

Consultant and Public Client Collaborations in the Infrastructure Industry

Master's thesis in the Master's Programme Design and Construction Project Management

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CHALMERS UNIVERSITY OF TECHNOLOGY
Göteborg, Sweden 2019

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ABSTRACT

A prevailing problem in the construction industry is inefficient processes and increased project costs, in combination with a work culture characterized by conflicts and distrust. *Extended collaboration* means that involved parties agreed to work together in a structured and coordinated way towards a common goal. Through extended collaboration, projects are perceived to be more effective, result in lower project costs and generate a better end product. Previous research has primarily studied the building construction industry and the relationship between client and contractor. Extended collaboration in infrastructure projects is less studied, nor is the relationship between consultant and client. The aim of the study is therefore to investigate consultant and public client collaborations in the infrastructure industry, in order to achieve more efficient collaboration processes. The study is conducted at Rejlers and includes Trafikverket and Trafikkontoret in Gothenburg. The data collection consists of 17 semi-structured interviews with consultants and clients, represented on the Swedish infrastructure market. The qualitative research method provides opportunity for an in-depth understanding and reflection of experiences from the industry, including the respondents' different views on collaboration.

The study shows that there is a positive attitude towards extended collaboration, however, the term is intuitive and creates confusion. The experiences of extended collaboration that currently takes place display many challenges, for instance, a lack of purpose and implementation of the concept. The study therefore suggests that the meaning of collaboration should be specified and a division of two different concepts would be appropriate. The collaboration-culture should describe attitudes and values, in order to change the prevailing culture in the industry. The collaboration-process should describe a formalized process with an explicit working method for how collaboration should be implemented, with the starting point "why collaboration should take place". ISO-44001 is a proposal for such a process. The development and implementation of the concepts should be conducted by the actors in the industry, both internally within the own organisation and externally between organizations.

Keywords: collaboration, extended collaboration, consultant, public client, infrastructure, relationship

Samverkan mellan Konsult och Offentlig Beställare i Infrastruktursektorn

Examensarbete inom masterprogrammet Design and Construction Project Management

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SAMMANFATTNING

En rådande problematik i byggbranschen är ineffektiva processer och förhöjda projektkostnader i kombination med en arbetskultur präglad av konflikter och misstro. *Uttalad samverkan* innebär att parterna bestämmer att arbeta strukturerat och koordinerat tillsammans mot ett gemensamt mål. Genom uttalad samverkan kan projekt upplevas mer välfungerande, resultera i lägre projektkostnader och generera en bättre slutprodukt. Tidigare forskning studerar främst husbyggnad och relationen mellan beställare och entreprenör. Samverkan i infrastrukturprojekt är inte lika väl studerat, inte heller relationen mellan beställare och konsult i samverkansprojekt. Syftet med studien är att undersöka samverkan mellan konsult och offentlig beställare inom infrastruktur, för att uppnå effektivare samverkansprocesser. Studien genomförs på Rejlers och innefattar Trafikverket och Trafikkontoret i Göteborg. Datainsamlingen omfattar 17 semi-strukturerade intervjuer med konsulter och beställare, representerade på den svenska infrastrukturmarknaden. Valet av kvalitativ forskningsmetod ger utrymme för fördjupad förståelse och en återspeglning av erfarenheter från branschen, inklusive respondenternas olika uppfattning om samverkan.

Studien visar att det råder en positiv inställning till uttalad samverkan men begreppet är också intuitivt och skapar förvirring. Erfarenheterna av den uttalade samverkan som i dagsläget sker visar på många utmaningar, bland annat avsaknad av syfte och genomförande av uttalad samverka. Studien föreslår därför att innebörden av samverkan bör specificeras och en uppdelning av två skilda begrepp vore lämpligt. Samverkanskulturen bör beskriva attityder och värderingar i syfte att förändra den rådande kulturen i branschen. Samverkansprocessen bör beskriva en formaliserad process med ett uttalat arbetssätt för hur samverkan ska implementeras, där den centrala utgångspunkten bör vara 'varför samverkan ska ske'. ISO-44001 är ett förslag på en sådan process. Utveckling och implementering av begreppen bör arbetas fram av aktörerna i branschen, både internt inom den egna organisationen och extern mellan organisationer.

Nyckelorden: samverkan, uttalad samverkan, konsult, offentlig beställare, infrastruktur, relationer

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Malin Eriksson & Ellen Petersson

1 Introduction

In this chapter, the background to the inquired issue is presented in order to introduce the reasons for the chosen research topic. The aim of the thesis and three research questions follow, and the delimitations of the study are presented.

1.1 Background

The construction industry is often portrayed as inefficient and conservative, with a working culture influenced by conflicts and distrust between involved parties (Gadde & Dubois, 2010; Kadefors, 2004). Collaboration is commonly discussed in the construction industry as a possible solution to these circumstances (Bond-Barnard et al., 2017; Bresnen, 2007; Errasti et al., 2007). Research on collaboration within the building construction industry focuses on the relationship between client and contractor. However, the concept of collaboration in infrastructure projects are not as well studied, neither is the relationship between client and consultant.

According to the report “BESK - Beställarens Effektiva Samverkan med Konsult” (Vägverket, 2009), clients have experienced a receding level of quality of delivered services from consultants, caused probably by a lack of common visions between involved parties. Another problem mentioned in the report is insufficient data in the project specifications regarding delivery of service. The client often knows “what they want” but not “how they want it”, which can lead to difficulties in the procurement phase or misunderstandings later in the process. There is also a deficiency regarding consultant involvement in the construction phase of a project, which can result in inadequate continuity of knowledge transfer between project development and project execution. Effective collaboration is suggested to create openness, respect and trust between involved actors for improved understanding of the project vision (Vägverket, 2009).

Collaboration always occurs between different roles and organisations in one way or another. Different concepts within collaboration have emerged in the construction sector (Construction Industry Institute [CII], 1991; Wondimu et al., 2016; Gadde & Dubois, 2010). For example, partnering is widely used in the industry, both in literature and on the construction site (Kadefors & Eriksson, 2014). Collaboration concepts commonly refer to a durable commitment between two or more actors, in order to achieve a specific objective and to increase the collective performance (CII, 1991; Wondimu et al., 2016; Gadde & Dubois, 2010). This can be done by involving different actors early in a project in order to work as a team to support planning and buildability. Continuous interaction is required as well as appropriate technical solutions, logistics and administrative routines. Collaboration can result in benefits, such as, improved efficiency and quality, contributing to better understanding among involved parties, as well as lowering the risk of adversarial relationships. In order to distinguish between different concepts, the term extended collaboration is used in the thesis. Extended collaboration refers to when collaboration is an agreed process between organisations, that is coordinated in a structured manner towards common goals.

Extended collaboration can generate a better working environment including culture and ethics in the construction industry (Gadde & Dubois, 2010), which furthermore can result in more efficient processes regarding saving resources in terms of time, money

and quality (Bond-Barnard et al., 2017). These parameters are of importance in a perspective of sustainability.

Even though there is common belief expressed in literature concerning the benefits of extended collaboration, there is also an oppositional view (Bresner, 2007; Gadde & Dubois, 2010). Examples of this are difficulties with implementation of concepts, the challenge of achieving desired outcomes and the measurement of them (Gadde & Dubois, 2010). Other issues mentioned are time consuming processes, conflicts and lack of commitment of involved parties (Bond-Barnard et al., 2017). However, there is still an interest from the construction industry for studies concerning collaboration.

The thesis is performed in cooperation with Rejlers, Trafikverket and Trafikkontoret because of a shared interest in examining extended collaboration in the infrastructure industry with focus on the relationship between consultant and public client. Rejlers offers technical consultants services in several areas of specialities, among them infrastructure. Rejlers is involved in projects where the clients require extended collaboration, which has introduced a new way of working. Contractual documents, specified from the client, regulates to what extent the work should be collaborative. Depending on the project, Rejlers can be procured as consultants, sub consultants or part of a consortium. By including two public infrastructure clients in the study, it provides the opportunity to observe differences as well as confirming similarities concerning extended collaboration, and what outcomes it can generate. Since the clients in the thesis are public, more efficient processes could be result in reduced costs which could have a positive societal effect.

1.2 Aim of the thesis and research questions

The aim of the thesis is to investigate consultant and public client collaborations in the infrastructure industry, in order to achieve more efficient collaboration processes and contribute to improved understanding of extended collaboration in projects. Three research questions are defined:

- What is the opinion about collaboration?
- How is the working culture and the roles of consultant and client perceived in the infrastructure industry?
- How is extended collaboration experienced?

1.3 Delimitations

The study is limited to consultants and two public clients in the Swedish infrastructure industry, therefore is not the contractor perspective included. The theory of the thesis is focusing on seven selected factors that are considered important for collaboration in the literature. Communication and trust are important aspects of collaboration and the thesis acknowledge that but is not focusing on these aspects.

2 Theory

In this chapter, the theory is presented. Firstly, an introduction to the collaboration is presented, in which theory regarding definitions, important factors and layers of collaboration is introduced. Secondly, an introduction to the construction industry and the roles of consultant and client is presented, in order to understand the context of collaboration in the infrastructure industry. Thirdly, collaboration within the construction industry is elaborated on.

2.1 Introduction to Collaboration

In this section the term collaboration is presented as well as different definitions of the concept within the construction industry. Seven factors of importance for collaboration are presented. Finally, by a short presentation of three levels of collaboration are also discussed.

2.1.1 The word collaboration and its concepts

The meaning of collaboration is intuitive and self-explaining to most of us. Researching on the topic on the other hand eventuate different perceptions and nuances of the concept (Dietrich et al., 2010; Chan et al., 2003; Junky, 2018; Cheung et al., 2003). Although the concept has no precise definition, it frequently appears in projects and organizations.

There are many definitions of the word ‘collaboration’, Oxford Living dictionaries (“Collaboration”, 2019), for example, defines collaboration as the action when someone is working together in order to produce something. While Svenska Akademiens ordbok [SAOB] (“Samverkan”, 1964) defines collaboration as a coalition of people that work towards a common goal and doing so by coordinating each actor’s activity according to an agreed plan. Collaboration is, according to Junky (2018) and Dietrich et al. (2010), a relationship between individuals that occurs when they work together on an assigned task or in a project. These individuals combine their knowledge and skills in order to reach a mutual goal. Dietrich et al. (2010) state that collaboration can occur not only between individuals but between organisations as well. The shared goal can be achieved by sharing knowledge, learning and having a mutual understanding and agreement.

Partnering is a term for a collaborative way of working which are frequently used in the Swedish construction industry but also internationally. In the same way as collaboration can differentiate in meaning, partnering also occurs in different manners. For example, Chan et al (2003) state that partnering is the simple process for creating good business relationships between the project partners. Cheung et al. (2003) describe partnering as an attempt to develop non-conflict-filled business relationships between project participants through mutual engagement and open communication. Other definitions describe partnering as a concept consisting of components such as common goals, trust, commitment, conflict resolution techniques, transparency and continuous improvement (Naoum, 2003; Cheng & Li, 2004; Nyström, 2005; Chen and Chen, 2007). In the construction industry the term ‘collaboration’ is often stated in the contractual document as a formal way of working collaboratively (Kadefors & Eriksson, 2014). Both collaboration and partnering are concepts that are frequently used

in the construction industry, however, there is a confusion regarding the usage of these concepts. According to the definitions mentioned above collaboration can be described as an action or a process that involves individuals or organisations who work together towards a shared goal by combining knowledge and skills (Chan et al., 2003; Cheung et al., 2003; Dietrich et al., 2010; Junky, 2018). Collaboration does always occur between different roles and organization in one way or another. As already mentioned, is term ‘extended collaboration’ used in the thesis to refer to when collaboration is an agreed process between organisations, that is coordinated in a structured manner towards common goals.

2.1.2 Factors of collaboration

As mentioned in the previous paragraph distinctions about the word collaboration and its concepts are frequently occurring. When it comes to defining collaboration in terms of underlying factors in literature the same phenomenon occurs. In a report by Kadefors & Eriksson (2014) on the topic collaboration focused procurement strategies in construction, is 16 factors identified as a base for evaluating collaboration. The report BESK by Vägverket (2009) declares five important conditions. A thesis by Hagberg & Hjelt (2011) state that for a successful partnership five factors is of importance. A book by Bennett and Jayes (1998) explains Partnering as grounded on seven pillars. Mentioned literature only covers a part of all definitions and a total consensus have not been found. An article by Bond-Barnard et al. (2017) describes six factors that are of importance. In the thesis a selection of seven factors is made based on inspiration from the above-mentioned studies. The factors are the following: *Relationships, Coordination, Proximity, Commitment, Conflict, Incentives and Transparency.*

2.1.2.1 Relationship

Relationship can be defined as the opposite to a feature that is added to objects individually, a relationship is something that occurs between two or more objects (“Relation”, 2019). However, in business, relationships may be based on a project or task which in turn arranges a foundation for collaboration (Bond-Barnard et al., 2017). Business relationship are either built on one single project or maintained and developed over time and several projects. In the construction industry, relationship tend to be irregular and intermittent (Gadde & Dubois, 2010). Historically a culture of avoiding dependences throughout business relationships are connected to experienced pitfalls. Collaborative processes and systematic efforts can improve the relationship between persons and organizations and enhance the joint performance (Bond-Barnard et al., 2017; Gadde & Dubois, 2010). Fundamental aspects of building relationships are trust, dedication to a common goal and the mutual understanding of each other’s individual values and expectations. According to Bresnen and Marshall (2000) there is a criticism that questions the possibility of building trust through formalized processes and systems.

2.1.2.2 Coordination

The quality of teamwork performance can be determined by the interrelatedness and status of individual contributions, and it is important that these individual contributions are harmonized and synchronised (Hoegl & Gemuenden, 2001). Therefore,

coordination is a necessity for project teams in order to achieve a high quality of collaboration and effective interaction (Hoegl & Gemuenden, 2001; Dietrich et al., 2010). Hoegl and Gemuenden (2001) state that the meaning of coordination is for project teams to agree upon a common goal as well as schedules, budgets and working structures. Dietrich et al. (2010) suggest that coordination is a process in which knowledge is integrated. This in order to assist the project team to get a common understanding about the projects goals and what means are necessary to achieve the goals. According to Martin-Rodriguez et al., (2005 in Bond-Barnard et al., 2017) coordination mechanisms such as protocols, standardised document and policies may be beneficial for the collaborative process.

2.1.2.3 Proximity

According to Bond-Barnard et al. (2017) physical proximity in a project can be defined as the physical distance between members in a project or closeness in space and context of a project. Several studies (Dietrich et al, 2010; Pinto et al., 1993; Kadefors & Eriksson, 2014) have shown that proximity can have a positive effect on collaboration, by enabling informal communication and to generate supportive group relationships as well as a mutual understanding among team members. Relocating key personnel to a shared project office can be a beneficial tool for team building, which can create an environment based on openness, respect, consensus and knowledge sharing (Kadefors & Eriksson, 2014). According to Hoegl and Proserpio (2004) the proximity does not affect a team's ability to fully utilize each member's potential. The same study suggests that proximity between team members can result in a higher number of spontaneous interaction and can also support the coordination process.

2.1.2.4 Commitment

Commitment in a project can be defined as how well team members accept and believe in the goals and values of a project (Hoegl, et al., 2004). Other characteristics of commitment are how willing the team members are to engage in a project and put in the efforts needed to achieve a successful project. Commitment can also refer to the team members' desire to continue to be a member of the project. Commitment can influence the quality of collaboration, since it can make an actor favour collaborative tasks (Dietrich et al., 2010). Andersen et al. (2006) find that strong project commitment is one factor that is important when improving the management's efforts to deliver a product on time and budget. Commitment can occur when team members are interested and proud in participating in the project and in the development of it (Hoegl, Weinkauff & Gemuenden, 2004). It is also important that stakeholders are involved early in the planning of a project in order to gain commitment to the project's objectives (Andersen et al., 2006).

2.1.2.5 Conflict

There are different views on conflict, it can either be seen as dysfunctional or as functional (Clegg et al., 2016; Vaaland, 2004). If a conflict is regarded as dysfunctional, it should be tightly controlled, eliminated and avoided, in order to improve relationships. However, if a conflict is regarded as functional, it has a positive effect on relationships. Both Clegg et al. (2016) and Vaaland (2004) state that conflicts are

normal and a natural phenomenon in organisations and in well-developed relationships and can occur both in an intra- as well as inter-organisational settings. Vaaland (2004) suggests that it is not necessary for conflicts to be removed since conflicts can clarify the goal structure, give insights about the other parts relational attitudes and improve relationship. Clegg et al. (2016) also state that conflicts can result in productivity and other positive outcomes, if the “right” kind of conflict occur. It is, however, important that conflicts are managed and that processes for effective conflict handling are available (Vaaland, 2004). Otherwise can a conflict easily end up in a downward spiral, which can lead to termination of a relationship. Nevertheless, conflict can have a positive effect on collaboration, and by teambuilding and congruent goals can dysfunctional conflicts be weakened (Dietrich et al., 2010; Vaaland, 2004).

2.1.2.6 Incentives

Incentives can be defined as circumstances that stimulate certain activities (“Incitament”, 2019). Economic incentives are often used in collaborative agreements (Byggherrarna, 2010). However, there is a divided opinion regarding the effect related to economy incentives (Bresnen & Marshall, 2000; Kadefors & Eriksson, 2014). When connecting incentives to motivation the intrinsic and extrinsic perspectives are added. An extrinsic incentive can be economical and does not have the same practical effect as an intrinsic motivation which often relates to the interest in the task and the opportunities for personal development (Ryan & Deci, 2000). Aligning incentives between involved project actors is stated as one of the most important issues for a smooth collaboration (Dietrich et al., 2010). Incentives can therefore work as a guarantee that the joint interest is collected as well as connected to the project goal. Applying incentives can affect the direct motivation and indicate that a company initiates to work with collaboration (Kadefors & Eriksson, 2014). Reward systems, however, add the risk of what is not explicitly measured and rewarded, is not performed. Other difficulties are connected to how and when economy incentives should be paid and the flexibility of changing incentives along the project phases, in case of changes in the project.

2.1.2.7 Transparency

Transparency and openness are crucial agreements in extended collaboration (Naoum, 2003; Cheng & Li, 2004; Nyström, 2005; Chen and Chen, 2007). Partnering is sometimes described with the mindset of "project AB" that must permeate everything (Byggherrarna, 2018). The involved parties jointly carry out the contract. Depending on the contractual agreements the shared information varies (Byggherrarna, 2010). In general, both management systems and economic systems is shared with a disclosed and pre agreed profit. A commonly used procuring model for public clients is a combination of fixed price for profit and administration, together with a target cost stimulated by economic incentives (Byggherrarna, 2018). The target cost can thus be based on production costs, which is easier to follow up by project managers, who can relatively easily follow up the actual input of resources in the terms of personnel, materials and machines.

2.1.3 Layers of collaboration

Sharing information is one of the main reasons for collaboration, and information exchange occurs within different perspectives, such as interpersonal, intra-organisational and inter-organisational (Yang & Maxwell, 2011).

Interpersonal: What occurs in the individual cluster within a group or department (Yang & Maxwell, 2011). This type of exchange is often used as a sort of confirmation of new obtained information between persons. According to Yang and Maxwell (2011) different researches have investigated obstacles related to interpersonal information sharing e.g. dignity of information, privacy and the exclusiveness within the thinking of information as power.

Intra-organizational: What occurs between departments within an organization (Yang & Maxwell, 2011). The grounds for intra-organizational information sharing are formed by the structure of a company in combination with its culture and norms. In a more extended view factors as incentives, power games, social identity and networks, and trust are involved. Achieving the most integrated level of information exchange relates to the members belief.

Inter-organizational: What occurs between organizations or agencies has become more important (Clegg et al., 2016). There are several reasons why organisations might collaborate, Oliver (1990) in Clegg et.al (2016) refers to the following six:

- Legal or regulatory requirements can be fulfilled.
- Exercise control and power over the other organization may give a possibility to influence e.g. a geographical or business area.
- To form an alliance from which can be beneficial for both.
- Organizational improvement can be reached throughout collaboration performance.
- Maintain a level of stability for not becoming unreachable.
- Legitimize their own business.

2.2 The Infrastructure industry and the roles of consultant and client

The Swedish construction industry is characterized by low converting pressure for change and rationalization compared to other domestic industries (Dir 2002:24). To some extent, the structure of the construction sector has changed in terms of the relationship between the client and supplier. The Swedish Competition Authority conducted a questionnaire survey in 2018 (Konkurrensverket, n.d.) to persons working in construction industry as: consultants, on site workers, suppliers of building materials and crushing operators. The survey was answered by 1206 people and 49% of the respondents believe that there are cartels in their own industry and 71% of those believe that there is corruption. In the infrastructure industry, the numbers were higher, 53 % believes that there are cartels and 74 % believes that there is corruption in the industry. Two public investigations "Skärpning Gubbar!" in 2002 (SOU 2002:115) and the follow-up "Sega Gubbar?" in 2009 by Statskontoret, were carried out and resulted in criticism of the construction industry. The investigations aimed to find arrangements to break structures that counteract effective competition and price transparency, counteract the use of undeclared workers, strengthen building expertise and clarify responsibility for major contract work (SOU 2002:115; Statskontoret, 2009). The

criticism was linked to not being sufficiently innovative and not inclined to renewal, but also due to poor productivity development.

In a building project, the actors' roles are rather standardized and associated with a strong culture and value preferences (Björklöf, 1986; Kodeda, 1992 in Kadefors, 1995). The standardized process can be described as a sort of play with constructed characters meant to act in a certain manner, where the role seems to have important contribution to the individual. The most common consultant services are architects; structural engineers; geotechnical engineers; heating, ventilation and sanitary engineers; electrical engineers and building management consultants (Kadefors, 1995). More specialized services do also occur. Even if the firm performs several specialties within the organization, is usually contracted to one specific task. Consultants are claimed by Koch (2004) to be limited by the "tyranny of projects" related to the single project economy. The role is also described to perform under conditions of continuous pressures from structural, organizational, professional and individual sources. Divided interest from corporate management initiatives and project teamwork do somehow impairs both knowledge transfer but also possibilities for team working.

Previously, clients had greater knowledge of construction and the work were performed for own long-term management and administration (Dir 2002:24). At present, the industry consists of a few nationwide construction companies with own subcontractors and suppliers. These companies produce construction that are left to someone else to manage, often to tenant-owner associations or public managers. However, in the thesis the client is both purchaser and manager. Conducted from the urban building office's report "Sega Gubbar" (2009) highlights the client's perspective of procurement as bureaucratic and complex, the public procurement law is considered to hinder collaboration and innovation. However, the interest for collaborative agreements has increased in popularity.

According to Kadefors and Eriksson (2014) the infrastructure industry has received some political and official support for collaboration efforts. The report "Utökad Samverkan - en svensk modell för anläggningsbranschen" by the program Förnyelse i Anläggningsbranschen [FIA] was first published 2003 on the initiative of Vägverket and Banverket. It consisted of a collaborative initiative to gather the Swedish construction industry. Some intentions brought up in the report (FIA, 2006) were the international development for construction and civil engineering projects goes towards more collaboration-oriented implementation form, between all parties throughout the process. Both purchaser and the supplier would experience an infrastructure sector with improved image and increased profitability and cost efficiency.

"BESK - Beställarens Effektiva Samverkan med Konsult" is a West Swedish initiative by Vägverket and Banverket in 2009 that aims to arise challenges and make the collaboration between consultant and client more efficient. Both consultant and client perspectives are brought up. The reasons and the responsibility why shortcomings arise claims to be varied and belongs to both client and consultant. The shortcomings brought up were e.g. lack of quality, competence issues, runaway cost and time, and non-functional relationships.

2.3 Collaboration within the infrastructure industry

The infrastructure industry in Sweden is not as well studied as the building construction industry in terms of extended collaboration. With that in mind together with previous

theory, this section is a short presentation of what have been done so far in the infrastructure industry. Two reports and an ISO-standard are of special interest. The first report is BESK by Vägverket in 2009, which pays special attention on the consultant and client relationship for a better collaboration. The second report is “Utökad Samverkan - en svensk modell för anläggningsbranschen” by FIA (2006) which introduces a model for collaboration. Lastly is a short introduction of the ISO-standard SS-ISO 44001 “Collaborative business relationship management systems -- Requirements and framework” (Svenska Institutet för Standarder [SIS], 2017) presented, in order to provide as an example of standardized process that aims to improve the collaborative business relationships in the industry.

The study focuses on the collaboration between consultant and client even though, the contractor still participates in some extent. Deliveries from the consultant to the client is often applied to the contractor. Nevertheless, the consultant does not often participate throughout the project's implementation, which means that there is no continuity between the design phase and the construction phase (Vägverket, 2009). However, the consultant's knowledge of the project can be useful to both contractor and client (Vägverket, 2009).

2.3.1 Insights from the report BESK

In the BESK report the foundation for extended collaboration is connected to the procurement of consultants (Vägverket, 2009). The procurement of consultants seems to be more complex than other areas, eg. contractors, where it is easier to specify what to order. In successful procurement, it is essential to be able to specify what is meant to be bought. Public clients are committed to procure actors in accordance to the Swedish law of Public Procurement Act, as well as the European directive, which are both connected to threshold amounts (Konkurrensverket, 2019). Therefore, both Trafikverket and Trafikkontoret carry the responsibility regarding procurement, evaluation, contracting and implementation (Vägverket, 2009).

From the consultant's perspective it is desirable to overhaul the thresholds for consulting procurement on framework agreements (Vägverket, 2009). If the boundaries were changed, a larger number of smaller assignments could be procured on framework agreements which could result in time savings for both the client and the consultant. When procurement is based solely on the lowest price the hourly rates and wages are pushed to the limit. Therefore, the consultants request a procurement based on negotiation and/or competence and new procurement forms. Procedures that the client will focus on are listed in BESK (Vägverket, 2009) as:

- Clear specifications
- Develop the tender evaluation
- Try new procurement forms

Furthermore, connected to the development and proposal for changes regarding effective forms of collaboration between the client and the consultant five areas are brought up (Vägverket, 2009):

- Efficiency of current meeting forms
- Development of new forms of meeting
- Implementation of planning preparations
- Object-adapted participation of the consultant in the construction phase
- Experience feedback

2.3.2 Insights from FIA

The report “Utökad Samverkan - En Svensk modell för anläggningsbranschen” (FIA, 2006) presents a number of recommendations that could be beneficial to implement in extended collaboration projects within infrastructure projects. Therefore, some of these recommendations are shortly presented in this subsection. When extended collaboration is being used in a project, the liability rules stated in the Swedish contracts AB04, ABT06 and ABK09 should be followed without compromise.

Joint organisation with process management: In a project where extended collaboration is being used, a joint organisation should be established (FIA, 2006). However, extended collaboration requires that key personnel involved are committed and take part in the collaborative activities. Therefore, it is important to choose the “right” individuals to to the organisation. Characteristics such as openness and mutual respect are vital for extended collaboration to succeed. It is also important that information regarding different roles and responsibilities are clarified and defined in both the client’s and the suppliers’ organisations.

Collaboration group: The collaboration group is part of the joint organisation, whose main duties are to coordinate activities, resources and time schedules as well as develop a goal formulation and do follow ups (FIA, 2006). The composition of the collaboration group is adapted based on the characteristics of the project, but it is suitable that the group consist of representatives from both client, consultants, contractor and important subcontractors.

Steering committee: The steering committee has the responsibility to create forums where meetings and dialogues concerning collaboration can occur, as well as manage questions regarding the agreed commitments (FIA, 2006). The steering committee also have the task to follow up on project development, manage changes in the organisation as well as managing conflicts, if these are not solved by the collaboration group.

Collaboration leader: In extended collaboration a collaboration leader should be involved and act as a support to the project concerning questions about collaboration (FIA, 2006). It is advantageously that the collaboration leader is an external consultant, however in smaller projects this role can be delegated to a member from one of the involved organisations. The collaboration leader’s role is to participate in the planning and leading of seminars and meetings regarding goal formulation, to monitor the development of the group. Experiences have shown that the need for a collaboration leader is greatest in the beginning of a project.

Workshops: Workshops are meetings for all involved actors where questions regarding the whole of the project are discussed without focus on technical or economical details (FIA, 2006). These workshops are meant for dialogue concerning mutual goals, work

environment, work processes, collaboration, relationships, communication and the management of the project. The workshops should be held outside of the workplace and the duration of it should be long enough to provide time for informal discussions.

Goal management: Goal management is important for a successful project since it increase the effectiveness of a work group (FIA, 2006). If the goal is clearly defined and shared between the team members it can generate motivation and commitment in the project. Goal management can also strengthen the trust between involved parties and make it easier to handle conflicts. With that in mind it is crucial that the involved parties in extended collaboration projects set aside time to create a consensus regarding the goals of the project.

Risk management: Risk management is important in infrastructure projects since it influences the accomplishment of the project (FIA, 2006).

Conflict Resolution methods: Conflicts are necessary to work through, for the project organisation to work more effectively (FIA, 2006). Therefore, communication and openness between involved parties and groups are of importance in projects, since it can result in fewer conflicts. A conflict should be used to contribute to a better decision for the project, therefore should a conflict be managed as close to the source as possible and early on. In a project with extended collaboration should the collaboration group establish a routine for managing conflicts.

Continuous evaluation and improvement: Evaluation and self-criticism are two characteristics for effective groups, since people are motivated by reaching goals and receiving feedback on their work (FIA, 2006). Members of a project are more willing to take on responsibility, do a better job and adapt if the project plan is known and the possibility to review the own accomplishments is available. Routines for monitoring and evaluation should be established in order to follow up on goals and project progress.

Transparency in matters of a common nature: High level of transparency concerning question of common nature increases the possibility to build trust among involved parties as well as compare and discuss different solutions (FIA, 2006). The level of transparency depends on which payment method is chosen in the contract. If fixed price is chosen, the obligations to be transparent about costs in the project are low. However, if variable price is agreed, the client is obliged to present the budget and the suppliers need to declare their estimates and costs. By doing so, the budget becomes a common tool to control the economic situation and quality of the project, since the involved parties can openly discuss the economic impacts of choices and decisions.

2.3.3 Introduction to ISO-44001

The standard SS-ISO 44001 was presented by the International Organisation for Standardisation in 2017, based on the British standard called BS 11000 developed in 2006 (SIS, n.d.). SS-ISO 44001:2017 aims to act as a framework to improve collaborative business relationships both between and in organisations. The standard can be implemented in both public and private organisations of all sizes and applied to different levels. For example, single application, an individual relationship, multiple identified relationship or full application organisation-wide (SIS, 2017).

ISO 44001 is illustrated by eight stages in the lifecycle model for collaborative business relationships. The eight stages in the standard are shortly described as below (SIS, 2017, p. 54 Annex G).

1. *Operational awareness*: establishing the organization's propensity for collaboration;
2. *Knowledge*: evaluating specific collaborative benefits and business case;
3. *Internal assessment*: assessing the organization's capability to collaborate;
4. *Partner selection*: establishing an appropriate selection process;
5. *Working together*: establishing a joint governance model for collaboration;
6. *Value creation*: establishing a joint process for continual improvement;
7. *Staying together*: managing, monitoring and measuring the relationship over time;
8. *Exit strategy activation*: establishing a joint approach to disengagement and/or future.

3 Research designs and methods

In this chapter the research designs and methods are presented. The chapter begins with the research method, followed by the literature review. Thereafter the empirical inquiry is presented, in which the processes regarding interviews and observations are described. Finally, codes of ethics and quality of study are presented.

3.1 Research method

Qualitative research method has been selected for the thesis since the aim relates to the description of individuals' experiences and views of collaboration (Ahrne, 2011). The empirically collected data is descriptive and subjective, and used for exploring the phenomenon (Malterud, 2014). An in-depth study based on selected persons in three organisations was used to conduct the empirical inquiry through semi-structured interviews. The semi-structured interview was considered appropriate to the open area of investigation in order to give the interviewees the opportunities to express themselves in a personal way. The interviews were preferably performed face to face. Efforts were put on encouraging the interviewees to develop reasoning and describing examples.

The research process has been inductive grounded based on observations and empirical data collected from interviews. Observations have been made throughout the working process, due to the ability to work in close proximity to the consultant firm. The process has been inspired by Bryman & Bell's (2015) steps in carrying out the research process:

- Define research question
- Select relevant subject and site
- Collection of data
- Interpretation of data
- Conceptual and theoretical work
- Writing discussion and conclusion

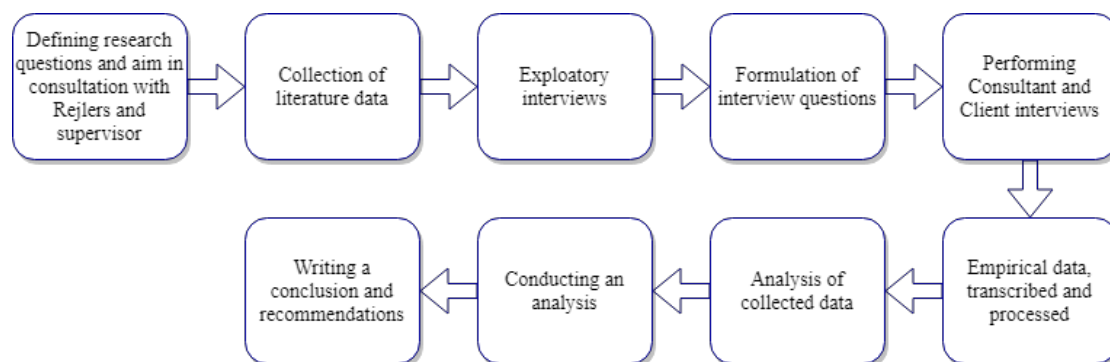


Figure 3.1 The process of the thesis.

Applying this mindset resulted in a process like Figure 3.1. However, each phase has during the work been adjusted. Firstly, the research questions were formulated in consultation with supervisor and consultants at Rejlers. Then the search began for relevant literature to understand the important components within the term collaboration but also of the roles of consultant and client in the infrastructure industry. It turned out to be difficult to find information about the roles why two exploratory

interviews were conducted. The first one with a professor at Royal Institute of Technology who is well quoted on the subject. The other one with a semi working professor and strategist from Trafikverket and Chalmers University of Technology to form an idea of the structural changes that has been made at Trafikverket. This because Trafikverket represents the largest proportion of the industry and is also an important customer for Rejlers. Then it was time to formulate interview questions based on the theory and the exploratory data collected. The interviews performed are explained in detail below. The questions were formulated in Swedish to make it easier for the participants to express themselves freely on the language they are used to. However, this meant a transcription and translation of the answers to English before a proper analysis could be carried out. An overview analysis was kept latent during the time the data was processed. Finally, conclusions and recommendations could be formulated. As a clarification, all the steps in the process meant new discoveries that to some extent affected and changed details in previous work.

3.2 Literature Review

A literature review was conducted in order to get an academic perspective on the topic. The following scientific databases were used to gather relevant literature; Summon at Chalmers University of Technology and Google Scholar. Search words connected to the topic of the thesis were used to find relevant research material, the following words were used; Collaboration, Extended Collaboration, Partnering, Culture, Relationship, Proximity, Conflict, Coordination, Commitment, Incentives and Transparency.

In order to frame the topic, the master thesis process began with a literature review, which continued during the entire process as new insights were gathered. In this study books, articles and reports have been used. Two reports were frequently used BESK (Vägverket, 2009) and FIA (2006). The mentioned literature is applied and specific to the Swedish infrastructure industry, which entails specific concepts. These concepts are chosen to be remained in Swedish in the thesis to reduce misunderstanding. These are *Samverkan Bas*, *Samverkan Hög* and *Renodlad Beställare*.

- *Samverkan Bas*: extended collaboration process towards both consultant and contractor
- *Samverkan Hög*: extended collaboration process towards contractor, applied in ten ongoing projects.
- *Renodlad Beställare*: Trafikverket's term for defining their new client role, which intends to be more professional, with a larger focus on purchasing functionality, instead of managing projects.

3.3 Empirical inquiry

To be able to get an understanding on how consultants and public clients collaborate an empirical inquiry was performed. The empirical inquiry was based on interviews and observations in order to get a better understanding of the experiences of extended collaboration. The researchers of the thesis were situated at Rejlers' office in Gothenburg on a daily basis during the entire process. Being located at the office gave an opportunity to conversing with employees as well as take part of the company's culture.

3.3.1 Interviews

According to Kvale (1996) there are seven steps for interviewing: thematizing, designing, interviewing, transcribing, analysing, verifying and reporting. The first step (thematizing) of the interview process was to define the aim of the interviews in relation to the research questions that was chosen. The purpose of the interviews was to gather experiences and opinions regarding collaboration and the relationship between client and consultant.

After defining the aim with the interviews, a plan and design for how to perform the interviews was made which is step two, designing (Kvale, 1996). The goal with the interviews was to collect useful data and experiences from both consultants and public clients. Therefore, an interview guide was formulated with 55 questions divided into eleven different areas: background of the interviewee, about the relationship and culture in the industry, collaboration, relationship, coordination, proximity, commitment, conflict, incentives, transparency and, changes and improvements (see Appendix for interview guide). The interview guide was semi-structured since the aim of the thesis was to investigate the broad topic, which allowed the individual and subjective aspects to be central (Bryman & Bell, 2015).

In the thesis 15 persons from both Rejlers, Trafikverket and Trafikkontoret were asked to participate (see Table 3.1), they were chosen based on purposive sampling (Bryman & Bell, 2015). This means that in order to get a broader understanding of the topic, interviewees were selected to get a variation of opinions and experiences and still be relevant to the research questions. The selection of interviewee was made in consultation with Rejlers. The six interviewees from Rejlers have different backgrounds, age and work-life experience, but work as assignment managers within infrastructure projects. Some of the interviewees also have top management responsibilities. The five interviewees from Trafikverket also differ in age, work-life experience and background. However, their roles at Trafikverket varies. Three of them work as project managers with experience of extended collaboration in some form. One works as a project engineer and one strategist. The strategist has deep knowledge about Trafikverket and extended collaboration. Four interviewees were selected from Trafikkontoret, this due to the organisations limited experience of extended collaboration. However, the interviewees from Trafikkontoret provided a variation of work-life experience, age and background. Two interviewees do not work at either Rejlers, Trafikverket or Trafikkontoret but were asked to participate due to their interest and knowledge of collaboration in the industry. The Professor works at Royal Institute of Technology and has extensive knowledge of collaboration. The Specialist works at another consultant firm and been involved in the project to develop a Swedish version of the standard SS-ISO 44001 and has a great interest in collaboration.

Table 3.1 The list of interviewees

Names	Organisation
Consultant A	Rejlers
Consultant B	Rejlers
Consultant C	Rejlers
Consultant D	Rejlers
Consultant E	Rejlers
Consultant F	Rejlers
Project Manager A	Trafikverket
Project Manager B	Trafikverket
Project Manager C	Trafikverket
Project Manager D	Trafikkontoret
Project Engineer	Trafikverket
Program Manager	Trafikkontoret
Top Manager A	Trafikkontoret
Top Manager B	Trafikkontoret
Strategist	Trafikverket
Professor	Royal Institute of Technology
Specialist	Consultant Firm

The third step is interviewing. As mentioned before, 17 persons were asked to participate in this study. Two of them asked to be interviewed together due to convenience from their part. The interviewees were mainly done face-to-face, with two exceptions due to reschedule and different location were held over phone. The interviews with the consultants at Rejlers were performed at Rejlers' office in Malmö and Hässleholm, since most of the consultants who work with infrastructure is located there. The other interviews were held at the interviewee's office and two interviews were held at Rejlers' office in Gothenburg. Each interview was held in Swedish and was between 75-120 minutes long, except one interview which was 240 minutes long because of the interview with the two interviewees. Before the interviews were conducted, some of the interviewees ask to receive the interview guide in advance. The guide was sent to them over email. Exploratory interviews were performed (Strategist, Specialist and Professor), as a tool to explore other areas of interest to the topic and the current situation and roles in the industry. All interviews were recorded, and some

reflective notes were taken during the time. Both researchers participated during all interviews and asked complementary questions.

When all interviews were conducted, they were listening through again and parts of interest were transcribed since the 17 interviews resulted in an extensive amount of data. The Swedish transliteration resulted in over 100 pages. The researchers read through the transcribed material in order to identify relevant data. The analysis was done based on three main topics: General opinions about collaboration, Work culture and roles in the industry and Experiences of extended collaboration. The analysing approach was condensation in accordance with Malterud (2014), which started with an overall impression, next step was to identify and sorting, followed by condensation where the result was summarized into meaning. The last step was synthesizing which resulted in descriptions and concepts.

Verifying is the sixth step of Kvale's (1996) seven steps of interviewing, which can be divided into three subcategories; validity, reliability and generalizability. Personal experiences have been the basis for the answers in the interviews, these can be considered valid from the respective individual. When answers have been formulated and reproduced in more general terms, the personal experience has been requested in order to more clearly anchor the opinion. The interview questions were formulated without prestigious purpose, and can be answered regardless of knowledge, which suggests that honest answers have been collected. Two of the most important clients in the Swedish infrastructure industry are represented but they are both large organizations where the selected interviewees represent a small part. Some attention that could affect the generalisability is that the organizations recommended suitable interviewees for the research topic. In addition, the affiliation within two of the organizations can influence the result since the consultants mostly work with railways industry, while the client's project managers work within the road industry. Several interviewees have pointed to a cultural difference that still prevails in Trafikverket.

The final step is reporting (Kvale, 1996). The thesis has communicated the findings from the analysis of the interviews as empirical inquiry and reporting in a scientific and ethical manner. In order to provide examples of the interviewees' experiences and opinions citations were used.

3.3.2 Observations

During the thesis process the researchers were located at Rejlers' office in Gothenburg, where they participated in daily activities at the office such as shared breakfast, lunch and coffee seminars and events. Communicating with employees at Rejlers in an informal way resulted in observations concerning the culture in the organisation and the consultant role as well as an understanding of the projects Rejlers are involved in. Observation can be a complement to the interviews since it allows the researchers to get an understanding of people's behaviours related to specific contexts (Bryman & Bell, 2015). Data from interviews and observations are presented jointly in the empirical inquiry and analysis to contribute to confirming the consulting role in the industry.

3.4 Codes of ethics

The ethical aspect must be considered at all interview research stages (Brinkmann and Kvale, 2014). In this thesis, the interviewees were informed of their personal anonymity but informed of the connection to the associated organization with their professional role. In addition, the interviewees were informed about the purpose of the research and were asked if it was ok to record the dialogue, in order to facilitate the processing of the material.

The aspects concerning the consequences of participating in a qualitative study, according to Brinkmann and Kvale (2014) cannot be identified besides from informed consent and confidentiality. Interviews have not been valued whether it is considered advantageous or disadvantageous to participate in the qualitative study. That assessment relies on the interviewee's personality. The researcher's role is described as the last aspect of ethical problems in interviews. It includes the researcher's integrity and moral responsibility as an important aspect (Brinkmann and Kvale, 2014). The autonomy of research could be distorted by the research founders or participants. In this study, none of the participating individuals have been known since before, except to email contact on request. All participants have been treated in an equal and professional manner, regardless of their affiliation.

3.5 Quality of the study

The chosen method is based on subjective perceptions of open issues based on collective experience from the industry. The selection of respondents affects the results of the study. The information has been processed as it has been expressed by the interviewee. However, it is difficult to speculate if the interviewees had replied the same answer today as at the interview. However, the conclusions are not based on the claims of an individual but represent the opinion of the majority. Furthermore, due to the focus and the qualitative research approach the study aims to contribute to a better understanding rather than generalizing.

4 Empirical Inquiry

This chapter presents the empirical findings in the interview study. The chapter is divided into four sections. The first section shortly presents the organisations. The second section describes the findings regarding the opinions about collaboration. The third section deals with findings concerning the work culture and roles in the infrastructure industry. The fourth section presents the findings regarding the experiences of extended collaboration.

4.1 Organisations

In this section the three organisations are shortly presented to provide an idea of the size and business areas of the organizations. as well as their work regarding internal and extended collaboration.

4.1.1 Rejlers

Rejlers is a technical consultant firm that offers technical consulting services in the areas: energy, buildings, telecom, industry and infrastructure. They offer services in feasibility studies, planning, design and project management with a foundation in electricity. The company was founded in Sweden in 1942 and has then expanded to 2000 employees in around 70 location in Sweden, Finland and Norway. Around 1000 employees are located in different areas in Sweden, and Rejlers operates as a national organisation. Rejlers is an incorporated company and has around 15000 assignments each year.

The consultants at Rejlers state that they have limited experience of extended collaboration with client. The experience is restricted to the contractual agreement between Rejlers and Trafikverket. Rejlers does not have any processes or documents regarding extended collaboration. Some of the consultants have experience from development projects in which collaboration activities have been used. Two of the consultants at Rejlers have previously worked at Trafikverket or as in-house consultant at Trafikverket and have therefore more knowledge about extended collaboration.

Informal collaboration occurs within Rejlers to some extent. However, there are no internal documents or processes regarding how to collaborate within the organisation. Meetings are frequently mentioned as a way to coordinate the internal work in a project, which can be both spontaneous and scheduled. Project meetings, technical meeting and review meetings are conducted during a project, either in person or over Skype. The budget for a project decides the number of meetings. Collaboration within a project is a challenge since Rejlers is a national organisation, and project members tend to be located in different offices around Sweden. Both Consultant B and Consultant F claim that it is easier to collaborate with colleagues located at the same office. Each assignment manager tries to coordinate and utilize the resources as efficiently as possible, as Consultant D states “in the project, we work together and we try to collaborate between projects as well, but not more than ordinary project management”.

4.1.2 Trafikverket

Trafikverket was formed in 2010 and has approximately 9,000 employees. The current organization is a merger of former authorities. Trafikverket is responsible for long-term planning of the national transport system for road traffic, rail traffic, shipping and aviation as well as for the construction, operation and maintenance of the state roads and railways. Trafikverket also examines issues of state subsidy for the Swedish shipping industry and works for accessibility in the collective passenger traffic through, among other things, procurement of contracts.

Trafikverket has today the most established approach regarding collaboration of the three interviewed organisations in the study. Trafikverket has developed two processes for working in collaboration, Samverkan Bas and Samverkan Hög. Samverkan Bas is stated in the contract since 2015 towards both contractors and consultants. Samverkan Hög on the other hand is only used towards contractors and is today applied in about ten projects in Sweden. All projects using Samverkan Hög is currently ongoing, and no evaluation of the total effects of Samverkan Hög has been done. This empirical inquiry does not address the content of these processes, instead focus on the interviewees' experiences of extended collaboration in general and not connected to each process. The interviewees at Trafikverket have a variation of experiences of collaboration, and not all are familiar with the documentation regarding Samverkan Bas and Samverkan Hög.

The internal collaboration is not managed in a coordinated way. It is up to each project manager to handle, but the organization does offer education to the employees concerning collaboration and the meaning of it. Internal meetings are held both in projects and within the divisions at Trafikverket. Project Manager A runs collaborative exercises in both internal and external project teams, usually managed by an external collaboration leader. It can be activities such as team building and workshops in order to get to know each other, and to contribute with knowledge as well as distribution of work tasks.

4.1.3 Trafikkontoret

Trafikkontoret is a municipality administration in Gothenburg. They offer the citizen of Gothenburg sustainable mobility in the city where they can work, live and meet. Trafikkontoret is both client and manager within several areas, for example, traffic and street network within the municipality. Trafikkontoret has 420 employees and is divided into 12 departments.

Trafikkontoret is currently not working in extended collaboration towards consultants. They do not have any documents or processes regarding extended collaboration. However, informal collaboration occurs and there is a willingness to begin a more structured way of working in collaboration. The employees at Trafikkontoret have limited, experience of extended collaboration towards contractors and other clients. Though, some interviewees have experiences from previous workplaces and of informal collaboration.

The internal collaboration at Trafikkontoret needs to be improved according to Project Manager D. It is expressed that collaboration should occur internally but there is no guidelines for how it should be managed. The administrations in the city of Gothenburg,

including Trafikkontoret, participated in a collaboration program which has established internal forums were to discuss questions regarding the program.

4.2 Opinions about collaboration

In this section, the empirical findings regarding the opinions of collaboration is presented. It contains the interviewees' personal definitions of collaboration, followed by the general opinion of collaboration. The final section presents the opinions and attitudes about the factors of importance for collaboration.

4.2.1 Personal definitions of collaboration

In this section the interviewees' personal definitions of collaboration are presented, in order to give an overview of variation of the term. The personal definitions are divided by organization affiliation. In the end of the section will the definition and description of collaboration from the Professor and the Specialist be presented.

4.2.1.1 Rejlers

The following list shows the personal definitions of collaboration from the consultants at Rejlers.

- *Consultant A*: “An organisation which contains for example project manager, assignment manager, agents and some one more. Where you sit and present so that the project progresses without problem. That you all the time discuss what the project involves, and have an open dialogue together in order to reach the common goal”
- *Consultant B*: “It is to work together towards a common goal and how to do it in the best way. It is very much about communication and such when setting the guidelines for it and even regarding conflict management. Simply when you work together”
- *Consultant C*: “I don't know, but I think that collaboration should be that we show our suggestion more often, we are open and that we come more often come with suggestion not only in the end and tries to find early a solution that suits the client.”
- *Consultant D*: “Collaboration for me is when all parties in a contract jointly agrees on a common goal vision regarding the scope of the project, through an open and honest process.”
- *Consultant E*: “The personal definition of collaboration is for me, that you together get a consensus in, for example, projects so that together you can strive to reach the same goal. This of course facilitates if you have a good relationship/working climate with the other party.”
- *Consultant F*: “An organisation that work together, which can solve problems without fighting”

4.2.1.2 Trafikverket

The following list shows the personal definitions of collaboration from Trafikverket.

- *The Strategist*: “To collaborate is a way to handle a number of issues that always come up during a project in a sensible way, not least with respect for each other's different roles and party interests.”. “Collaboration can be a little like the oil that lubricates the machinery.”
- *Project Manager A*: “For me, collaboration is preventive conflict management, if one should only have a short definition.”
- *Project Manager B*: “That we try to do things together and find the big features in the project together, then the details can the consultant do. But that we agree on the big features so that we will go in the same direction, that is collaboration and that we do it in good unity.”
- *Project Manager C*: "It is when you have a common goal that you solve jointly but still retain the basic role you have”
- *The Project Engineer*: “There are those in my surroundings who say that the collaboration is really no more than common sense and I am actually prepared to agree. [...] Hand in Hand”

4.2.1.3 Trafikkontoret

The following list shows the personal definitions of collaboration from Trafikkontoret.

- *Project Manager D*: “It is to work together towards a united goal, that is collaboration for me. Or to help each other to their respective goals, may I add, but still have something in common pronounced.”
- *Program Manager*: “Collaboration is about to collaborate so to speak. Openness and responsiveness and transparency as far as possible. Try to understand each other’s needs and try to understand that you look at things differently and understand how the other party vision looks like. I think that is collaboration very much. As well as getting all parties goals or needs to be as well fulfilled as possible and to help each other with that.”
- *Top Manager A*: “Collaboration is that you work with something very close together, in a team, where you optimize that team with the best possible resources.”
- *Top Manager B*: “When we are going to do a project, do we have ONE project group, not one at the client and one at the consultant or contractor, but it is one project group. One project group that works towards common goals and shows each other very much confidence and trust.”

4.2.1.4 Additional personal definitions

In this subsection is the Professors’ description of collaboration is presented as well as the Specialist’s definition.

- *The Professor*: The first step in collaboration is to choose consultants and clients who is not traditional because they do not fit in collaboration. Once the organisation is formed it is important to work with attitudes and the understanding of the project. Thereafter, is there a need to create sensible structures for collaboration in order to have the right meetings at the right times.

Then some type of mechanism, such as collaboration group, questionnaire and an external facilitator, is needed in order to check if collaboration works “so that it does not go completely straight to hell.”

- *The Specialist*: “ISO-44001”.

4.2.2 General opinions about collaboration

The general opinion about extended collaboration is positive including benefits for working collaborative. However, the degree of positivity varies, from a client perspective collaboration is expressed as very important and well needed, while some of the consultants are of another belief. For example, Consultant C has not experience any extra need for collaboration in order to improve a project, however, “If you mean by extended collaboration that you try to avoid problems at an early stage then this is great, but we will do so without increased collaboration.” Another attitude among the consultants is that collaboration has become too complex, requires extensive administration and takes up a large amount of time, which could be better used on something else. Although not all consultants are of that opinion, some suggest that collaboration is a good thing since it highlights uncertainties and create common goals as well as make it easier to discuss and have an open dialogue. Also, in order to be a part of development, collaboration is needed. The clients express that collaboration can be used to make the common denominator clearer, in the end product.

Collaboration is considered to have a positive effect on the industry from both consultant and client perspectives. Due to the increased number of large and complex projects which involves many actors, there is a need to collaborate in order to be able to manage the projects. As Consultant D says, “the projects are so big, no one can handle them themselves, we need collaboration - Sweden is too small.” The industry would benefit from collaboration if the models and frameworks would be used in a large scale. Project Manager B, for example, believes that the industry would look completely different if Samverkan Hög was used in more projects, since it involves helping each other.

Even if the main opinion regarding collaboration is positive, some obstacles and challenges are mentioned. From the client perspective there is a fear that some people try to use collaboration and think the client will solve the problems. For example, help to solve technical questions, something that the consultant is procured to do. As the Strategist states “I am a great friend of collaboration, but it is important that you do not lower the garden regarding the contract.”. A challenge that is expressed from both the clients and the consultants is the lack of understanding and purpose of collaboration in a project if involved parties do not know what it means, it does not become productive to use collaboration. Project Manager D suggests that collaboration needs to be agreed upon and adds “It does not work to just say that one should collaborate and believe that it solves itself”. Instead there is a need to clarify the aim with collaboration as well as why and how. The Specialist is of the same opinion and argues that one problem is that organisations do not in advance reflect internally over the intention of collaboration. Therefore, there is a need to implement more structured processes in which organisations must prepare for collaboration, for example, with help of standards and systems. The specialist states “The purpose of the collaboration is not to have a nice time, but it is often nice to work in this way”. A related challenge is that all actors have their own management systems and work procedures.

The infrastructure industry is perceived as conservative concerning many aspects, for instance, is it hard to influence the industry with new thinking regarding new production methods and material choices. This also applies for collaboration. Therefore, there is a need to change the current work climate in the industry in order to make collaboration work. Nevertheless, there is still a belief that the trend regarding collaboration will continue to grow and have a positive effect in the industry.

4.2.3 Factors of collaboration

In this section, the opinions and attitudes regarding factors of collaboration are presented. Variegated views are clarified through the respective role and organization.

4.2.3.1 Relationship

The relationship is crucial when it comes to collaboration. To some extent this factor is considered the most important one. It is about understanding one another and the ability to talk openly and be able to agree on work-related issues. Project Manager D explains “As soon as you get a good relationship you get better information flows, and you can be open when you encounter difficulties and issues.”. Project Manager B has faced projects that stopped because of relationships which did not work and states that “time costs money for all parties.” Consultant A is also positive about the benefit connected to a good relationship but clarifies that “in the business it does not matter how close you are with the project manager” related to the public procurement act. There is a mixture of speculation and experience of whether the relationship is positively affected by extended collaboration, but the predominant opinions state that it improves the relationship. Nevertheless, as Project Manager A says, “but it [collaboration] is a job, it's not a self-playing piano”, it is important to work in order to strengthen the relationship in projects.

4.2.3.2 Coordination

Organizational efforts of adapting structural processes and standardized work occur to a small extent on Rejlers and Trafikkontoret. However, the attitude is positive regarding introducing a more structured way of working, since many good ideas exist within the organizations. Meanwhile at Trafikverket, there is both governing and guiding documents to a great extent. These documents are followed mainly by inexperienced employees while well-experienced personnel tend to rely more on experience. Nevertheless, there is still a general interest from the interviewees to adapt and implement documents and processes for collaboration and how a project should be conducted.

There is a unified picture in the perception that creating a common goal vision is fundamental to the success of a project. Meetings are coordinated within each project and adapted to its needs. Top Manager B from Trafikkontoret states that “if one is to really get something constructive out of collaboration then separate meetings with common goal formulations are needed such as ‘this direction we should go’, ‘this is how we handle problems’”. For the consultants the common goal vision is created at the start meeting to ensure that the right entry values for the project are determined. At Trafikkontoret it exists some processes and guidelines for how to conduct start meetings

in projects. For Trafikverket the formulation of a common goal vision is a part of the documentation regarding collaboration.

4.2.3.3 Proximity

The opinion and attitudes towards proximity and project office vary among all three organisations. The consultants are mainly positive and believes that there are benefits of sitting close together in the same project, especially when the assignments get more complex. The clients also see the benefits with collocation and proximity, but state that it is often done towards a contractor and not with the consultant. From the client perspective there are a few practical issues regarding collocation, one is that the consultants need specific software, that the consultant normally works on several assignments at the same time and are based at different locations. An additional reason is that it can be costly, since the client must pay the consultant full time to sit together with the client even though it might not be a full-time assignment. The consultants also reflect over the cost related to proximity, and Consultant D says, “even if you do not have the budget for it [collocation], it is probably profitable in the end anyway.”. The main reason for proximity and project office is the ability to easily and spontaneous get in contact and solve problems directly. The relationship can also be improved and can result in shorter decision processes. The main disadvantages from both the consultants and the clients is the distance from the colleagues in the own organisation. Nonetheless, the general opinion regarding proximity is that it is beneficial if solved in a practical way, as Project Manager C says “collocation is the foundation as much as it is possible, however it should be practical to do too, so that you have some benefit from it too”.

4.2.3.4 Commitment

Commitment is believed to have a positive impact on a person’s work performance, as Program Manager says, “you deliver better if you are engaged and vice versa”. However, it is not only commitment that improves the output of work according to the Project Engineer. It can also be other aspects such as work environment, personal development and workload. Nevertheless, commitment is perceived to be connected to the output of work. Collaboration is generally believed by the clients to positively affect the commitment among project members. While the opinions among the consultants differs, some suggests that in cases where it exists a clear purpose for collaboration it might increase the commitment. Others mean that just because collaboration is agreed between involve parties it does not result in an increased commitment. Consultant B even suggests that it can have an opposite effect, since collaboration can become something complicated and forced. Then again, is it commonly believed that commitment can be increased if the aim with collaboration is clearly presented so that involved actors will not misinterpret it. Project Manager A claims “because if you do not have a good picture of it [collaboration] then maybe it will be hocus pocus and you enlarge it”. Collaboration can help to avoid negative risks such as someone feel badly treated or not listen to, and by avoiding these risks generate commitment and a greater driving force in the project.

4.2.3.5 Conflicts

Conflicts are considered to be normal and a natural part of a process. A conflict can have a positive impact on a project, since it provides an opportunity to get involved parties to discuss and agree in order to make the project move forward. Project Manager C says that “they [conflicts] must exist, it is both good and bad. It is important that you can benefit from them and see it as an experience.”. However, it is important that conflicts are objective and not personal otherwise can conflicts be experienced as unpleasant. Still the opinion is that conflicts involves people and as Consultant B states “conflicts not only have to do with the project but it is very much about how we are like people, sometimes we speak different languages and it is about finding a community in it”. Nevertheless, the general opinion is that conflicts can be beneficial but need to be solved, preferable as quickly as possible and in a professional manner.

Collaboration is believed to have an impact on conflict and conflict resolution, but some opinions differs for each other. The Strategist says, “collaboration can be essential to get a smooth handling, even though the contract is in the bottom”. While other suggests that collaboration does not prevent conflicts, but it can reduce the number of conflicts since involved parties have a good relationship and communicate better. Project Manager D explains that in harsh project environments misunderstandings occur and collaboration is therefore a way to facilitate. Collaboration can result in a more professional way of handling conflicts and it became easier to see the other person’s perspective on things. Project Manager A summaries it as “conflicts sail up in a collaborative process rather than just popping up”.

4.2.3.6 Incentives

Incentives can be either personal related or economically related. Drivers for making a good job are the feeling of delivering a good job but also related to self-esteem. None of the respondents relate the willingness to do good work with money. However, Consultant B states that in order to be driven “it is important to get the right conditions and also that you get some kind of confirmation of what you do”. Another example of personal motivation by Project Manager A, is “to do some good and to make a little difference and deliver something that society needs”. Economic incentives are associated with a positive driving force if constructed in an appropriate way. It is important to have clear measurable aspects. Project manager C explains that economic incentives can be positive in projects both for consultants and contractors. If the client wants something extra or the project requires an exceptional delivery, then bonuses can be positive. Consultants also relate financial incentives to the internal organization where the opinions are more fragmented. Consultant D, claims, ”It is quite okay, but there is a disadvantage, if there is a project bonus and people discover that it is starting to go a little bad then people stop caring in that mission and maybe looking for assignments that go better”. Consultants also relate financial incentives to the internal organization where the opinions are more fragmented. Nevertheless, the importance of incentives in various forms as a driving force for increasing the individual motivation is promoted as important.

4.2.3.7 Transparency

Transparency emphasizes to be positive and something that facilitates cooperation. Especially from the client, the setting is very positive. Timetable and finances are examples of information that is important to be transparent with but also general project information and involved resources in the project as well as any changes in resources. Project Manager A states that "It is really important, we cannot hide anything, if you want good deliveries then we should be transparent and share our information". There is a belief that extended collaboration can ease transparency. Consultant F explains that "You are forced to be more open, if you compare with all projects, there is greater openness. And this is most positive, you can be open with obstacles and limitations in another way, personnel changes, not the opportunity to complete etc." The strategist explains that problems or warnings may be brought up in an earlier stage in collaboration projects at special collaboration meetings. In addition, a natural follow-up takes place at the next meeting that creates trust. However, when it comes to disclosing economic related information or information that can be business related, the consultants claim that it is not something the clients need to know. The opinions are based on the consultant's strategies related to competition and that the company is listed on the stock exchange market. An illustrative example by Consultant C: "You should be honest but not stupid". Nevertheless, the specialist clarifies that "If one is to cooperate, one must cooperate around the economy, quality and time." Furthermore, the Specialist explains that profits can be transparent and that it is rather about ignorance from the consulting industry because there exists no clear model for how it would work.

4.3 Work culture and roles

In this section the empirical findings regarding the experiences of extended collaboration is presented. The section is divided into two subsections. The first subsection presents the work culture in infrastructure industry and the second addresses the consultant and public client roles in the infrastructure industry.

4.3.1 Work culture in the infrastructure industry

Within Trafikverket the role of being an infrastructure client today means a lot of work and a lot of administration but also an important opportunity to influence and a great responsibility. Top Manager A says, "the infrastructure sector is a bit far from trust and cooperation". Today, the culture is influenced by money and legal text, and when an economic discussion appears it becomes legal rather than influenced by trust and cooperation. The culture and work climate have changed significantly over the past 10 years, both consultants and clients experience a harder work climate. Project Manager A and Project Manager B states that contracts and documents are of greater importance than before. Project Manager B says that "Today, the market tends to hit each other on the head with AB, ABT and ABK". Project Manager A agrees, "Now it is much more regulated, we are much more controlled, with technical requirements and documents and we put a lot of demands. Much more administration is required for our projects." According to Project Manager B, are there many disputes which take a lot of energy to investigate "who has done wrong". But according to Project Manager A can the trend be seen in other areas of the society. For example, in healthcare and schools were doctors and teachers spend more time on administration than before. Further on Project

Manager A says, "It has become very important to be able to show that you have not done wrong, it must be documented, and everything must endure an examination". Consultants experience high level of administration and requirement. Also, there is no standardised way of working in the industry and the responsibility is unequally divided among roles. There is also a lack of willingness to find a solution together. According to Consultant F public clients are very harsh when it comes to the contract: "this is what is stated and that is what you should do." One of the common problems is that the client does not know what they want or how to describe it in the specifications. Because of that consultants need to make changes during the project which entail costs.

The law of public procurement act is considered both to be a security, because the rules are clear when procuring at the lowest price, but also as a limitation. The quality of the work deteriorates and the stress increases in the projects for the consultants. The Strategist claims "The law of public procurement act is a restraining factor". Even if the procurement is to be done according to MEAT - Most Economically Advantageous Tender, it is seldom the case, as the fear of legal appeal and thus the delay of the project is too great. Project Manager B says, "some think it [procurement] is a little difficult, but it is not in conflict with the law of public procurement if you do it right". Top Manager A states "in order for collaboration to take place, a change of the climate in the industry is needed."

4.3.2 Consultant and public client role in the infrastructure industry

The traditional view of the consultant and client roles is that the consultant is the one who knows the most while the client knows less. The business transaction has not been a very important part of the client-consultant relationship in infrastructure industry since the client has had its own expertise. The exchange has been more about consultants doing their best and getting paid per hour according to a standardized model. However, both the consultant role as well as the client role have changed. The consultant has become more of a resource providing different competencies and need to take on more responsibility, something that the client did before. The consultants have experienced that previously the client had more resources and knowledge about technical issues and the client used to run the project more than they do now. Something that the consultants are not used to, as Consultant B says, "Now have the client put that task on the consultant, something the consultants still try to adapt to".

Trafikverket is one client that has decided to procure more services from suppliers in a large scale, and therefore has less technical competencies. The reason for the change was to force both consultants and contractors to take more responsibility and being more creative. The concept "Renodlad Beställare" was therefore introduced in 2012. The term intends that the client must state what is to be ordered and the consultant must produce a complete solution in accordance to what have been ordered. It is of importance, according to the Strategist, to point out that a Renodlad Beställare "is an active client and not a passive client. Consultants will always ask questions, but it is important that there is a clear division of roles". The Strategist also adds "there is no inquiry documentation that is so complete that it would not generate any questions.". Trafikkontoret has on the other hand gone in the opposite direction and started to employ their own specialists. A reason is to minimize the risk of not being vulnerable but also for support to both themselves and suppliers like consultants. Trafikkontoret's projects are both large and complex, and therefore is the own competence important compared to before when Trafikkontoret was a smaller client organization.

The clients in the infrastructure industry experience a low level of competencies among consultants. While the consultants argue that they do not get enough incentives to develop or enough paid for their competencies. The industry has not, according to the Professor, agreed upon what influence and competence each role should have. The Professor states “one has not landed in the division of responsibilities between client and consultant”.

4.4 Experiences of extended collaboration

In this section the empirical findings regarding the experiences of extended collaboration is presented. The section is divided into three subsections. The first subsection presents reasons for extended collaboration, the second addresses the activities within extended collaboration and the third presents some challenges of extended collaboration.

4.4.1 Reasons for extended collaboration

There are different reasons and incentives why organisations and individuals decided to work in extended collaboration. In this subsection reasons for extended collaboration are presented such as legal requirements and both individual and organisational driving forces.

4.4.1.1 Legal requirements

Samverkan Bas is a contractual obligation since 2015 and all respondents have some experiences of the concept. However, the work with extended collaboration has been going on for 12 years and is therefore not a new concept but the definitions of Samverkan Hög and Samverkan Bas are relatively new. It is up to each project manager at Trafikverket to decide upon the degree of usage in reality. Even though Trafikverket has processes regarding collaboration none of the project managers know it by heart. However, everyone is aware of the documents and that guidelines exist.

Consultants experience extended collaboration as a wording in the contract. Awareness about Trafikverkets obligation since 2015 is clear. However, the knowledge in what it means to the relationship between consultant and client is not clear. Trafikverket as Renodlad Beställare means that consultants have to take a greater responsibility than before, and the clients describes what they want consultants to deliver. Internally, it also means that the consultants must have a better idea of time and finances in a project. The transformation of client's role has occurred too fast and consultants has not yet adapted to the new way of working. Nor has the client when it comes to deliver project specifications. Consultant A explains that in renewed competition, only the price is of importance and the relationship does not matter, this takes into account the Discrimination Act and the Public Procurement Act. The consultant feels that the collaboration took place more naturally before and the interest was to perform a good project together. A trend has instead become that the consultants are looking for errors in the client's inquiry documents because the fee is too low and there is an opportunity to earn money on the client's mistakes. However, the role as a consultant is two-fold, Consult D describes it as “little schizophrenic” and explains that the one day, inquiry

documents are executed for the client and the next day inquiry documentation is examined to find errors.

In legal terms, there is nothing called collaboration, the Specialist explains that it is not possible to write in a request that a contractor should submit references for a collaborative project. According to the law, collaboration means that involved parties have open books and not using fixed price agreements. Top Manager B argues that there is no need to have the collaboration agreement in the contract and says “Collaboration is based on the fact that both parties want, then it is not a problem to have the collaboration even though it is not stated in the contract.”

4.4.1.2 Driving forces

As a consultant, a contract is awarded for a specific assignment that is expected to be carried out under certain circumstances. Whether the assignment is to be done at a fixed price or variable price means completely different conditions for the work. The Professor explains the consultant as: “it really is in the consultant's ethos that you should deliver such a good facility that you can with the skills you have, not just good enough”. From a client perspective the Project Engineer describes it as an excessive focus on making money in the assignments. Consultant A says that consultant could drive the work on collaboration, but it is an economic issue, “we could collaborate as much as possible if we got paid for it”. In a fixed price project, there is no room for anything other than what has been agreed upon in the contract when the price is squeezed and sometimes assessed to be loss before the start of the project. If the collaboration is not paid for by the client, it is not possible for the consultants to participate.

As the client, there is the driving force in the benefit of society and the project as the end product. The Project Engineer explains that the reason must always be that one wants to benefit society, that is in some way why public clients exist. Project Manager A's driving force is delivering something that society needs and “what we build, we build for future generations” and delivering something that society needs. However, the clients driving force aligns with the collaboration idea. Project Manager D explain the motivation to work together towards the same goal, or to help each other to their respective goals. But still have something in common pronounced.

4.4.2 Activities within collaboration

The process of collaboration is not standardized and according to all project managers, therefore is collaboration implemented differently in each project. However, generally there is a start-up meeting for collaboration held in the beginning of the project with the aim to “set the scene” according to the Strategist. The client has usually worked for a long time with the project before hand and have a lot of information. Much can be read in documents but there is very much in between the lines that are better talk about. To somehow get a good start and to get to know each other, shake hands, and get to know who will work with whom and thereby the different levels of collaborations. Some personal connection is also a sort of foundation. Like discussing personal interests or family situations in order to get to know each other more than just the professional role. According to Project Manager A “one not only becomes an assignment leader x but it actually becomes a human of flesh and blood”. Although these meetings are still managed in different ways, sometimes a whole day can be spent on such events but sometimes a few hours are enough. During the first collaboration

meeting are the project management teams as well as an agent from each organisation present. The agents are normally only present at the first meeting in order to get an understanding on what applies and to be involved in setting the goals. At the first meeting discussions are held concerning the number of meetings, common goals, risks and opportunities, directions on what to do, how to do it, when to do it as well as where to begin.

The collaboration process is according to Trafikverket's experience the same towards both consultant and contractor. However, the question becomes somewhat different according to Project Manager A, who claims that the consultant carefully selects their words and is very fond of their relationships, while in contrast to contractors tend to be more straightforward. Project Manager A also explains that it is important to meet and prepare with the consultant counterpart, often the assignment manager. This is usually done before the first collaboration meeting to give a picture of the client's expectation and giving the consultant an opportunity to respond. The connection and relationship between the project manager and the assignment manager is important according to Project Manager A since: "we are ambassadors and carriers of culture and the cooperation we want to convey downwards" and it affects the entire project organization.

The management of collaboration activities are preferably carried out by an external collaboration leader which are engaged in the whole process. Project Manager A almost always procures an external leader for collaboration and argues that it gets less dramatic and the cost compared to the risk is small. Project Manager C believes that it is important that the collaboration leader is involved from the beginning and states "if they come in later, you can get a bad start". In smaller project the collaboration process is expected to be solved by the project manager. However, Project Manager A claims that "It is a rather ungrateful task to lay on someone's knees for our younger colleagues".

The consultants' experiences of collaboration and activities performed within are personal. Some have been involved in development projects with special collaboration meetings that have been recurring, while others only participated in a collaborative start-up workshop, without any continuous feedback. The experiences from development projects are different from the experiences of Samverkan Bas. In a developing project the costs are not that important, Consultant C says "Then it can cost almost as much as you like. While in a regular project, the client is questioning what you have invoiced, for example, if you have written two hours in the diary, then the client can question what you have done during that time.". Consultant F describes personal experience from project participants saying, "what is this for kindergarten activities" and "I have better things to put my time on". However, consultants have experienced projects where collaboration has worked great without there being anything formally agreed.

4.4.3 Challenges of extended collaboration

The empirical findings show that there are challenges of extended collaboration. This section aims to present the main challenges found in the study, starting with lack of purpose for extended collaboration followed by the consultant's non-interest to collaboration. Thereafter the individual ability to affect extended collaboration is presented as well as the impact lack of resources and competencies have on

collaboration. Finally, the challenge regarding the insecurity in roles and responsibilities is presented.

4.4.3.1 Lack of purpose of extended collaboration

It is clear that the purpose of the collaboration is not clear. However, there seems to be a fairly unified view of extended collaboration in between consultants and in between clients. The purpose, on the other hand, is common, one sees the gain of working more together towards an agreed an common goal. However, there are variations, some think that it is about having fun at work, while others see it as a necessary element that often does not occur. The Specialist explains that “the purpose of the collaboration is not to have a nice time, but it is often nice to work in this way.” There have been projects where the collaboration process has been interrupted, since the people have not managed to work with each other. Project Manager A points out the importance of introducing collaboration early and being clear with the purpose, "so you don't think it is hocus pocus", and so the reaction will not become: "what? should we have kiss and hug contract?". The Specialist however mean that the actors “do not think before what collaboration should mean, that one has to think for themselves what collaboration means internally.” The Strategist claims ”actually I think it is because you do not understand what this collaboration is " and believes that one needs to work through these issues to gain an understanding and respect for each other and especially each other's driving forces. Consultant A also believes that there must be guidelines and working methods for how extended collaboration should take place, one must understand the purpose and what one should come up with based on collaboration. Then there also needs to be room for making and adjusting collaboration to be project specific. Project Manager C has previous experience that collaboration has been used as an opportunity for one party to try to increase influence and to earn or gain as much as possible and clarifies “It is not really the purpose.”.

4.4.3.2 The consultant’s interest

The consultants are interested in extended collaboration, as it is considered positive to work together for a better result. Consultant A says, “it can provide an absolute benefit, that is what opens up to having an open dialogue as well as communication”. However, the consultant sees extended collaboration as a client responsibility, because the consultants found it difficult to see the purpose of it. It is the client or contractor who ultimately benefits from extended collaboration. If the client is willing to pay for extended collaboration or include the time that needs to be deposited in the project already in the contract, it might be possible. The Specialist explains that “It is definitely not [possible] in a fixed price project, the only one who benefits is the client, because we pay to the client. It [collaboration] is included in the working method and must therefore be paid by the client.”. The consultant delivers documents and a solution that can generate a bonus for the contractor, but it is not something that consultants get paid for. The way of working is counterproductive because the consultant wants to keep their costs down to get a bonus, while it is expected to deliver an extra investigation to streamline the contractor's work that can generate a bonus for them. This means that consultants do not help to make efficiency and build better because they also need to make money.

4.4.3.3 Individual's impact on extended collaboration

A challenge related to extended collaboration is that each individual project manager can affect to what extent collaboration is going to be implemented. Trafikverket is a large organization and the consultants experience Trafikverket as fragmented and that the work is done on an individual level. The consultants argue that even though Trafikverket has processes on how the work should be executed it is still up to the individual project manager to decide how the project is adapted to those processes. According to Consultant A the adaption to the processes can depend on the project manager's experiences. The Strategist agrees that the level of implementation of collaboration depends on each project manager and says "in some places in the organisation collaboration work well and you have worked with it for a long time, since the FIA time, but elsewhere it does not work at all".

Project Manager A and Project Manager B argue that extended collaboration is performed in the same way towards both the contractor and the consultants. Both project managers have positive experiences of extended collaboration and have a willingness to implement in their projects, as Project Manager A sees "how amazingly good it is" and believes that "It is a way to lubricate the machinery that can be harsh sometimes.". Project Manager B explains that some employees in the organisation think that extended collaboration is nonsense and it is therefore important that involved persons believe in the aim of collaboration. The Project Engineer has experience of when collaboration has permeated meetings in the project and run smoothly but has also experienced when the work with extended collaboration has become a "project in the project" and that people have felt it more of a burden. The Project Engineer states that "collaboration has always been there and rattled" in some project and not been a natural part.

Both consultants and clients agree that the success of extended collaboration in a project depends on the individuals involved. As Top Manager A says, "collaboration is very personalized, how you are at the meetings and what knowledge you have.". The relationship between consultants and public clients depends on who is the client and who is the consultant, as Consultant B says, "there are people on both sides that are not easy to work with". In extended collaboration there is a need for the right persons to be involved with the right attitudes as Project Manager C says "you must have the right attitude to get into collaboration. You can be the world's most technically knowledgeable person or really driven in business, but if you do not have the right attitude when you go into collaboration then it will not work.". Individuals that are more traditional are according to the Professor not suited to work in extended collaboration. Project Manager A explains it as "there are people who do not like collaboration, they have a shield around themselves, you can never reach them, it can be both contractors and consultants".

4.4.3.4 Lack of resources and competencies

A challenge in the infrastructure industry is the shortage of resources and competencies. Project Manager C explains the lack as "The market has more requirements than there are resources". Reasons for the shortage is explained to be the increased level of infrastructure project that are ongoing at the same time and the current market deficit. Due to this shortage there is a lack of experiences and knowledge both on the client's side and on the consultant's side. The client tends to hire young inexperienced project managers who lack understanding on how to run an infrastructure

project, which is problematic. The new employees in the client organisation still have to take on great responsibility but lack the necessary experiences for it. The young generation at Trafikverket with limited experience tends to point out administrative errors as important rather than understanding the real problem according to the consultants. Nevertheless, the increase in administration is generally perceived as time-consuming and sometimes excessive. Consultant C says, "If you have followed all your administrative papers then you cannot blame anyone, then everything can go to hell and no one bears the responsibility".

The clients experience that due to the situation on the market many consultants tend to change consultant firms, which according to Project Manager B result in that "the projects are suffering because the skills are moving.". A related issue is that when the client procures a consultant it tends to be one specific person in the tender but during the project that person is replaced with someone less experienced. Another effect of the lack of resources and competencies is the challenge to formulate project specifications in order to make the consultant understand what the client is asking for. The project specification is something the consultants criticize, and express a problem related to the impact bad specifications have on projects. The Strategist explains that the templates of specifications at Trafikverket are updated twice a year and it is an ongoing work. The Strategist claims "the templates are good, but the description skills are sometimes lacking. This is what the consultants rightly criticize.". Project Manager A agrees and says "it is important to remember that, as you ask you get answers. If we have been bad when we have asked for something and described it very easily, we cannot expect anything else.".

The consultants also mention that fixed prices are not suitable for projects where the client cannot describe what is to be delivered. This entails increased costs and in a fixed-price assignment it can lead to economic discussions regarding what is included in the project specification. The Strategist is of the same opinion and says "If you cannot define what you want in the project specification, then you as the client must choose variable fee. Can you describe clearly then you can advantageously use fixed price".

4.4.3.5 Insecurity in roles and responsibilities

The client roll has over the past decennium gone through a structural change both in responsibility, but also regarding the work with extended collaboration. In the late 90ths the procurement of services became an option to the inhouse competence. Since then, the role of being a client has been transformed towards Renodlad Beställare, the term was introduced officially in 2012. According to the Strategist mostly related to the former road department as client, tended to be too involved in the consultant's work. The result became a mixture of consultant and client work, and the consultant did not according to the Strategist deliver "a whole job" which consultants did when working for other clients. This change in mindset did however also put pressure on the client, since it is of great importance to describe what is meant to buy. Project Manager A summarizes it as, "Previously, it has been a bit smudgy, and some said it a little nonchalant that we had too many fingers in the jam jar and we were not sufficiently professional.". But did also point at the consultants' deliveries as "the consultants were able to deliver something half-feasible and the client scrutinizes carefully and even redo certain parts". Consultant F claims "It would have been better for the end product, which is going to the contractor, if Trafikverket had taken more responsibility and that you share the responsibility, and work more naturally together as you did before."

Consultant B explains that the relationship between the consultant and Trafikverket has become stricter since the implementation of Renodlad Beställare. However, it still depends on who is involved in a project there are both clients and consultants that are difficult to work with. Both consultant and client claims that there is a contradiction in being both Renodlad Beställare and advocate extended collaboration, and that the role needs to be specified. Project Manager C argues that "In collaboration, you still have your respective roles, but you work together more.". The Specialist explains that the client always requests the specialists in projects but is not aware of the costs involved. In order for the economy bear in the projects, the competence must be levelled out with less experienced ones. "The client has not really understood our business related to overhead and the calculation of profitability".

Linked to the insecurity in roles, there are different perceptions about who should be responsible for the costs of collaboration. The consultant is willing to cooperate if the client pays for it while some clients think the cost can be shared.

5 Analysis

In this chapter the analysis is presented. The analysis is divided into three parts, the first part is an analysis on the general opinion about collaboration. The second part is an analysis of the work culture and roles within the industry followed by an analysis of experiences of collaboration.

5.1 Analysis of general opinions about collaboration

In this section an analysis of the general opinions about collaboration is presented. It starts with the definition of collaboration and followed by an analysis of the personal opinions of the seven selected factors.

5.1.1 Analysis of definition of collaboration

The term collaboration is described in the literature (Chan et al., 2003; Cheung et al., 2003; Dietrich et al., 2010; Junky, 2018) in slightly different ways which is similar to the answers from the respondent which tend to differ more. This suggests that there is a confusion about the concept, which are connected to the intuitively of the term collaboration, since everyone usually has a perception of what it means. Collaboration is commonly described as working together towards shared goals (Chan et al., 2003; Cheung et al., 2003; Dietrich et al., 2010; Junky, 2018) and the same description is frequently recurrent in the personal definitions. Other reoccurring association with collaboration from both the literature and the interviews are problem solving and conflict management. This is a consequence of both the past and current climate in the industry, in which conflicts regarding contract and responsibilities occurs more often as well as a receding level of quality of delivered services (Vägverket, 2009). The personal definitions of collaboration are related to the individual experience of collaboration. The respondents with less experiences of working in projects with extended collaboration, tend to focus on the ability to work together or hand in hand. While more experienced respondents add reflections regarding roles in collaboration and processes for collaboration.

There is a lack of knowledge regarding the term collaboration and the process of extended collaboration in the industry and in the literature. The lack of knowledge might relate to a misunderstanding of the term, since it is intuitive and hard to define. Another reason might be an absence of a unified definition of the term as well as a clearly stated process in the industry. In contrast, the concept ECI - early contractor involvement is much more clearly stated and without knowing the process it is still possible to get an idea of what it involves. Therefore, might it be of interest of the whole industry to try and create a unified definition of the term. However, the intuitively of the word collaboration makes it open for interpretations and entails it hard to create a clear definition that everyone will interpret in the same way. Another risk with a definition is the exclusion of other aspects as well as what should be included in the definition and vice versa not included. Nevertheless, there is a desire for a definition of extended collaboration.

5.1.2 Analysis of factors of collaboration

Relationships are claimed to be fundamentally important and mutually to the theory (Bond-Barnard et al., 2017; Gadde & Dubois, 2010), trust and understanding are brought up as crucial components. These relationships are established by consultants throughout personal performance such as good preparations on beforehand but also sometimes throughout initiated activities. For the client determines the relationship whether the project is progressing in the right direction. According to the literature (Bond-Barnard et al., 2017; Gadde & Dubois, 2010), relationships are improved through work in collaboration, but that opinion varies. This may due to the varied and partly limited experience of collaboration among some of the respondents. In addition, informal collaboration is considered to be a natural element when the relationship is good between involved parties, rather than the opposite of the theory states. What some relate to collaboration with is the intuitive that sometimes arises in relationships. Therefore, it might be considered strange and artificial to initiate a more personal relationship in extended collaboration. Experiences of extended collaboration, however, point to the importance that building relationship requires work and should not be expected to occur without an effort. In summary, the experience of successful extended collaboration might be needed to discover that collaboration strengthen and improves the relationship in projects.

Coordination does not occur in a standardized manner but are developed for each project and are mostly described concerning the internal project organization. Trafikverket is distinguished from the others since the organization has many governing and guiding documents for collaboration. However, it is still up to each project manager at Trafikverket to implement it in a project. There is a positive attitude towards more uniform and effective coordination in both projects and collaboration. The literature (Hoegl & Gemuenden, 2001; Dietrich et al., 2010) states that both collaboration and increased efficiency are improved by coordination, this suggests that there is a willingness to develop and use a more standardised way of working. However, in several contexts is administration perceives as a negative development with organizational changes. Nevertheless, there is a positive attitude towards a uniformity in work linked to efficiency and collaboration. Therefore, it is important that processes are designed in a useful, simple way and do not become just a document in the pile.

Proximity seems to be desirable as much as possible since conflicts and problems are resolved quickly and immediately. In addition, the relationship might be improved, and communication facilitated, something the literature support (Dietrich et al, 2010; Pinto et al., 2004; Kadefors & Eriksson, 2014). However, the proximity factor is somehow limiting both regarding practical issues such as need for specific software or person being involved in several projects at the same time. There are diverse opinions concerning whether to sit close to the consultant or not, which is partly be linked to the direct costs that are easy to predict with co-location, while the indirect profit is difficult to determine. Rather, motivating collocation may be about a belief and attitude.

Both the literature (Hoegl, Weinkauff & Gemuenden, 2004; Dietrich et al., 2010) and the study show that commitment increases the individual performance and thus also the project's success. In addition, the quality of work becomes better as individuals strive for more. One way to increase commitment is to clarify a clear purpose of collaboration. These insights point to increased work with collaboration models, a demonstrable purpose may increase engagement. According to the literature it is of great importance to establish in an early stage, to gain commitment to the project's objectives (Andersen

et al. 2006). However, commitment is not self-evident simply because the purpose is clear, and collaboration is pronounced or agreed. It is something that is constantly needed and requires efforts throughout the project to be kept alive.

Most personal views of conflict are considered to be functional which according to the literature may help to improve relationships (Clegg et al., 2016; Vaaland, 2004). At the same time as conflicts are emphasized as something positive and natural, it is nevertheless important that they are resolved immediately. If a conflict tends to be personal and offensive, it is considered to be dysfunctional and thus therefore not contribute to the development of a project but may instead destroy relationships (Clegg et al., 2016). The connection between collaboration and conflicts is a bit diffuse. All agrees that conflicts do still arise in collaboration, but collaboration reduce the number of conflicts or that conflicts are managed in a more professional way. This might be a result of collaborations' ability to create relationships between involved actors as well as improved communication. Since conflict may have the ability to improve a project and result in a mutual understanding about project goals, conflicts are considered important. Nevertheless, it is still important that involved parties agree on a model for conflict management in order to solve conflicts efficiently and receive the benefits from it.

The personal incentives differ between individuals and there are many drivers for doing a good job. For example, efficiency and "doing it right from the beginning" or self-fulfilment of producing something that is beneficial for society. But when it comes to economic incentives the opinion is not really convinced. Generally, it is more a matter of interpretation than if it is good or bad as Kadefors & Eriksson (2014) describe as the risk of reward systems, what is not explicitly measured and rewarded is not performed. Yet there is a belief that the reward system is good. One of the arguments for the hesitation of economic incentives is that the reward system needs to be properly implemented and be measurable. Incentives can differ between the roles and tasks in a project as well as individuals, therefore, there is a need to adjust the incentives accordingly (Dietrich et al., 2010). Nevertheless, none states that economic incentives should be avoided. This may be connected to the main driving force in the industry which is to make a profit. That mindset is influencing the whole business not only the consultants. Making a profit should be of interest for a company, but in order to collaborate better a greater focus should instead be on delivering a good product. However, as Dietrich et al. (2010) state that appropriate incentives might guarantee a joint interest to the project goal.

The consultants argue that they are transparent and open with the information the client requests. While the client emphasises the importance of being transparent since it results in better deliveries. Both parties say that collaboration makes it easier to talk about problems in the project earlier on. This is related to the relationship that might occur in collaboration, if a person has a better relationship with someone it is easier to be open and to share information in a large scale. However, both parties do argue that economic issues are harder to be transparent about, especially the consultants who do not want to share information about business strategies such as procurement and finance. This attitude is contradicting to the literature (Byggherrarna, 2018), which states that openness and transparency are crucial agreements for collaboration. This can be a result of the current economic situation that exist between clients and suppliers. It is important for consultants to make a profit in a project and in order to do so they try to find gaps in the client's specifications and errors. The client is aware of that and tries to hold on tight to the budget and do not openly displays any extra money. If the

consultants could be more open regarding what they want to earn in a project and the clients more accepting and responsive towards that. On the other hand, a reason why consultants do not want to share information regarding finances can be due to an ignorance, and a lack of a common system to share finance in a project as well as the difficulties to present overhead costs for consultants.

Based on the analysis of each factor, the general opinion about collaboration is positive among both clients and consultants. All factors are considered important and indicate that there is an interest to collaborate in the industry. However, consultants and clients perceive certain factors differently and there are still practical challenges to implement way of working concerning some factors such as proximity and transparency. The factor that is considered that most important one is relationships. Reasons seem to be that a good relationship is regarded as a basis for collaboration since it facilitates communication and transparency. These aspects as well as a good relationship are important for the other factors as well. Both conflicts and transparency are affected by the relationship that exists between the parties involved.

5.2 Analysis of work culture and roles in the infrastructure industry

Both consultants and clients feel that there have been changes in the culture during the late decades, something that literature confirms (Dir 2002:24). The consultants are perceived to take greater responsibility and experience the client as less committed and partly less competent than before. The client finds that the consultants have a great focus on money and that the quality of the work is varied. There seems to be a superstition on the respective roles, the client should be perfect at ordering and the consultant should perform the task in a desirable manner. But in fact, there are almost always questions and concerns from both sides. Although the role as a consultant or client hold its rights, it still seems to be an uncertainty linked to the other actor's role. There is an understanding of each other's diverse interest, however, these are sometimes ignored or misused. Instead of accepting the differences of the roles and focusing on the common interest in the project as well as accepting the diverse interests. There is a need to understand and accept each other's business strategies in a positive manner in order to collaborate more efficient. If the focus was put on the common challenge of succeeding with the task and not each other's responsibilities and roles, the actors might have described each other differently. The industry has noticed many of these perceived facts already in BESK (Vägverket, 2009) and the industry has received support for working with collaboration issues according to Kadefors & Eriksson (2014). There are also well-functioning collaborations between the consultant and the client, but the majority describes a work culture characterized by the importance of keeping to their rights and what has been formulated in the contract. However, the contractual discussion occupies a larger part of the assignment when the knowledge and experience are low. Perhaps it is a clarity for young or inexperienced to denounce the weight of the contract because it is at least understood. The active role of the client in concept of Renodlad Beställare, which the Strategist points out as important. That the client as Renodlad Beställare does not have to perform the consultant's job, however it is still important to be accessible and respond to questions that can facilitate the consultant's job. This seems to be an important adding to the concept of Renodlad Beställare that sometimes occurs but not to a sufficient extent.

5.3 Analysis of experiences of extended collaboration

This section analyses general experiences of extended collaboration and informal collaboration. The chapter starts with an analysis of the reasons for collaboration, following is an analysis of the collaboration activities. The section ends with analysing the challenges of collaboration.

5.3.1 Analysis of reasons for extended collaboration

The three organisations involved in the study have different types of organisations both regarding roles and sizes, as well as different prerequisites. Everyone has a connection to the word collaboration and describes it with a personal touch. Collaboration occurs in different forms in all projects as an informal and appreciated phenomenon. In addition, extended collaboration that the client has initiated exists. Collaboration takes place both towards the client, but also within the internal organization. This perception corresponds to the perspectives on information exchange that are fundamental to collaboration such as intra-organizational and the inter-organizational (Yang & Terrence, 2011). The focus is mostly on the consultant and client collaborations in the inter-organizational perspective.

The reasons for collaboration are considered to be working together towards common goals and in openness and trust which is also stated in the literature (Vägverket, 2009). The client sees the whole project and its societal benefit as well as how extended collaboration may generate a better product. In addition, perhaps at a better price because conflicts and costly legal processes may be avoided. That extended collaboration can reduce the impact of conflicts are confirmed by both the clients, consultants and the literature (Cheung et al., 2003; FIA, 2006). However, the consultants see extended collaboration as any other requirement from the client. The positive attitude among the respondents is distinct, as well as the conviction that it is the client who should pay, since it is a working method which include more time and effort for the consultants. The consultants at Rejlers have limited experience of extended collaboration even though their biggest client in the infrastructure division is Trafikverket. Without Trafikverket as their client, they might not have had any experience whatsoever.

Extended collaboration is stated in the contract according to Samverkan Bas and should be implemented, but the consultants state that the client has shown limited initiatives to collaborate according to Samverkan Bas. Legal or regulatory requirements is stated to be a reason for collaboration according to Oliver (1990 in Clegg et al., 2016). This is a problem for the consultants since they do not see the point of stating it in the contract if does not occur. A reason why extended collaboration is not implemented may be that the client has not found it necessary in the specific project, and therefore decided to not implement any activities related to extended collaboration. Another reason may be that the project has a short deadline, or the task is straightforward.

According to the three first steps in SS-ISO 44001 (SIS, 2017) is it necessary to first establish and evaluate the internal organisation and its capabilities as well as what the benefits of collaboration are. If the client finds that it is not suitable to implement extended collaboration based on an internal evaluation, then it seems undeniably unnecessary to still enter it into the contract. Even if extended collaboration is part of the contract there might still be benefits of including certain activities such as workshops in the project in order to get to know each other and to discuss the common

outcome of the project. However, there is still a lack of interest for extended collaboration among the consultants. They express that they think extended collaboration might be good, but they need to get paid for the time spent on it, and it needs to be an initiative from the client. If the client does not have extended collaboration as a requirement the consultant would most likely not address the subject on their own. It can also be a result of the few experiences that the consultants have regarding extended collaboration, which are not all that positive.

Trafikverket compared to Trafikkontoret, is an extensive organisation, which manage complex and large project all over Sweden. Because of its size there is a need to have more steering documents and guidelines concerning processes both in projects and internally in the organisation. This is something the literature suggest is beneficial for the collaborative process (Martin-Rodriguez et al., 2005 in Bond-Barnard et al., 2017). However, Trafikverket has also been through some organisational changes both with merging two organisations and changing direction towards being a Renodlad Beställare. This seems to have an effect on how collaboration is being executed in projects, since it tends to be initiated based on the individual project manager instead of following the guidelines. It is today up to each project manager to decide and adapt collaboration to each project. Therefore, it differs very much between projects depending on the individual opinion about collaboration. This phenomenon indicates the lack of shared goals with collaboration, both internally and externally which requires knowledge sharing and learning (Dietrich et al., 2010). Some might experience extended collaboration as something that only takes up time and money, and does not result in a better result, while some are positive to the effects extended collaboration can have, and therefore tries to implement in all their projects. Some just follow the guidelines and documents without reflect over the meaning of collaboration.

A possible reason why Trafikkontoret does not have a defined way of working with extended collaboration can be the deficient understanding of the concept. This can lead to a reluctance to implementing it into the organisation, since they do not know how it can be implemented, where to start, in which projects, if it should be part of the contract or what procedures that may be useful. It seems to be a belief that collaboration is complex and large, which takes up both time and resources. It might also be hard to see the benefits from it before implementing it. Nevertheless, there is still an interest from Trafikkontoret to work more collaborative in projects.

Both consultants and clients are driven by various incentives. Achieving social benefits can be in the interest of all individuals, but the role of a business relationship may not be allowed to constitute the purpose. As a consultant, you work against time and money, but you are eager to deliver a good product. As the client, one looks more at the larger perspective and the end product. Understanding and adapting to each other's driving forces could be met in a well-functioning collaboration which furthermore can result in more efficient processes and save resources (Bond-Barnard et al., 2018).

5.3.2 Analysis of collaboration activities

According to FIA (2006) there are several activities and processes that can be beneficial to implement in extended collaboration projects. However, based on the conducted respondents it seems like few of those activities actually are implemented. For consultants it seems like a first collaboration meeting is held in the beginning of the project. Besides that, there seems to be no other activities of collaboration later in the

project. During the project it appears that no continuous evaluation or collaboration meetings are held, areas which can have positive effect on the project (FIA, 2006). A possible reason may be how the projects are designed, whether it is a long project or if it consists of different phases. Which can be an excuse that the consultants from Rejlers have only been involved in the first meeting. However, one might wonder what the meaning of the collaboration meeting with the consultants is, if they still should not be involved in the whole process. This gives an understanding of the consultants' attitude towards collaboration, and that it is considered to cost more than it generates benefits. Other reasons why there has only been one meeting may be that the client has either felt that there is no need for more than a start meeting to get to know each other. Alternatively, once the project starts to heat up, collaboration is put aside and not prioritized.

5.3.3 Analysis of extended collaboration challenges

There is a contradiction in the positive encouraging attitude towards collaboration. One reason can be a lack of understanding of extended collaboration and why it is needed. The lack of resources on the market on both the consultant's side and the client side make it difficult for the client to expect that the procured consultant is the best and it is thought to believe that client should be specialist on ordering perfectly. However, this fact can be seen as a reason why extended collaboration is required. For a collaboration project to be successful an understanding of the meaning with collaboration in the specific project need to be known to all involved organisations and individuals, this can be done by workshops (FIA, 2006). However, it seems that it is not often these types of activities are held, which in turn can be related to the lack of knowledge about extended collaboration, it becomes a catch-22 moment.

The personal aspect of who is involved in a project from respective organisations is significant. Both consultants and clients mention that who is involved in the project affect the outcome of collaboration. Trafikverket is described as fragmented and how a project is conducted is based on each individual project manager. It is also up to each project manager to adapt Samverkan Bas to a project, so depending on that individual's experience and interest of collaboration affects the level of implementation in a project. The consultants from Rejlers have not experienced that the client has taken the initiative to implement extended collaboration, but either has the consultant. It is important that "right" individuals are involved in collaboration projects (FIA, 2006), while individuals with more traditional approaches might not be suited, connected to the industry's culture and attitude. The construction industry is perceived as conservative (Gadde & Dubois, 2010; Kadefors, 2004) and be based on a fear of contractual consequences. However, it is also connected to the lack of knowledge about extended collaboration and unwillingness to change.

Consultants are under pressure to deliver projects under short time frames and budgets. Therefore, they feel like they do not have the time or budget to spend on extended collaboration, especially not in fixed price projects. However, one could argue that it would be a good reason for extended collaboration in that type of projects. This still means that someone must be willing to pay for it. There is a belief in that organizational improvements can be reached throughout collaboration performance (Oliver, 1990 in Clegg et al., 2016). Mutually, close cooperation can affect the influence on the opposite party. Something that can be abused but if used properly contribute to something positive. The client could specify more in detail what extended collaboration will

include and the time as well as costs for it, so that the consultant can add that to the tender and understand the purpose of extended collaboration. Ultimately, the consulting profession is about delivering an agreed product at a certain cost. Other types of meetings can be included in the project tender, so why would this not be possible to include time, travel etc for extended collaboration. However, some clients agree that it should be described in the specification concerning expenditures for collaboration, but also argue that those expenditures could be split in between the involved parties. Something that the consultants have trouble to see working because they do not see their gain in working in extended collaboration, which in turn can be connected to a lack of understanding of extended collaboration and its benefits. If the client can expect the consultants to pay for their own time for collaboration, then the purpose becomes even more important to be able to point out to the consultant. Some clients believe that the consultant should see the benefit of society and want to cooperate for that reason, while the consultants strive to perform what the client orders in a sufficient way in order to make a decent profit. Perhaps there is a purpose that different actors are driven by different incentives.

In addition, there is a skewed distribution linked to the consultant's responsibility associated with extended collaboration. If the consultant puts time on collaborating and producing the best specifications for the client, the consultant will not benefit economically from that cooperation. Instead, the savings are made by the client or the contractor. With a greater effort for common goal image as FIA (2006) suggests, perhaps the mutual service would be improved. The concept loses its power if it only appears as a text in the contract. Rejlars can be procured by contractor or as subconsultants. Both cases mean that if extended collaboration between the client and the contractor/consultant occurs it is not necessary transferred to the relationship with Rejlars. This can be one explanation of Rejlars' limited experience of extended collaboration. Nevertheless, informal collaboration still occurs. The lack of clients' initiatives does not explain why Rejlars does not seize the opportunity to work and advocate extended collaboration themselves, both in projects but also internally.

Another aspect of extended collaboration is connected to Trafikverkets organizational change towards Renodlad Beställare. As the literature describes, the actors in construction are clearly linked to roles rather than individuals (Björklöf, 1986; Kodeda, 1992 in Kadefors, 1995). The transformation consultants and some clients experience as contradicting to collaboration, since it implicates that Trafikverket will procure functionality instead of technical solutions, giving over the whole responsibility to the suppliers and only act as a client without having any fingers in the jam jar. While collaboration suggests that the client and the suppliers should work together to find the best possible solution and work towards shared goals. As previously mentioned, one of the reasons for collaborating according to Oliver (1990) in Clegg et.al (2016). However, there is different interpretation regarding Trafikverket's role as a renodlad beställare. The consultants suggest having the whole responsibility and that the client is reluctant to offer help and support which is contradicting collaboration. While, the client argues that their role as Renodlad Beställare should not affect collaboration since the roles and responsibilities according to the contract still stands. Already in FIA (2006) attention was paid to the importance of roles and responsibilities to be clarified and defined in both the client's organisation and the suppliers' organisations. Again, the purpose of collaboration is important, linked to the roles and their respective responsibilities. If the collaboration is to be carried out in practice between the consultant and the client, the

client must be able to be active and helpful. This should be possible without the client performing the consultant's job which previously tended to be the case.

6 Conclusion and recommendations

In this chapter the main findings of the study are presented together with the conclusion of the thesis. Followed by recommendations for Rejlers and suggestions of future researches.

6.1 Main findings

The study shows that the general opinion about collaboration is positive among consultants and clients. This is based on the study's evaluation of personal opinions on seven selected factors which, according to relevant literature, are considered to be of importance. In addition, the perceptions confirm the positive attitude. All factors are considered important, but the factor relationship appears to be the most important, linked to collaboration between consultant and client. Since a good relationship is a prerequisite for, among other things, openness and the ability to both agree upon and to have a good dialogue. The positive attitude highlighted by the factors indicates that there is an interest in working in collaboration for both consultants and clients. However, a challenge has been identified regarding the intuitive significance of the term. The word itself has an intuitive message that seems to vary between individuals and organizations. Because of this, there is a need to clarify the meaning of the concept for business relationships in the infrastructure sector.

Another result of the study is that the current culture in the industry is perceived as unhealthy and harsh rather than helpful and friendly. The focus tends to be mostly about money, and it is easier to fool rather than to be honest. The description of the industry presents difficulties in interacting with the above-mentioned factors. Nevertheless, the study also shows that the experiences of extended collaboration, that currently takes place, is divided. The client's experience of extended collaboration is considered predominantly positive, especially to those who have a good habit and routine on how extended collaboration is performed. But there is also an awareness of that the work does not permeate the entire organization, especially in small projects and the work with Samverkan Bas. The consultants do not have positive experiences of extended collaboration and only sees it as a wording in the contract without practical application. However, the consultants believe in the concept, but it must be realized and paid for by the client. Trafikkontoret is generally positive but is humble about what challenges extended collaboration entails.

The reasons for the divided experience of extended collaboration are as follows:

- The lack of purpose and definition
- General shortage of staff and experience in the industry
- Uncertainty in responsibility and role distribution linked to consultant and client
- Consultants' non initiative for extended collaboration
- Great variation within the client's own organization. People who are passionate about extended collaboration apply it, while others look between their fingers, or only apply collaboration as a solution to conflicts.
- Inconsequential usage of collaboration leader

The above reasons can be sufficient arguments to implement extended collaboration, in a greater extent, in the industry but should not constitute the purpose of collaboration in projects. The purpose of collaboration should be project-specific and common. An

explicit purpose creates the conditions for the project's individuals to be understood and to trust both the importance and the process of extended collaboration.

In conclusion, the study shows that there is a positive attitude towards collaboration, but the concept is also intuitive and creates confusion. The experience of the extended collaboration that currently takes place shows many challenges. For example, a confusion of the roles linked to consultant and client. The study therefore suggests that the meaning of collaboration should be specified and a division of two different concepts would be appropriate, where the first one aims at a cultural change and the other to a pronounced process.

The *collaboration-culture* should describe attitudes and values in order to improve the prevailing culture in the industry, to prevent characteristics of poorly handled conflicts and distrust. An organization that intends to work in accordance with a collaboration-culture should therefore profile itself through some well-chosen value words, preferably in relation to the study's factors of collaboration: relationship, coordination, proximity, commitment, conflict, incentives and transparency. Below is an example of profiling:

Byggbrovar Anläggning AB - "we work in collaboration to create healthy relationships. Through openness and commitment, we utilize the knowledge of individuals and thus contribute to better solutions within the industry"

The *collaboration-process* should describe a formalized process with an agreed working method for how collaboration should be implemented both in the organisations and in adaption to each project. One prerequisite for the collaboration to work externally against other organizations is that the own organisation internally agrees on what collaboration means. Regardless, the starting point should be "why extended collaboration should take place" but also how. ISO-44001 is a proposal for such a process, since it can be applied to all actors in the industry.

In a project, the collaboration process should be established with a clear purpose, that is project specific. Likewise, common goals should determine a base for extended collaboration. These should be continuously monitored throughout the project. At the beginning of a project, it is also important to clarify roles and responsibilities in the project organization, and to highlight everyone's importance of the joint performance. Other important aspects of extended collaboration to be considered are conflict and risk management, well-designed incentives and the personal relationship that adds something extra to the professional work role.

To conclude, in order to avoid the conceptual confusion that today exist, the own organization must work with the collaboration-culture internally, followed by establishment of a collaboration-process in order collaborate both internally and externally in a well organised manner.

6.2 Recommendations to Rejlers

Rejlers' first step to start working with extended collaboration could be marketing the organisation with value words that describe Rejlers collaboration-culture that the organisation strives towards in projects. The work of extended collaboration should take place in a more established process internally in order to be implemented externally. By being inspired by selected parts from the standard SS-ISO-44001, a clear

working process for extended collaboration can be developed. Below is a suggestion of a collaboration-culture for Rejlers:

Rejlers superpowers are performed with excitement in collaboration and are characterized by good customer relationship, where commitment and understanding constitute the fuel for good cooperation.

Reasons for working in extended collaboration can be derived both from the work culture in the infrastructure industry, but also to an improvement of projects efficiency. As a consultant, extended collaboration can also be motivated commercially by the contractual text 'Samverkan Bas' being raised in each project. Practically as a supplement, but perhaps primarily to demonstrate an interest in changing the work culture in the infrastructure industry.

6.3 Future research

Following are some suggestions for future research on the topic of extended collaboration in the infrastructure industry presented.

One area that would be of interest to investigate is what the consultants gain from working in projects with extended collaboration, since they have trouble seeing the benefits of extended collaboration. Also, future research is needed on the impact fixed price has on extended collaboration, if it inhibits or favours extended collaboration. Related to fixed price, it would be interesting to investigate if extended collaboration is more suited in projects with fixed price or with variable price.

Further research is needed on the internal processes and work methods regarding collaboration. It would also be interesting to investigate how collaboration can be implemented internally in an organisation. Therefore, is research regarding the impact of SS-ISO 44001 in the construction industry needed in order to evaluate how the eight steps can be used as a toolkit for improved extended collaboration and internal collaboration.

It would be of interest to further investigate if and how consultants and consultants' firms have adapted to their new roles since Trafikverket has become 'Renodlad Beställare'. Also, to make an evaluation about the impacts the role as Renodlad Beställare has on the infrastructure industry. Other areas of interest would be to look into the consultant's role in Early Contractor Involvement and to investigate the relationship between consultant and contractor, since the consultant tends to have the contractor as its clients more often.

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8 Appendix – Interview guide

General information about the interviewee

- Can you tell us about yourself and your role in the organisation?
- What projects are you involved in right now?
- Are you the only person from your organisation involved in the project?

Culture and relationship between consultant and client

- How does the consultant/client role look like today?
- How is it to be a consultant/client in a infrastructure project?
- How is it to be/work towards a public client?
- Have the role of the consultant/client changed during the last 20 years? If so, how?
- How do your organisation purchase consultants?
- Do you experience any problems in the industry connected to the work between consultant and client? If so, what?
- How do you experience the culture/relationship between consultant and client?
- Seen over a long time, does previous collaboration between consultant/client affect current/future projects?

Collaboration

- How does you define collaboration?
- Have Trafikverket/Trafikkontoret/Rejlers a definition of collaboration? If so, what? If not, can there be a purpose to have it?
- What are your experiences of extended collaboration?
- Was it stated in the contract? If so, how?
- Explain to us how collaboration has worked, both informal and extended.
- According to your experience, has extended collaboration improved or worsening a project? If so, how?
- What is your general perception about extended collaboration? Advantages and disadvantages?
- In what kind of project is it suitable to work with extended collaboration?
- How do you collaborate internal in the organisation? How does the link between project and organisation work?
- How is extended collaboration led in project? External part?
- How does the constellation of people look like from "your side" of the project?

Relationship

- How meaningful is the relationship between consultant and client? In what way? And why?
- Does collaboration affect the relationship between consultant and client? If so, how?
- How is the relationship between consultant and client when not working in collaboration?
- How do you work to strengthen the relationship with the consultant/client?

Coordination

- Describe how coordination occur in collaboration-projects? (How do you coordinate your projects?)

- Are there steering documents/guidelines for collaboration? If so, how are they used? And are they followed in practise? If so, how?
- How do you and the consultant/client work in order to create a common goal vision for a project?

Proximity

- Can you give us some examples on how you work in a project concerning proximity?
- Is the consultant situated in your office? If so, to what extend? What does it get for effect?
- Do you experiencing that distance between involved parties affect the project? If so, how?
- Can proximity be a client requirement in collaborative projects? If so, why and how?
- Is there any advantages or disadvantages with project offices?

Commitment

- How do you work to increase the commitment among the project's team members?
- Based on your experience, can collaboration be a way to increase the commitment of the team members, or can it have the opposite effect? If so, how?
- How do you value the commitment form the consultant/client when purchasing?
- Is commitment connected to work performance? What does your experience say? Can you give an example?

Conflicts

- What is your view on conflicts?
- What are your experiences concerning conflicts in collaboration projects? Does it differ from "regular" projects? If so, how?
- Is it possible to avoid unnecessary conflicts? If so, how? If not, why?
- How do you handle conflicts in a collaboration project?
- Is it possible to say if conflicts occur more or less frequent in an extended collaboration project compared to a "regular" project?

Incentives

- What drives you to do a good job?
- What is your option on economic incentives?
- Do you work with incentives in collaboration projects? If so, how and what kind of incentives do you use? Do they work?

Transparency

- Is information shared between consultant and client? If so, how and what type of information? Is there information that you might not share?
- When you work in an extended collaboration project, is there a greater openness compared to a "regular" project? If so, how?
- How is the common information shared between involved parties in a collaboration project?
- Is it according to you, important to be open towards the consultant/client? Why? Why not?

Changes and improvements

- Is there a need to change the current way of working with extended collaboration? If so, what and how? Can you give an example?
- Do you think that the current trend concerning extended collaboration will continue to grow/be used in the industry? Why? Why not?
- Do you believe that guidelines/definitions/structures can contribute to how collaboration is being used in practise? Why? Or why not?
- Would you say that there is a need to work with extended collaboration?
- We are under the impression that more studies/research/development about extended collaboration has occurred on the building construction side compared to the infrastructure side in the industry, do you agree? Why do you think it is so?