the private operator’s bid.

Defining probabilities for risk consideration in PPP is practically impossible. Probabilities are always based on data from similar projects in the past. PPP project are unique and include a distinguishing set of project specific key variable. In addition, due to the long duration of PPP projects is practically impossible to analyze them as finished. Hence, it is hard to find projects that are comparable with each other. The long time span also increases the amount of possible outcomes, which makes it hard to set a probability for an individual outcome. (Zimmerman & Eber, 2014). In addition, as Khadaroo (2014) found out that even nearly identical projects can have different risk profiles. Lastly, VFM usually considers only risks produced by the project participants, although many risks may arise from outside the project (Edwards & Shaoul, 2003). In

their study Zimmerman & Eber (2014) question if probability distributions can be assumed for such a complex settings as a PPP and came to a conclusion that risks in PPP projects are absolutely unquantifiable. Additionally, they argue that only minor risks can be determined and transferred to the private sector, whereas the public sector retains the main risks of the project.

The risk allocation processes do not take into account the distinct nature of public sector, but the risk are restricted to those of a generic contract (Froud, 2003). In addition, risk allocation can increase the value of risks as they are segregated from others. When risks are retained by the public sector they are pooled together with all the other risks faced by the public sector. The pooled risks can be managed in a way that diminishes the overall risks of the public sector. Thus, total value of pooled risks is usually less than the sum of individual risks. The risk allocation process decreases the benefits of pooling by pointing out individual risks (Edwards & Shaoul, 2003)

It is a lot easier to write risk allocation principles to the contract than to implement them in practice (Clifton & Duffield, 2006). Hence, optimal risk allocation may be theoretically possible, but in practice it is close to impossible. The project specific characteristics, external environment and relationship between the partners all create uncertainties, which have to be taken into account in order to define the optimal risk allocation of a PPP project. Hence, it is practically impossible to achieve optimal risk allocation over a life of PPP, although in theory it can be done for a certain point in time. Additionally, it may be very difficult to verify if risk transfer actually occurs as planned. (Edwards & Shaoul, 2003; Khadaroo, 2008; Khadaroo, 2014). Thus, risks have to be continuously monitored and assessed through the whole project. (Khadaroo, 2014) Love et al. (2015) emphasizes the importance of consistent performance measurements and future proofing, an action where the asset is defined to have value in the future.

According to Demirag et al. (2012) study on literature, public sector has managed the risks less effectively than the private sector in PPP contracts. The private sector operators are more professional in risk calculations. Thus, they have been better able to ensure that they are fully compensated for risk taking. In addition, realized risk

allocation may not be the same as planned (Iossa & Martimort, 2015; Edwards & Shaoul, 2003) and risks that are not defined in the contract often remain with the public sector (Froud, 2003). In his study Khadaroo (2014) found out that private sector partner used special purpose company (a highly geared shell company with no employees) to limit its risks and took only risk that it could transfer to subcontractors. Private operators are aware that public sector has the ultimate responsibility and long-term service disruptions are unbearable (Iossa & Martimort, 2015). The problems of reverted risks are amplified in projects that are too important to fail (Khadaroo, 2014).

In an example, presented by Froud (2003) Royal Armouries museum in Leeds was set up under a PPP. The initial purpose was that the private sector would bear the risks related to the volatility of number of visitors in the museum. The fact that there were only 400000 visitors pre year instead of the forecasted 750000 led to the financial collapse of the museum, which meant that additional public funds were needed. (Froud, 2003) Even though this is a clear case of a failure of risk transfer, one could question how the situation would be different without the PPP contract. The real problem was not the risk transfer, but the huge errors in the forecasts. Additionally, public sector made the decision to help the troubled private operator. If the government had not given additional funding to the museum, it would have gone bankrupt. This would have meant realization of the operational risk. So, it was not the PPP contract that failed to transfer the risk to the private sector, but public sector's decision that did not let it to be realized.

Also the feasibility of risk transfer can be questioned. First of all, public sector has economies of scale to cope with risks. It is big so that it can cope with losses more easily than a single privately owned company. In addition, public sector has motivation to bear some risks that private sector does not. Private sector's goal is to make profit, whereas it is in public sectors interest to look also after the weakest in the community. Public sector can diversify risks in two ways. First, public sector has multiple operations. If an individual project turns out to be a failure, the situation can be compensated by successes in other operations. Second, public sector has multiple owners. Basically all the citizens own the public sector together, so risks are divided between all of them. Thus, the risk for an individual citizen is negligible. (Froud, 2003)

Last but not least, public sector has the right to tax. If public sector faces a financial distress, it can collect more money from its citizens.

4.3 Decision-making

Design of decision-making process depends on the role of the decision. Brunsson (1990) states that decisions may have four different roles, depending on what the decision-maker is trying to achieve. In its most traditional role, decision is a rational choice between different alternatives. However, decisions can also be used to mobilize organizational actions, for example, by increasing commitment and creating motivation within the organization's members. They can also have a role in distributing the responsibility. According to the causal definition of responsibility, the person who is the cause of an event is also responsible for it. If there is more than one decision-maker, the responsibility for the outcome is shared. In addition, the responsibility can be diluted over time. If the final outcome is a combination of different decisions made through a certain time interval, there is not one specific decision that can be defined as the cause of the outcome. In the extreme, responsibility is diluted to so many decision-makers at different times that no one can be considered responsible. Lastly decisions can be used to provide external legitimacy. In this case it is very important that the decision making process is public and the decision made reflects the external norms. However, it is crucial to notice that decisions do not need to lead to actions: decisions can be just talking. This is especially typical if the purpose of the decision is only to provide legitimacy. (Brunsson, 1990)

Partnership with private sector requires a change in the way of thinking within public sector. Negotiations and flexibility are partly replacing governmental regulations and rigid procedures, which have traditionally dominated the public sector operations. In addition, collaboration between public and private sector diversifies the responsibility and fragments the decision-making processes. (Medda, 2007)

As stated earlier one of the main benefits of PPP is the possibility to dilute responsibility. The public sector operator decides what kind of service the private company has to provide and it makes the decisions on how it is actually going to produce the services. However, the company may not be able to make the whole

decision by itself, but it might have to be approved by the public sector. In addition, the PPP contract usually includes some definitions that limit the possibilities of the service provider. The PPP arrangements are usually long and may include a long implementation time for the asset, for example building of the needed infrastructure. All the conditions that prevail at the end of the contract cannot be accurately forecasted and some decisions need to be left open. Thus, PPP contracts can also dilute responsibility over time.

The shared responsibility can also raise the question of accountability. All the parties have sacrificed at least some of their decision-making power to the partnership. Thus, it can be argued that partnership is the accountable body instead of an individual party. (Bovaird, 2004). This problem is manageable by right kind of contracting. However, it is not that simple as PPPs are highly complex. Generally the private operator is responsible and accountable for the provision of services, but the public sector has the ultimate responsibility over the services (Shaoul et al., 2012).

The dilution of power is one of the issues that make PPP less desirable for politicians and public administration. This fear of losing control can be seen as an example of politicians' unwillingness to share power. (Bovaird, 2004). However, these suspicions can also be justified. As already stated, PPP reduce public sectors' ability to modify services by binding it to a long contract with the private operator. This restricts the possibilities of policy-making. On the other hand, PPP contracts encompass viable services, which are less often subject to politics. Additionally, payments are already set during the contract negotiations, which secure the public sector from large surprises. It can also be questioned what kind of political changes can be conducted to a large infrastructure project already in progress.

PPP also extends the role of auditors and others assessing the decision-making. Now it is not sufficient to verify that the money has been used correctly, but it needs to be proven that it has been used on the right target, that is the one that delivers the best possible value for money. Auditors are no longer only objective technicians, but their roles are extended to policy analysts. (Heald, 2003) Additionally, their role has to be

extended to cover also non-financial aspects, because payments in the PPP are connected to performance measures (Edwards & Shaoul, 2003).

Maybe the most important decision in the context of PPP process is the selection between traditional procurement and the PPP. Grimsey and Lewis (2002b) present three points that should be covered in order for it be reasonable to deliver services by means of PPP. Firstly, the services in question have to be core services i.e. they should be services that the public sector should deliver itself. Secondly, the project needs to deliver the best possible value for money. Thirdly, project should satisfy public interest criteria directly or by adjustment in the contract or regulation. (Grimsey and Lewis, 2002b)

Heald (2003) defines the selection between PPP and a PSC to be decision taking, which can be separated from decision-making. In the decision-making all the possible options are defined and placed under consideration, whereas the decision taking comprises only a selection between alternatives that remain, after certain others have been excluded. In order for the selection between PPP and traditional procurement to be decision-making, it should be extended to take into account two additional possibilities: the fall back position and the status quo. Status quo refers to a situation where nothing is done, which is always a possibility. However, investments are usually planned when the situation calls for something to be done, which makes the status quo easily rejected. The fall back position (FBP) is much more interesting, as it refers to a situation were the PPP is rejected, no funds are available for the PSC and the status quo is not acceptable. In many cases the FBP is a real option and should not be underrated. (Heald, 2003) For example, in a case of new road construction the FBP could include a repair of the most damaged sections in an old road.

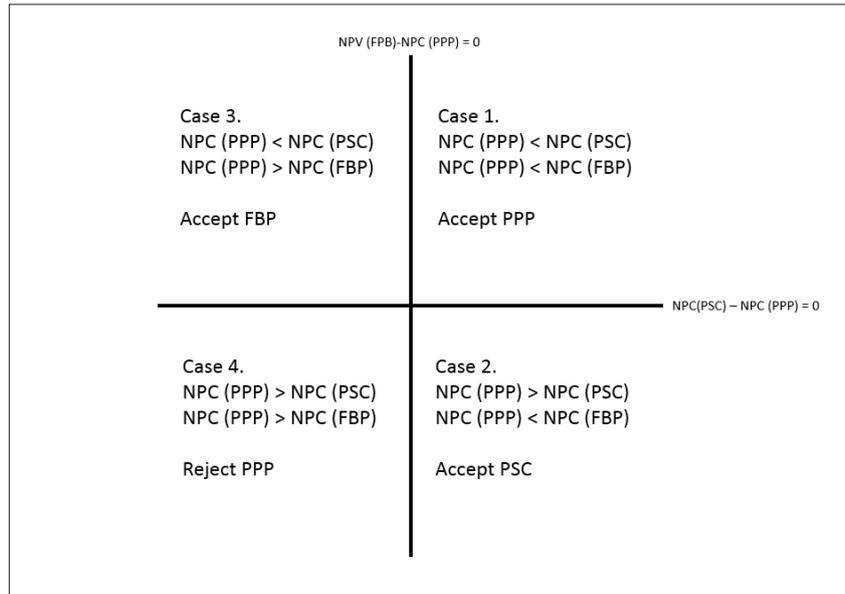


Figure 3. Illustration of Heald's four-quadrant analysis

Heald (2003) presents a four-quadrant analysis (figure 1) that displays the possible outcomes of the extended VFM analysis (here referred as cases 1-4). It can be used to highlight the problems of the PPP decision-making. In the case 1, PPP is superior to both PSC and FBP. The decision is clear and PPP is selected. However, if the PPP is preferable only to the FBP (case 2) the situation can be more complicated. The PSC is only hypothetical and it might not be actually available, for example due to the lack of funding. In this case, it might be in the decision-makers' interest to manipulate analysis in order to get a result where the PPP is the best alternative. The FBP can also be the most preferable option, as it is in case 3. However, the decision is usually made between the PPP and PSC so this option is not even included in the decision options and the PPP is wrongly selected. The case 4 represents a situation where the PPP is the worst option and should be rejected. Then, the choice should be made between the PSC and FBP. However, impossibility of PSC combined with the omission of FBP may still lead to selection of the PPP. (Heald, 2003).

5. Summary of the literature review

Partnerships with the private sector offer a worthy alternative to the traditional infrastructure procurement methods to the public sector (Love et al., 2015). There are a variety of different models of PPP from short-term management contracts to joint ventures (Grimsey & Lewis, 2005). PPP offer several benefits for the public sector. For example, they increase efficiency by introducing private ownership and expertise into a project. Bundling of different activities increase synergy gains within the project as it encourages the constructor to do upfront investments that decrease the operational cost of the project (Blanc-Brude et al., 2006). Furthermore, PPP enable initiation of projects that could not be funded from governmental budgets (Broadbent & Laughlin, 2003).

Public sector should pursue PPP only if it is the best value for money option. However, decisions to conduct a PPP are not always based on analytical findings. In some cases there are no public money reserved for the operation and if PPP would not be the most preferable option the whole project would fail. Thus, PPP becomes the only option. It can also be questioned if projects with high political commitment are unstoppable, regardless of what the actual numbers are. (Heald, 2003)

Risk transfer, as accounting in general, is not a neutral instrument but it can be used to promote or disguise decision-makers motives (Jupe, 2012; Edwards & Shaoul, 2003). Furthermore, analysts and decision-makers are not neutral agents but have their own incentives and preferences about the decisions (Heald, 2003). Hence, the objectivity of a VFM analysis can be questioned (Khadaroo, 2008). The PPP appraisal process can be manipulated in order to end up with desired figure for risk transfer. Still, Grimsey and Lewis (2005) argue that it is not in the interest of the public sector to manipulate the PSC. However, according to Shaoul (2005) decisions based on the VFM analysis are not as rational as claimed, but they are largely shaped by political control. Actually, when there is no other option than the partnership, VFM test's only purpose is to rationalize the decisions made (Edwards & Shaoul, 2003). Considering the rhetoric power of the VFM and the fact that in many cases there are no public funds available, it is hard to avoid the conclusion that VFM analysis has been specially designed to justify public sectors' decisions to partner with the private sector. (Shaoul, 2005)

Collaboration between public and private sector diversifies the responsibility and fragments the decision process. The public sector operator decides what kind of service the private company has to provide. Then company makes a decision how it is actually going to produce the services. However, the company may not be able to make the whole decision by itself, but it might have to be approved by the public sector. In addition, the contract usually includes some terms that limit the possibilities of the service provider. The responsibility can also be diluted over time. The PPP arrangements are usually long and may include a long implementation time for the asset, for example building of the needed infrastructure. Thus, all the conditions that prevail at the end of the contract cannot be accurately forecasted and some decisions need to be left open.

6. Methodology

This chapter presents the relevant research methodology. First, it introduces case study and interviews as a research method. After that, the weaknesses of the research methods and the validity of the results are discussed more thoroughly. Lastly, this chapter presents how the empirical data for this study was collected.

6.1 Case study as a research method

Eisenhardt (1989) defines case studies as a “research strategy, which focuses on understanding the dynamics present within single settings.” They often combine different data collection methods, which confirms the research constructs or hypotheses (Eisenhardt, 1989). Scapens (1990) divides case studies into descriptive, illustrative, experimental, exploratory and explanatory. However, this division is not precise, but one study can include parts from different segments. This thesis aims to describe how public sector decision-making is done in practice. In addition, it seeks to explain why public sector would decide to partner with the private sector and what aspects guide this decision-making.

Case study can be used when the studied subject is ambiguous and there are a lot of factors that affect it. Hence, it cannot be studied by other methods. (Otley&Berry, 1994) Case study allows decision-making practices to be studied in their social and organizational context and it can help researcher to understand how management accounting is used in practice. This way a general view of the situation can be constructed. Additionally, case studies are relevant in fields, where the theory is not yet completely developed. (Scapens, 1990) The Purpose of a case study is to increase the understanding of the studied issue and reassure the reader about the validity of the analysis (Lukka&Kasanen, 1995). According to Vaivio (2008) case studies can be especially beneficial in studies that address the management accounting as a contextual phenomenon and aim to expand the existing views of the selected phenomenon. Although, there is research on PPP, the decision-making in Finnish PPPs has not yet been studied. The Purpose of this study is to study the phenomena in a new context. Thus, case study method is suitable for the study.

Investment decisions are usually based on a combination of many different aspects. In addition, decision-making cannot be discussed out of its context (Carr et al., 2010). The Purpose of this study is to understand how decision-making in PPPs is done in practice. Thus, case study is a justifiable method for this study.

There are also some challenges that need to be taken into account when conducting a case study. The first problem concerning case studies is the generalization of the results (Scapens, 1990; Otley&Berry, 1994; Lukka&Kasanen, 1995). Because of this, assertiveness of case study results and conclusion has been questioned (Otley&Berry, 1994). Furthermore, case studies include the risk that they describe a very idiosyncratic phenomenon, which is valid only in the special context of the studied case (Eisenhardt, 1989). However, Scapens (1990) argues that the objective of case studies is not statistical generalizability. The Objective of this study is not to test how the findings fit the theory, but to study how the theory can explain the findings.

Case studies may also face problems concerning the relevance of the results. First, the researcher has a possibility to steer the study and thus affect its results (Scapens, 1990). The same problem is associated also with interviews, where the interviewer can knowingly or unconsciously lead the interviewee. Furthermore, in a qualitative study the researcher is supposed to experience the situation same way as do those who are studied (Atkinson, 1998). The findings are interpreted through the researcher's perceptions, which are based on a theory. Hence, it is possible that these perceptions guide the data collection and interpretation of results. (Otley&Berry, 1994) On the other hand, continuous merging of different realities can unchain the investigator's thinking. Thus, case studies can result with conclusions that are less biased from the researchers preconceptions than studies based on incremental data collection. (Eisenhardt, 1989)

Atkinson (1998) states that some of the researchers would prefer that field study should be done before familiarizing oneself with the theory. This way impact of theoretical perceptions could be avoided. On the other hand, theoretical knowledge makes it possible for the researcher to better observe the theoretically important matters.

(Atkinson, 1998). In this study some familiarization with the theory before the empirical section was justifiable, as it allowed the researcher to focus on relevant issues in the data collection. However, open questions were used in the interviews in order to minimize the possibility of observer's guidance in the situation.

6.2 Validity and reliability

Validity of the research refers to the question if the studied phenomenon is actually the one that is supposed to be studied, whereas the reliability refers to the reliability of the data collected. McKinnon (1988) describes four situations where the validity or the reliability of the research can be threatened. First, the researcher's presence may influence the studied phenomena, for example by molding the behavior of the studied subjects. Hence, the observations made may not represent the natural settings. Second, researcher's own perceptions can bias the interpretation of the situation, as already explained in the previous section. Third, there can be limitations in the access to the data in the field, which can lead to observation of an incomplete phenomenon. Fourth, the complexities and limitations of human mind may steer the studied subjects to present the situation different from the reality. For example, the interviewees can forget things or explain the situation in a manner that presents them in a better light. (McKinnon, 1988)

In order to increase the validity of the research and reliability of the results, it is important that the researcher spends sufficient length of time in the field, as it decreases the potential for the observer bias and observer-caused effects. It is also important to use multiple methods of data collection. It is also important that the researcher's actions create an atmosphere of confidence and enable access to the social relationships of the research setting. (McKinnon, 1988)

The empirical evidence of the thesis is limited to examining one special case of pneumatic waste collection in Finland. This inevitably decreases the generalization of the results and any attempt to generalize the findings beyond the context of the waste collection and Finland should be undertaken with caution. However, as stated earlier generalizable results are not the main target of this study. The intention is to show how

PPP decision-making is done in practice.

In order to increase the reliability of the study more people from the public sector organizations should have been interviewed. This was not yet possible, because only one representative from each public operator was involved in the project at this point. However, the conclusions of this study do not rely solely on the interview results, but multiple data collection methods were used. Observation of the tender negotiations gave the opportunity to see how the different investment options were constructed and what kinds of issues were discussed during the tendering. Additionally, the researcher was able to participate on construction of the comparison of different decision alternatives.

Observation of real events is a good way to get an unadulterated view of a situation. For example during interviews the interviewees can modify their answers in order to present the situation in a more favorable way. Furthermore, the observer can steer the situation, as already explained. The observance of people in their daily work diminishes these problems, as it allows people to act spontaneously.

6.3 Collection of data

The empirical research of this thesis consists of a case study of an investment in a regional pneumatic waste collection system in Helsinki Finland. The data was collected during the first half of the year 2015. The evidence was collected by observance of a competitive tendering process and interviews with the project participants. The data collection was done simultaneously with the literature review in order to allow straight dialogue between them.

The observed competitive tendering included three negotiations with each of the two suppliers of the pneumatic waste collection system and a meeting where the results of the tendering were presented to the public sector operators. Hence, over 20 hours of negotiations were observed. The negotiations were not tape recorded, but notes were taken in order to later verify the observer's recollections about the situations. Representatives from the consulting company were interviewed to get more elaborate picture of the construction of the invitation to tender. In addition to the negotiations

there were also several unofficial interactions between different parties during the tendering process. However, it was not possible to observe these and thus they are not included in this study.

Representatives from the both public sector operators were interviewed in order to get a more comprehensive picture of their decision-making practices. Both representatives participated in the case project and thus were able to give an encompassing overview on public sector's procedures. Four semi-structured interviews were made, each lasting approximately for an hour. Semi-structured interviews were used to ensure that the interviews concentrated on the essential aspects, but at the same time they were also used to minimize the guidance by the interviewer. All the interviews were held in Finnish, but they were immediately translated and transcribed in order to allow straight citations. The interviewed for this study included a representative from both public sector operators (Representative of Helsinki City and Representative of the Senaatti-kiinteistöt) and two representatives from the Consulting Company responsible for the competitive tendering (Project manager of the Consulting Company and Partner of the Consulting Company).

7. Case

This chapter presents the empirical findings of this study. The chapter begins with an introduction of the empirical case. Then observations made during the competitive tendering are presented, which are complemented with the data from interviews. Finally, the public sector decision-making is discoursed more thoroughly.

7.1 Introduction

The case of this thesis discourses a competitive tendering of a pneumatic waste collection system for a district in Helsinki Finland. Although the main purpose of the tendering is to select a supplier for the system, it also includes a public sector decision to continue its participation in the investment. The district is separated into three parts, two residential areas and a business complex, which will include a shopping mall, transportation hub, hotels and a few apartment buildings. The business complex is privately owned, whereas two public sector operators own the residential areas. This area will consist only of new construction and area is built in several phases. The Business complex is build first and then the construction will expand to the residential areas.

As stated earlier there are two public operators involved in the development of the Area, Senaatti-kiinteistöt (Senaatti) and the city of Helsinki. The Senaatti is a public utility, which manages the Finnish state's real estate properties. It does not own the properties but acts as an agent for the government. It is also responsible for the sale of properties that are no longer used by the government and have no strategic value. In this case Real Estate Department represents the city of Helsinki. The Real Estate Department is responsible for leasing, selling and developing the land areas and buildings owned by the City of Helsinki, and the Real Estate Committee and the Housing Committee guide all of its operations. The decision-making within the city organization is hierarchical: the department's officeholders make smaller decisions, more important ones are made by the committees and the most significant ones done by the City Board. (The city of Helsinki, 2015)

In the future, the public operators are not going to be involved in the construction of the area, but the land is going to be sold. However, they are still making the decision about the waste collection. If the public operators decide that the waste is going to be collected by the pneumatic waste collection, all the future owners are forced to join the system and there will be no additional waste collection in the area. Hence, the public operators are the decision-makers although they do not actively participate in the decisions made. It is also worth to notice that it is not known who is going to build the buildings in the areas A and B or what kind of buildings there is eventually going to be built. This affects also tendering of the waste collection system, because it cannot be known what the actual waste amounts are going to be in the future.

The business complex is built and owned by a construction company, from now on referred as the Constructor. It is one of the largest construction companies in Finland and in addition to the business complex it is very likely going to construct some buildings in the residential areas. The Constructor is also responsible for the tendering process and signs the initial contracts with the supplier of the pipe system. The surrounding residential areas are not yet bound to the system and the public sector operators do not officially participate in the tendering. At this point, they only supervise the process and verify that the tendering and the selected system meet the public sector qualifications in order for them to be able to continue with the project. Thus, the tendering process has to fulfill the needs of the private Constructor and the public sector operators. The Constructor is also the first in line to make the decision about the supplier of the system and it could favor the tender most suitable for its situation, even if it would be worse for the public sector. However, it is not profitable for the Constructor to conduct project alone, so it has a high motivation to make sure that the deal is also acceptable to the public sector operators.

It is fixed by the earlier decisions, in the construction permit, that waste from business complex is going to be collected by the pneumatic waste collection system. It has also been set that four different waste fractions (mixed waste, bio waste, paper and cardboard) have to be collected by the system. It is normally obliged that these waste fractions are collected in all the residential areas in Helsinki. However, business complexes are not normally restricted by this regulation and they are in charge of their

waste management, even if there would be residential apartments in the complex. Hence, it is hard to avoid the conclusion that the purpose of this decision was to make sure that the surrounding areas are able to join the system frictionless.

For the purpose of managing the pneumatic waste collection a new waste collection company is founded. The company is going to be purely a shell company, with no employees. At first it is going to be completely owned by the Constructor. Later when the residential areas are built, and if these areas will join the system, the new residents are going to buy their share of the company. The waste collection company signs a 20 years contract with the selected supplier to build, maintain and operate the system. Additionally, the supplier has to take care of the waste fractions that are not collected by the system and it is responsible for the waste management in the business complex, but this is a separate deal and concerns only the Constructor and the supplier. Illustration of the case situation is given in the figure 4.

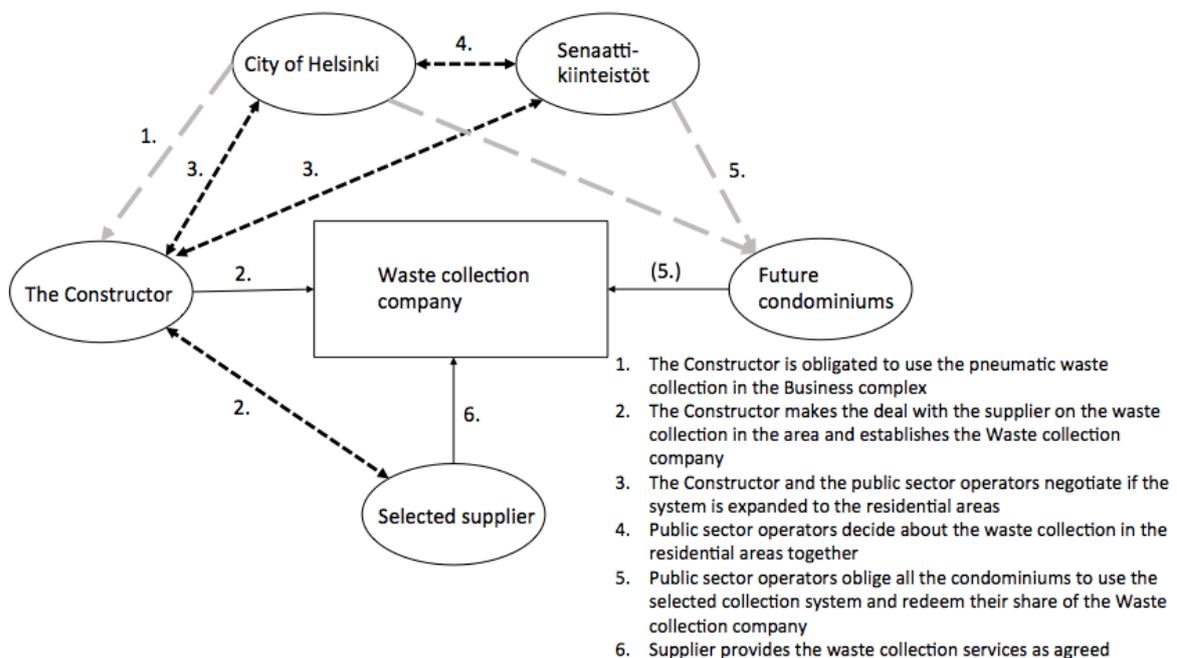


Figure 4. Illustration of the case situation

In addition to the decision-makers, a consulting company and two different suppliers participate in the competitive tendering. The consulting company acts as neutral actor who prepares the invitation for tendering, analyses the tenders after they are received and gives the Constructor and the public sector operators its own recommendations for

the decision-making. The consulting company is specialized in construction projects and already has experience with the pneumatic waste collection. It also prepares an estimation of the costs of the traditional truck-based collection and presents a comparison between the long-term costs of the pneumatic system and the truck-based system. The two suppliers already have similar systems in operation in other locations. Thus, they are proven to have the experience to deliver the project and to be able to produce required system. In addition, because the consultants are already familiar with these companies, hence they were able to ensure that the quality of their operations would exceed the acquired level.

“Earlier competitive tenderings have shown that with these volumes and required service levels other suppliers are not able to deliver. This has been definitively proven. Furthermore, earlier tenderings conducted by the City of Helsinki have been so demanding and high quality that if a supplier gets selected it means that they are really qualified.” (Partner of the Consulting Company)

This study comprises only the competitive tendering of the pneumatic waste management system. Hence, at the time of this study the public sector operators only accept the selection of the supplier and confirm possibility of continuing the negotiations. The official negotiations between the Constructor and public operators about the allocation of cost will take place after this study. Thus, at the end of this study public sector’s decisions are still unknown. However, the waste collection system is tendered in a way that it should be also able to deal with the waste coming from the residential areas. If these areas are not included in the final solution a large part of the deal becomes negligible and the system, designed for the whole area, will be oversized.

Pneumatic waste collection system

Waste management can be considered as a public good, which results with a cleaner environment and improves the welfare of all the residents in the community. Utilization does not wear cleanliness, so an individual can use it without diminishing its value to others. Furthermore, proper waste disposal is also crucial for retaining of public health and functionality of the society. Hence, it should be provided to everybody, regardless of his or her ability to pay for it. (Massoud & El-Fadel, 2002) Waste collection is an

important part of waste management. It considers the transfer of waste to the location of its final disposal.

The underlying asset in the PPP project case is a regional pneumatic waste collection system. The pneumatic waste collection system is an automatized pneumatic system, which collects the waste from waste collection points into one central terminal. The residents of the area sort out the waste fractions – mixed waste, bio waste, paper and cardboard – and take them to the appropriate waste collection point. Here waste is disposed through inlets into underground containers. Then, negative air pressure is used to pull waste through a network of pipes to a central waste collection terminal, where the waste is separated into containers. After that, the trucks pick up the full containers of waste from the station and transport them onwards enabling the waste to be utilized as recycled material, incinerated for energy or turned into compost soil. (ISWA, 2013).

The pneumatic waste collection system offers an attractive alternative for the traditional truck-based waste collection in urban districts. It can be viewed as more efficient and cost-effective way of tackling the pressing needs of current waste handling, as there are no waste collection trucks circling around the residential areas. In addition, the speed of garbage collection process is increased, especially in urban residential areas. This decreases the operating cost of the waste handling and increases the life quality of the residents in the area, for example by decreasing the traffic in the area. Placing the waste handling equipment underground makes it possible to use the surface space more efficiently. However, the initial investments in pneumatic waste collection system are higher than those for the traditional truck based waste collection. These costs include for example the implementation of the pipelines and machinery in the central collection terminal. (ISWA, 2013). The benefits and the costs of the system depend a lot on the area where it is going to be implemented. Thus, they should be carefully evaluated case by case.

PPPs are suitable in a situation where the quality of infrastructure increases the quality of services and demand for the services is stable and easy to forecast (Iossa & Martimort, 2015). Collection and transportation cause a significant portion of costs in waste management and require large capital investments. Hence, there is a high

possibility of performance improvements and cost reductions. (Massoud & El-Fadel, 2002) Thus, PPPs can be very feasible in the context of waste collection.

Medda (2007) argues that the risk allocation is especially critical in PPP agreements considering transport infrastructure investments, due to their capital-intensity, large sunk investments and practically non-existing relocation possibilities. The same applies also for the pneumatic waste collection system. (Medda, 2007). The same applies also for the pneumatic waste collection. The initial investments cause a significant portion of the overall costs. Additionally, when the piping is finished it is practically impossible to move in into other location. Hence, a PPP can be very reasonable in the context of pneumatic waste collection. It is still crucial to acknowledge that even if waste management services would be totally privatized, the ultimate responsibility lies with the municipal government (Massoud & El-Fadel, 2002).

7.2 The competitive tendering

7.2.1 New of constructing the invitation to tender

The invitations to tender differed from the traditional public sector projects, as only the service requirements were strictly specified, where as the technical design was left up to supplier to decide. Additionally, the invitations were made in co-operation with the suppliers in order to increase the transparency of the process and the quality of the tenders. Co-operation at the invitation phase also ensured that the invitations were clearly understood by both of the suppliers, which minimized the need to clarify the tenders later. Furthermore, the suppliers are the experts of the systems so they know what can be done and what is reasonable to expect from the system. The new way of constructing the invitations considered as rational, for it would allow new innovations and thus result in improved overall solutions.

“This is a question of technological freedom and placing different solutions on the same line. Defining system specifications precisely steers the selection process and favors certain solutions, which eventually decreases the competition. If you are able to create right incentives and measure practically important aspects, you can get better results by leaving as much as possible open in the invitations to tender.” (Project manager of the Consulting Company)

“It is smart to leave the technical design up to the supplier in order to get full benefits of late technical improvements.” (Representative of the Helsinki City)

It is also acknowledged that the increased freedom in the tenders could increase the buyer’s risks. This problem is dealt by introducing covenants to the contract.

“Free hands were given to the suppliers to design and to plan the dimensioning of the system, for example the capacity of the collection station. This of course includes the risk that suppliers would be overoptimistic and not able to operate at the required level. On the other hand, it is required from the suppliers that they are able to deliver what they are offering.” (Project manager of the Consulting Company)

Normally a variety of qualitative aspects are scored in the tendering. However, they can often emphasize irrelevant issues and misguide the decision-making. This time, no qualitative points were used in the tendering.

“Quite often the qualitative points are used to subjectively evaluate issues that are subjective in the first place. They are used to evaluate matters of which realization or execution cannot be ensured. Even in a way that their unrealisation is not sanctioned. In earlier projects (City’s pneumatic waste collection investments) the qualitative measurements have focused more on the project than the end users. For example quality points were given on the experience of the project leader. Additionally, esthetic factors had a substantial weight, although they are subjective. In earlier projects the supplier received service payment regardless of how the service has been for the end user. These problems have now been taken care of.” (Project manager of the Consulting Company)

7.2.2 Public sector’s role in the tendering process

As stated earlier the public sector operators do not officially participate in the tendering, but supervise the process. Still, their influence is clear from the beginning, as explained by a representative of the consulting company:

“Public sector operators guided certain aspects of the competitive tendering from the beginning. For example, the principles and design of the contract had to be similar to the earlier project (pneumatic waste collection projects of the City of Helsinki). They also approved the

objectives of the negotiations and the principles of the comparison. The public sector operators were already informed in the beginning that quality points would not be used in the competitive tendering. They also supported the idea that the requirements for technical design and dimensioning were left open in the invitation to tender.” (Project manager of the Consulting Company)

It is also very important that the costing was transparent and clearly separates the public sector’s obligations from the Constructor’s.

“The residential regions had to be treated separately from the Business complex, but they should have equal weight with it in the comparison of the tenders.” (Project manager of the Consulting Company)

”It is very important to make sure that the Constructor’s costs are not transferred to the residential areas.” (Public sector’s representative in the presentation of the results of the tendering)

The public sector involvement is also important to the Constructor, as it does not want to conduct the project alone. Furthermore, it was important not only to make it possible for the public sector to participate in the project, but also to make it as easy as possible.

“The invitations to tender were based on earlier tenderings and similar documents were used in order to ease the public sector’s bureaucratic processes. The Constructor also desired this, as they wanted the public operators to participate on the project.” (Partner of the Consulting Company)

“It was important that the dimensioning would be very effective in order to decrease the possibility that public sector operators would withdraw from the project because of the investment costs.” (Project manager of the Consulting Company)

7.2.3 Negotiations

The formulation of the invitations to tender included three rounds of official negotiations with the suppliers. Each of the negotiations had their own agenda depending on the phase of the invitation. The representatives of the supplier, the Constructor and the Consulting Company attended negotiations.

The purpose of the first part of negotiations was to introduce the project to the competing suppliers and to open up the conversation about the specification of the system. At this point the main focus was on the technical details and the specification of the needed system and less attention was paid to the financial aspects.

There was also a lot of conversation about the underestimation/overestimation of the future needs i.e. the demand risk. The suppliers expressed their worries on what will happen if the utility of Business complex is not going to develop as planned or if the residential areas do not develop as planned. These concerns were rather legitimate, as the schedule of the residential areas' construction is still unclear. A representative of the supplier explained how the situation generates risks for the all parties: if the payments are tied to the usage of the system, the supplier of the system might not get revenues it has expected. On the other hand, it is possible that the purchaser will have to pay for the oversized system. Situation is closely linked to how the time frame of the contract will match the construction of the area. Even though the contract time would be as long as 30 years, there is a possibility that the construction is not finished by the end of it, which can lead to two kinds of problems. First, although the system is originally optimally planned, but by the end of the contract period due to the failure in the construction schedule it can turn out to be oversized. Second, one of the suppliers could win the tendering with a system, which capacity is sufficient only during the contract time, but afterward problems would arise. In case of the Business complex the risk of construction phase lasting over the 30 years is of course negligible, but for the residential areas, where the construction schedule is still undecided, the risk is real. Furthermore, the type of buildings in the residential area, which is also still undecided, would also have a big impact on the design of the collection system. For example, a two floored need a very different system than a high-rise. It was agreed that these problems should be taken into account in the technical and quality specifications. Additionally, the purchasers would produce estimates of the future waste amounts, which could be used in the system design.

It was also pointed out by both of the suppliers that because the technical design in the competing tenders can differ substantially, it is important that the quality requirements

and their valuing would be transparent. Quite surprisingly the representative of the Constructor questioned the value added by quality improvements. He explained that market prices would define the price range of apartments and offices in the area. Due to numerous factors that influence the market prices, the quality improvements in the waste collection system would have little or no effect on the final price.

For the second set of negotiations the suppliers had the opportunity to familiarize themselves with the project and they also had suggestions for how the collection system should be designed. Conversation was still mainly focused on the technical issues, such as the diameter of the piping or usage of waste compactors. There was discussion about a possible smell of the system and how it can be assured that it does not cause problems in such a central location, as the collection station is due to be situated. However, these risks were considered to be rather minor and were later transferred completely to the system supplier. During the second negotiation an option, where the cardboard is collected by trucks and only the tree others by the pneumatic system, was considered. There was a lot of economical as well as practical reasons that supported the idea. However, this could reduce the public sector's will to join the residential areas to the system, which is very important for the Constructor. Furthermore, it was also noted that this idea was against the construction permit of the Business complex, so it was eventually turned down.

By the third round of negotiations the invitations to tender were almost ready, but still unpublished. The purpose of these negotiations was to make sure that the service requirements were reasonable and that the invitations would lead to the best possible outcome. It was also clear that the systems would differ a lot, but it was still important to ensure that the invitations would not favor either one.

7.2.4 Results of the tendering

After the tenders are received the consulting company analyzes them and presents the results to the Constructor, which chooses the winning bid. The results are also presented to the public operators along with the estimations of the costs of the traditional waste collection. For the public sector operators it was important that the tenders were not

only compared together, but also against the option to use truck-based waste collection.

“Earlier this might have been an ideological decision, but now it has to be purely economical. This is also why the comparison with the traditional system is so important.” (Public sector’s representative in the presentation of the results of the tendering)

The estimation of the cost of the truck based collection system was made by the Consulting Company. These estimations were based on a simulation model, which was now completed to also take into account the investment costs. The input data for the comparator was collected from public sources, such as the price list of The Helsinki Region Environmental Services (HSY). If the residential area would not join the pneumatic waste collection system, the waste would be collected by HSY. It was also important to take into account the construction schedule of the area, as the costs would be spread over it. The costs of the common infrastructures, for example the collection station, were divided and allocated in terms of the housing space of the different areas. The figure 4 shows the comparison of the costs between the winning tender and the traditional truck-based collection.

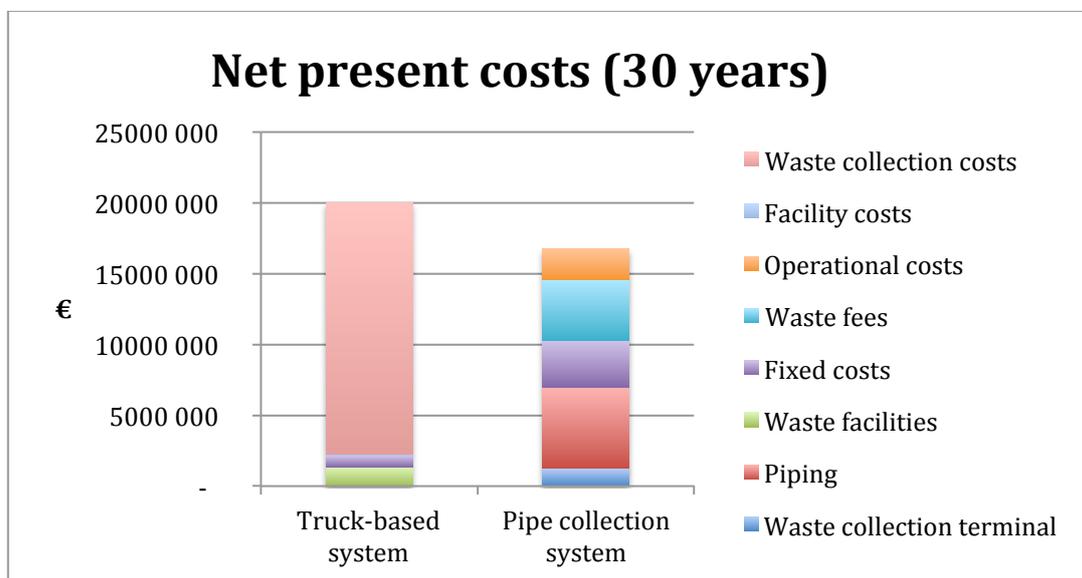


Figure 5. Net present costs of different collection alternatives

The figure above shows that the pneumatic collection system is the most economical option, although its investment costs are substantially higher. However, this does not mean that the public operators would select it without a doubt, because the investment

costs bear a high importance in their decision-making. Furthermore, it needs to be acknowledged that these results are only estimations of the different collection methods' costs. They do not include any risk transfer, except for the ones included in the tenders. Additionally, the division of the costs between the Business complex and the Residential areas is done purely on the basis of their forecasted area (m²), whereas the real division will be specified in the negotiations between the Constructor and the public sector operators. However, it can be assumed that the public operators have a rather strong position in these negotiations, as their participation is needed in order to make the project profitable.

In the end, both public sectors operators were satisfied with the tendering process, which was also considered to be successful by the consultants.

“If we look at the results, it seems that the competitive tendering was successful. The competing prices are close to each other and obviously cheaper than earlier.” (Representative of the Senaatti-kiinteistö)

“Both of the suppliers invested very much into their tenders, which is the baseline for a successful tendering. They offered new solutions, which would not be possible if the buyer would specify the technical details. The system is optimized in both of the tenders. Prices are close to each other and the price range is lower than earlier, which makes it easier for the public sector to participate in the project. Furthermore, the suppliers decided to offer better service levels. This means that the incentives are properly designed. If the service levels would be less valued, the suppliers could select lower levels, which would increase the risks for the supplier.” (Project manager of the Consulting Company)

7.3 Public sector's decision-making

7.3.1 The decision-making processes

The normal decision-making process of both public sector operators is graduated and bureaucratic. As a state owned public utility, laws and regulations govern Senaatti. Additionally, government's real estate strategy defines very strictly Senaatti's actions and decisions. In Helsinki the city officials first prepare a proposal, for example to use the pipe collection system and to establish the waste collection company. Then, if the

higher officials accept the proposal it is moved up to the city's trustees. It is the trustees and the city government that hold the decision-making power.

“The City of Helsinki does not do ceremonial decisions. The city government really makes the decisions. Although the possibility that the decision will change is small, especially if it is already approved by a committee.” (Representative of the Helsinki City)

In this case the decision-making differs from the normal practice for both operators. The area does not consist of two separately owned parts; instead it is formed from little bits that are owned by the two operators. It would not be reasonable to use two different collection systems simultaneously in the same area. Thus, the decision to implement the pipe collection system has to be made together. The Senaatti owns majority of the area, so its opinion is moderately pivotal.

“It is not possible that either the city or the Senaatti would take part in the project alone.” (Representative of the Helsinki City)

Because of the abnormality in the decision-making processes, none of the interviewees were certain of how the decision-making actually takes place. Still, the City's representative was able to give some idea how it might happen.

“With this case we are still in unknown waters and the decision process is still unclear, but in practise it is surely going to follow the normal procedures as much as possible. I believe that the issue is dealt with in the cooperation group, where it needs to get the green light from both the city and the Senaatti. If both parties think that the system should be expand outside the Business complex, the case will move forward. The final decision will most likely be made by the city government.” (Representative of the Helsinki City)

7.3.2 Focus on financial aspects

Both of the public operators emphasize on financial aspects in the decision-making. SH explained that in earlier pneumatic waste collection investments more emphasis was placed on the technical issues, because there was less knowledge about the pipe collection system. Now, focus is shifted towards the cost considerations, as there is more experience with the systems. Both interviewees also noted that during the first

implementations the costs of pipe collection system were significantly higher than those of the traditional truck based collection. Thus, the decision to invest in the system could not be based purely on the financial aspects.

“From the government’s perspective reasonable pricing is a theme that recurs constantly and it is an important factor in the decision-making in this case.” (Representative of the Senaatti-kiinteistöt)

“Currently main focus in the decision-making is on costs, which are surely put into perspective with the benefits.” (Representative of the Helsinki City)

The consultants also acknowledged the importance of the financial aspect and it was taken into account in the tendering process.

“The system has to be functional and so good that there is not going to be complaints from the end-users. But in the end, costs are the most important factor for the public sector.” (Partner of the Consulting Company)

“In order to secure the competitiveness the financial aspects have to have a significant weight in the tendering, other kinds of criteria often increase the prices. Ultimately everything is transformed into money. It is important to make sure that all the qualitative factors are measurable and could be valued in Euros. This way everybody is aware how the buyer would value the different qualitative aspects.” (Project manager of the Consulting Company)

However, the costs of the collection system are not considered individually. They are put into context with other construction costs and the price range of the area.

“Increased costs should also be scrutinised with respect to the price range of apartments in the area.” (Representative of the Helsinki City)

In areas where the price range is low even a small increase in the cost may have a significant effect on the profitability of the construction projects. On the other hand, in the more expensive areas there is more room to increase costs. Housing prices in the area in question are going to be rather high and able to bear the higher construction costs. However, some premises in the area are going to be price limited, which also places more pressure on their construction costs. Hence, it is important that no

unnecessary extra costs are added by regulations. It can be hard to execute the whole project, if the technical requirements increase the construction costs severely. This increases the importance of the size of the initial investment in the pipe system, as explained by the Senaatti's representative.

“Although the pipe collection system would pay back its investment in the upcoming decades, it is the initial investment that matters for example when government's interest subsidy is granted for a project.”
(Representative of the Senaatti-kiinteistöt)

“The preliminary calculations of the cost of joining the system, i.e. costs of the investment, have high importance in the decision-making.”
(Project manager of the Consulting Company)

However, it is acknowledged by both interviewees that the waste collection would be only one of the cost factors in the construction.

“It also needs to be acknowledged that the pipe collection system is only one of the components in these projects with value of few dozens euros. Of course it is one more, but there are statutes in the city plan which increase the cost over 100 € per square meter.” (Representative of the Helsinki City)

“Of course the waste collection produces only a small part of the overall construction costs, but small pieces tend to accumulate.”
(Representative of the Senaatti-kiinteistöt)

For the risks point of view the complexity of the project is considered to be more important than the financial issues.

“It is rather easy to estimate costs, which of course can be managed by contracts. However, it should also be considered how the construction of the pipe collection system is connected to the construction of the area, which is a huge and very complex project.” (Representative of the Senaatti-kiinteistöt)

The decisions are not based solely on the financial aspects, even though the financial aspects hold a strong position in decision-making. According to the government's real estate strategy Senaatti has to take into account the overall benefits of the state, in all of

its actions. These benefits include for example the social effects, sustainability and working real estate markets.

“Economy is one very important aspect, but it is in no account the only one, if we think about the government’s overall benefits. It is also important to remember that for the end-user it is the functionality that matters.” (Representative of the Senaatti-kiinteistöt)

After the decision is made and if the pipe collection system is expanded outside the shopping centre, the City of Helsinki and the Senaatti will obligate all the condominiums in the area to join the system. However, neither one of the public sector operators will take part in the contract itself, apart from the public buildings they are going to own in the area. Their role will comprise only of supervision of realization of the contract terms. Still, it is very likely that they will make at least some agreement with the Constructor on how the system is built and operated in a way that quality remains on the acceptable level.

“If the city or the Senaatti obligates a condominium to join the system it has at least a moral responsibility to ensure that there are not going to be problems with the system, not in the beginning nor in the long run. Surely we have to negotiate about the city’s or Senatti’s role in the decision-making of the waste collection company. It is also possible that the City or Senaatti is going to have a position on the board.” (Representative of the Helsinki City)

“I would assume that the Senaatti is going to make some sort of agreement with the constructor, because it owns the land. Later the contractual responsibilities are transferred to the new owners as the land is sold.” (Representative of the Senaatti-kiinteistöt)

7.3.3 Partnership with the private sector

The city of Helsinki has already implemented the pipe collection system in other regions. Hence, they already have some experience with the similar projects. However, these projects were solely run by the city and thus differ from the current project.

“In the earlier pipe collection projects the waste collection company is completely owned by the city of Helsinki, all of its board members are city officials and all of its loans guaranteed by the city. This time the situation differs substantially, because the city does not take part in the

financial arrangements (except for public buildings) and the city does not hold the decision-making power alone.” (Representative of the Helsinki City)

The fact that the pipe collection system project would be carried out together with the private constructor increases its attractiveness for both public operators.

“The Business complex is already committed to the system and has to pay its operation costs anyway, so all the expansions are only a bonus.” (Representative of the Helsinki City)

“Now, when the shopping centre is going to use the pipe collection system, it would be logical to expand it to the surrounding regions.” (Representative of the Senaatti-kiinteistöt)

The possibility to share the costs is clearly seen as the main benefit of partnering up with the private constructor. Additionally, benefits of the partnership would include improvements in the project management.

“For the city’s organization this is surely a lighter arrangement, because managing a pipe collection system can be rather laborious. Still, from the risk managements point of view, own is always own. There is smaller risk of having decisions that are against your interest, if you make all the decision by yourself.” (Representative of the Helsinki City)

Although the partnership allows risk transfer to the private constructor, the ultimate responsibility is seen to remain with the public sector.

“Technical risks are moderate and practically retained by the YIT or the supplier. However, if the system does not work, also the City and the land donators are quickly going to have problems. People are going to say that they were forced to join an inoperative system and demand that they should be able to detach from it. There would be a very high political pressure to accept these demands. However, it would be extremely difficult to detach from the system, because of the considerable contractual penalties. Additionally, the infrastructure in these areas is not valid for truck based collection, for example due to lack of premises where to keep the waste bins.” (Representative of the Helsinki City)

8. Discussion and conclusion

The research objective of this study was to understand the public sector decision-making in the context of partnerships with the private sector operators. The study aimed to define the main reasons for the public sector to undertake these partnerships and key issues in the decision-making practices. These questions are studied through a case study of an investment in a pneumatic waste management system in Helsinki Finland.

This study shows how by partnering with the private sector the public sector already benefits in the tendering of new investment, as private sector expertise and operational flexibility is exploited. In the studied competitive tendering a lot of the specifications were left open in the invitation to tender, which is new for the public sector. Although this new way of conducting the invitations did not necessarily derive from the private sectors participant, it clearly made it easier. It is easier to leave the specifications open in the invitations when the tendering is not bound by the public sector's procurement rules. For example, a competitive tendering organized by a private sector operator allows for the completion of tenders after they have been published.

The case also supported the view that partnership arrangements are very complex (European Union, 2003; Li Bing et al., 2005). In the studied case it is rather difficult to even specify who are the partners. First of all, the public sector operators negotiate on a project that they do not directly participate in. Additionally, the public sector does not have a direct relationship with the supplier but the private sector company handles the procurement. The Constructor is clearly one of the partners as it negotiates with the public sector and establishes the Waste collection company. However, it is not the service provider as in a traditional PPP, but acts as a purchaser together with the public sector.

According to the earlier research, public sector's decision-making is often mainly focused on the quantitative aspects (Grimsey & Lewis, 2005; Khadaroo, 2014; Shaoul, 2005). Additionally, the financial aspects usually dominate the decision-making (Shaoul, 2005; Edwards & Shaoul, 2003). The findings of this study support this view, as it is very clear that the public sector's decision will be based purely on the costs

considerations. During the competitive tendering the qualitative aspects are also discussed and highlighted, but ultimately everything is transformed into monetary terms. Furthermore, the results of the tendering presented to the public sector operators only considered the costs of the different options. It is of course possible that later in the decision-making process also other aspects are going to be considered, but at this point it seems that the decision will be purely based on the financial aspects.

It is also important that every aspect in the tenders is measurable. This is seen to increase the transparency and decrease the subjectivity in the comparison. However, literature clearly demonstrates that numbers and accounting in general are not necessary objective (Jupe, 2012; Edwards & Shaoul, 2003). In addition, all the effects of a large decision are not quantifiable or cannot be valued in money. Concentrating only on numerical aspects leaves these effects outside the decision-making. For example, pneumatic waste collection decreases the traffic and thus increases the quality of life for people living in the area. This can be one of the largest benefits of the system and should definitely be taken into account in the decision-making. However, an increase in the quality of life is highly subjective and very difficult to assess numerically.

The findings of this study also highlight the importance of the fall back position. As explained in the literature it is sometimes possible that both PPP and PSC are rejected and the public sector decides to provide the needed services by using already existing infrastructure (Heald, 2003). In the studied case PSC would have included the option for the public sector to purchase the pneumatic waste collection in the residential areas by itself. However, as the Constructor is obligated to construct the pipe system, it would not be rational to build a second system in the same area. Hence, the PSC is not even included in the selection process and the PPP is compared against the FBP i.e. the option to collect the waste by already existing truck-based system. Although this study presents a very special case where it was so obvious to replace the PSC with the FBP, the study reinforces Heald's (2003) conclusion that the omission of the FBP may lead to faulty decisions.

Replacing the PSC with the FBP changes the whole decision-making situation. The FBP often includes a completely different investment than the PSC or the PPP, as

shown in this study. Hence, the fact that the PSC is replaced by the FPB may have more diverse consequences than explained by Heald (2003). The decision does not anymore concern if the public sector should partnership with the private sector or not, but it includes a selection between two different investments. This may have significant effects on the way the situation and the decision-making should be approached. However, it does not decrease practicality of the traditional PPP selection processes or the importance of FBP in the PPP decision-making.

One of the most interesting findings in this study considers roles of the decision-making and the possibility to dilute responsibility. According to Brunsson (1990) decisions can dilute responsibility to several decision-makers over time. In the studied case, it seems that in reality it is not a single decision to expand the system to the residential areas, but a series of decisions that may eventually lead to it. It is important to notify that at the end of this study it is not yet known what the final decision is eventually going to be. However, a clear path towards the decision to expand the pneumatic waste collection to the residential areas can be seen. First, it is already determined in the construction permit that the waste from Business complex is going to be collected by the pneumatic system, although it is not profitable without the participation of the residential areas. This includes a huge risk for the Constructor, because it is not certain that the residential areas will join the system and it is very unlikely that the Constructor would take this risk if it could make the decision by itself. On the other hand, for the public operators it is important that the Business complex participates in the investment, as it also bears a substantial part of the costs. Hence, it is hard to avoid the conclusion that the purpose of the obligation is to enable the decision to use the pneumatic waste collection in the residential areas.

The public sector operators also supervise the competitive tendering and accept the selection of the supplier, although they do not officially participate in it. At the same time, it is decided to continue the negotiations on the expansion of the system outside the Business complex. Later, the decision to expand the system is considered together by the two public sector operators in the cooperation group. Only after this the matter is passed to the actual decision makers who make the final decision. However, it is emphasized by both public sector representatives that the decision has to be made

together. Hence, it is questionable if the decision made in the cooperation group can be changed, for example by the City government. One can also ask when the project is taken so far that it is also going to be completed. Thus, in this case the co-operation dilutes the decision power between operators and at the same time decision-making processes dilute it over time.

It can also be questioned how fair this arrangement is for the Constructor. First, it is obligated to a project that is not profitable without the public sector participation. During the competitive tendering it has to make sure that the result is also acceptable to the public sectors. Then after it has negotiated the contract with the supplier the public sector is going to make the decision whether the residential areas are going to be joined to the system or not. Additionally, in the negotiations between the Constructor and the public sector operators the Constructor has clearly a weaker position, as it is somewhat dependent on public sectors' participation.

The main academic contribution of this study relates to the complexity of the public sector's decision-making practises. This study shows that public sectors influence in a project may extend beyond its official participation. Hence, it is important that the studies are not limited to official negotiations or decision-making processes, but also consider what happens before them. For the future research, it would be interesting to study how often the decision-making includes a comparison between the partnership arrangement and the possibility to utilize the existing infrastructure. Additionally, the future research on PPP should be extended from basic selection between PPP and PSC decision-making to more complicated scenarios.

This study has several practical implications for the public sector. First of all, public sector should seek to purchases in partnership with the private sector. The PPP should not limit only to provision of services from the private sector, but procurement should be made together. This allows wider risk sharing and exploitation of the private sector's procurement expertise. Although the case in this study was rather unique, similar arrangements could be used for example in healthcare. This study points out that decision-making on service provision should not be limited to the comparison between the partnership arrangement and traditional procurement. Instead it is important to

consider how the already existing infrastructure could be utilized. This study also shows how flexibility in the competitive tendering can increase the quality of the tenders and allows full exploitation of late technological improvements. In addition, it tightens the price competition. Thus, it could be wise to lighten the regulation on the public procurements.

9. References

- Alonso, J.M., Clifton, J., Díaz-Fuentes, D. (2015). Did new public management matter? An empirical analysis of the outsourcing and decentralization effects on public sector size. *Public Management Review*, 17 (5), pp. 643–660
- Blanc-Brude, F., Goldsmith, H., Väilä, T. (2006). Ex ante construction cost in the European road sector: a comparison of public-private partnerships and traditional public procurement. *European investment bank: Economic and Financial Report 2006/01*
- Bovaird, T. (2004). Public–private partnerships: from contested concepts to prevalent practice. *International Review of Administrative Sciences* 70 (2), pp. 199-215
- Broadbent, J. and Laughlin, R. (2003). Public-Private Partnerships: an introduction. *Accounting, Auditing & Accountability Journal* 16 (3), pp. 332 - 341
- Brunsson, N. (1990). Deciding for responsibility and legitimation: alternative interpretations of organizational decision-making. *Accounting, organizations and society* 15 (1/2), pp. 47-59
- Carr, C., Kolehmainen, K. Mitchell, F. (2010). Strategic investment decision making practices: A contextual approach. *Management accounting research* 21, pp. 167-184
- City of Helsinki (2015). Home page of the Real Estate Department. Available in internet: <http://www.hel.fi/www/kv/en/decision-making/> Referenced 3.9.2015
- Clifton, C. Duffield, C.F. (2006). Improved PFI/PPP service outcomes through the integration of Alliance principles. *International Journal of Project Management* 24, pp. 573–586
- Cumming, D. (2007). Government policy towards entrepreneurial finance. Innovation investment funds. *Journal of Business Venturing* 22 (2), pp. 193–235

Demirag, I., Khadaroo, I., Stapleton, P., Stevenson, C. (2012). The diffusion of risks in Public-Private Partnership contracts. *Accounting, Auditing & Accountability Journal* 25 (8), pp. 1317 – 1339

Edwards, P., Shaoul, J. (2003). Partnerships: for better, for worse? *Accounting, auditing & accountability journal* 16 (3), pp. 397-421

Eisenhardt, K.,M. (1989). Building Theories from Case Study Research. *Academy of Management Review* 14 (4), pp. 532-550

Engel, E., Fisher, R.D., Galetovic, A. (2014) Economics of Public-Private Partnerships A basic guide. *Cambridge university press, New York*

European Union. (2003). Guidelines for Successful Public-Private Partnerships, Brussels.

Froud, J. (2003) The Private Finance Initiative: risk, uncertainty and the state. *Accounting, Organizations and Society* 28, pp. 567–589.

Grimsey, D., Lewis, M.K. (2002a). Evaluating the risks of Public-Private Partnerships for infrastructure projects. *International Journal of Project Management* 20, pp. 107-118

Grimsey, D., Lewis, M. K. (2002b). Accounting for Public-Private Partnerships. *Accounting Forum* 26 (3/4), pp. 245-270

Grimsey, D., and Lewis, M.K. (2005). Are Public-Private Partnerships value for money? Evaluating alternative approaches and comparing academic and practitioner views. *Accounting forum* 29, pp. 345-378

Hart, O. (2003). In complete contracts and public ownership: remarks and an application to Public-Private Partnerships. *The economic journal* 113, pp. 69-76

- Heald, D. (2003). Value for money tests and accounting treatment in PFI schemes *Accounting, Auditing & Accountability Journal*, 16 (3), pp. 342-371
- Heald, D., Georgiou, G. (2011). The substance of accounting for public-private partnerships. *Financial Accountability & Management*, 27(2), pp. 217-247
- Henjewe, C., Sun, M., Fewings, P. (2011). Critical parameters influencing value for money variations in PFI projects in the healthcare and transport sectors. *Construction Management and Economics* 29, pp. 825–839.
- Hodge G., Greve C. (2007). Public–private partnerships: an international performance review. *Public Administration Review* 67 (3), pp. 545–58
- Iossa, E., Martimort, D. (2015). The simple microeconomics of Public-Private Partnerships. *Journal of Public Economic Theory*, 17 (1), 2015, pp. 4–48
- Jupe, R. (2012). The privatization of British Energy: Risk transfer and the state. *Accounting, Organizations and Society* 37, pp. 116–129
- Khadaroo, I. (2008). The actual evaluation of school PFI bids for value for money in the UK public sector. *Critical Perspectives on Accounting* 19, pp. 1321–1345
- Khadaroo, I. (2014). The valuation of risk transfer in UK school Public-Private Partnership contracts. *The British Accounting Review* 46, pp. 154–165
- Li Bing, Akintoye, A., Edwards, P.J., Hardcastle, C. (2005). The allocation of risk in PPP/PFI construction projects in the UK. *International Journal of Project Management* 23, pp. 25–35
- Liu, J., Love, P.E.D., Carey, B., Smith, J., Regan, M. (2015). Ex-Ante Evaluation of Public-Private Partnerships: Macroeconomic Analysis. *Journal of Infrastructure Systems* 21

- Love, P.E.D., Liu, J., Matthews, J., Sing, C., Smith, J. (2015). Future proofing PPPs: Life-cycle performance measurement and Building Information Modelling. *Automation in Construction* 56, pp. 26–35
- McKinnon, J. (1988). Reliability and Validity in Field Research: Some Strategies and Tactics. *Accounting, Auditing & Accountability Journal* 1 (1), pp. 34-54
- Medda, F. (2007). A game theory approach for the allocation of risks in transport Public-Private Partnerships. *International Journal of Project Management* 25, pp. 213–218
- Massoud, M., El-Fadel, M. (2002). Public–Private Partnerships for Solid Waste Management Services. *Environmental Management* 30 (5), pp. 621–630
- Rutherford, B.A. (2003). The Social Construction of Financial Statement Elements under Private Finance Initiative Schemes. *Accounting, Auditing & Accountability Journal* 16 (3), pp. 372–96
- Shaoul, J. (2005). A critical financial analysis of the Private Finance Initiative: selecting a financing method or allocating economic wealth? *Critical Perspectives on Accounting* 16, pp. 441–471
- Shaoul, J., Stafford, A., Stapleton, P. (2012). Accountability and corporate governance of Public-Private Partnerships. *Critical Perspectives on Accounting* 23, pp. 213–229
- Tang, L.Y., Shen, O., Cheng, E.W.L. (2010). A review of studies on Public–Private Partnership projects in the construction industry. *International Journal of Project Management* 28, pp. 683–694
- Vaivio, J. (2008). Qualitative management accounting research: rationale, pitfalls and potential. *Qualitative Research in Accounting & Management* 5, pp. 64-86
- Wettenhall, R. (2003). The Rhetoric and Reality of Public-Private Partnerships. *Public Organization Review: A Global Journal* 3, pp. 77–107
- Zimmermann, J., Eber, W. (2014) Consideration of risk in PPP-projects. *Business, Management and Education* 12 (1), pp. 30–46