Expanding the understanding of trust for suppliers

Insights from the supplier selection process in the automotive industry

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ABSTRACT

Title: Expanding the understanding of trust for suppliers - *Insights from the supplier selection process in the automotive industry*

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Background: Volvo Cars, an original equipment manufacturer (OEM) in the automotive industry expressed an interest in potentially expand the criteria used when selecting suppliers. This in an industry with a complex supply where suppliers are getting increased power. Additionally, intangible criteria are getting more attention than before in the supplier selection process. One criterion addressing these and other aspect is trust, a subject of increased interest in academics but still not fully explored.

Purpose: This study aims to expand the knowledge of what trust in a supplier is, how it is used when selecting suppliers in the automotive industry, and how these insights should be applied in the supplier selection process.

Research Questions:

1. How is trust regarding a supplier understood in the automotive industry?
2. What are the effects of being able to trust a supplier?
    - How do these stand compared to other criteria affecting the supplier selection?
3. Which qualities should a supplier possess to be considered trustworthy and how are they prioritized against each other?

Theoretical framework: The theoretical framework is based on the literature review and consists of theory regarding the questions this thesis aims to answer. The literature review included a comprehensive study of previously conducted research on subject, and the findings of the review was then categorized according to the research questions.

Method: This thesis used a case study strategy with Volvo Cars as the subject. The main steps of the methodology were:

1. Reviewing literature
2. Collecting qualitative data
    a. Qualitative interviews
3. Processing qualitative data
    a. Open coding
4. Collecting quantitative data
    a. Questionnaire
5. Processing quantitative data
    a. Statistical analysis

The primary use of a qualitative approach was believed to contribute to the purpose by adding a dimension of novelty and thereby expand the knowledge of trust. By quantitatively gathering and processing data, the analysis of the qualitative data reached a greater depth. Finally, based on both the qualitative and quantitative data, a framework was created.

Conclusions: This study show that it exists two mindsets regarding trust in a supplier, and practically a single view regarding the characteristics of trustworthiness. Further is trust understood as being entirely placed in the company of the supplier – not in the people representing it. The representatives only influence the trust placed in their company. The study also implies that trust is an important aspect to consider when selecting suppliers in the automotive industry, however not more important than e.g. price. Finally was it concluded that it exists nine qualities a supplier should possess in order be considered trustworthy. These qualities have also been given an individual weight in order illustrate its respective importance.

Keywords: Trust, supplier selection, automotive industry.

SAMMANFATTNING

Titel:	En studie för att utöka förståelse av leverantörs-tillit – *Insikter från leverantörsvalsprocessen i bilindustrin*
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Bakgrund:	Volvo Cars, en tillverkare av originalutrustning (OEM) inom fordonsindustrin uttryckte ett intresse för att eventuellt utvidga de kriterier som används vid valet av leverantörer. Detta i en bransch med en komplex försörjningskedja där leverantörerna förutses få ökat inflytande. Vidare har immateriella kriterier fått mer uppmärksamhet än tidigare i leverantörsvalprocessen. Ett kriterium som relaterar till sådana och andra aspekter är tillit, ett ämne av ökat intresse för akademiker men som ännu inte anses vara helt utforskat.
Syfte:	Denna studie ämnar utöka kunskapen om vad leverantörs-tillit är, hur det används när man väljer leverantörer inom bilindustrin och hur dessa insikter ska tillämpas i leverantörsvalprocessen.
Forskningsfrågor:	1. Hur är förtroendet för en leverantör betraktat inom bilindustrin? 2. Vilka är effekterna av att kunna lita på en leverantör? o Hur står sig dessa i förhållande till andra kriterier som påverkar leverantörsvalet? 3. Vilka egenskaper ska en leverantör besitta för att anses vara trovärdig och hur prioriteras dessa mot varandra?
Teoretiskt ramverk:	Det teoretiska ramverket är baserat på en litteraturgranskning och består av teori kring de frågor som denna avhandling ämnar svara på. Litteraturgranskningen bestod av en omfattande studie av tidigare genomförd forskning på ämnet, där resultaten av granskningen sedan kategoriserades enligt forskningsfrågorna.
Metod:	Undersökningen nyttjade en fallstudie-strategi med Volvo Personvagnar som objekt. De viktigaste stegen i metoden var:

1. Granska litteraturen
2. Samla in kvalitativa data.
    a. Kvalitativa intervjuer
3. Behandling av kvalitativa data
    a. Öppen kodning
4. Samla in kvantitativa data
    a. Frågeformulär
5. Bearbetning av kvantitativa data
    a. Statistisk analys

Den primära användningen av ett kvalitativt tillvägagångssätt bidrog till att uppfylla syftet genom att lägga till en ny dimension av undersökning och därigenom öka kunskapen om tillit. Genom att kvantitativt samla in och bearbeta data, kunde analysen av kvalitativa data nå ett större djup. Slutligen, baserat på både kvalitativa och kvantitativa data, skapades ett ramverk.

Slutsatser: Denna studie visar att det finns två allmänna inställningar gällande tillit till en leverantör, och praktiskt taget en uppfattning kring egenskaperna av trovärdighet. Vidare är tillit ansett vara helt placerat i leverantören som företag - inte i dess representanter. Företrädarna påverkar endast tilliten som är placerad i företaget de representerar. Studien antyder också att tillit är en viktig aspekt att överväga när man väljer leverantörer inom bilindustrin, dock inte viktigare än, till exempel, pris. Slutligen drogs slutsatsen att det finns nio kvaliteter som en leverantör borde ha för att betraktas som trovärdig. Dessa egenskaper har också fått en individuell vikt för att illustrera dess respektive relevans.

Nyckelord: Tillit, leverantörsval, bilindustrin.

PREFACE

This master thesis has been written during the spring of 2017 as the final part of a Master of Science in Mechanical Engineering at Lund Institute of Technology. The thesis has been written in collaboration with the department of engineering logistics and Volvo Car Corporation.

The thesis was initiated by Volvo Cars, who expressed a willingness to be proactive regarding which parameters to analyze when selecting suppliers. This willingness did not come from any issues with the current process and its criteria, but rather a question of how to improve the process and be better prepared for the future. There was an interest and a curiosity to investigate whether the supplier selection criteria should be updated or extended to stay competitive in the long run.

We would like to express our sincerest gratitude to Ulf Johansson and Malin Gullstrand, our supervisors at Volvo Cars, for the opportunity to perform the thesis and also providing with valuable assistance during the study. We would also like to thank the 26 employees at Volvo Cars that were interviewed for their participation and contribution.

Furthermore, we want thank Ala Pazirandeh, our supervisor from the department of engineering logistics, for her extensive feedback, support and dedication throughout the study.

Finally, we would like to thank friends and family for their support over the years of our education. Special thanks to Agneta and Mats Tharing for letting us stay with them during the length of this thesis

Lund, 26th June 2017

Carl Andersson

Johan Tharing

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1 INTRODUCTION

This chapter will explain the contextual background of this thesis. It will begin with a description of the two main contextual settings namely: the automotive industry and the supplier selection process. This is followed by a problem formulation which concludes into a formulation of the purpose, research questions and delimitations.

1.1 Background

1.1.1 The Automotive Industry

The automotive industry has its origins with the T-Ford (Holweg, 2008) created by Henry Ford in the early 20th century. Today, one definition of the industry is "all those companies and activities involved in the manufacture of motor vehicles, including most components, such as engines and bodies, but excluding tires, batteries, and fuel" (Rae and Binder, 2012). The industry is still typically looked upon as being old and traditional, however products and manufacturing processes are increasingly being influenced and based on new technologies (Kompalla et al., 2016). The environment in which original equipment manufacturers (OEM) and its' suppliers operate in is considered being highly competitive with complex dynamics (Reichhart and Holweg, 2008). This could, for example, be seen during the first part of the 21th century, where record profits and bankruptcy happened to both global suppliers and OEMs, simultaneously large industry mergers and de-mergers occurred (Holweg, 2008). This was largely an effect of emerging new markets, where a shift could be seen from traditional sales market, such as Western Europe, North America and Japan, to markets located in East Asia and especially China (Kompalla et al., 2016). Still, this shift do not imply that manufacturers can overlook the traditional market, even though it is increasingly difficult to compete in it due to market saturation and increased competition from East Asia (Güttner and Sommer-Dittrich, 2008). To compete, automakers can grow either at the expense of competitors, or by offering better quality (Güttner and Sommer-Dittrich, 2008).

In order to stay competitive in the automotive industry, it is important to minimize purchasing costs, attain shorter lead time and integrate a diversified resource base (Wei and Chen, 2008). Add to this, a typical car consists of approximately 15,000 parts (Wei and Chen, 2008), which makes it important that the supply chain operate as consistent and reliable as possible. To achieve this, the industry have typically turned to Lean manufacturing techniques, sprung from the Toyota Production System (Liker and Morgan, 2006). If implemented correctly, lean manufacturing techniques lead to lower production cost, increase in output, improved product quality, enhanced operator safety, and shorter production lead times (Abolhassani and Jaridi, 2016). Seeing that the main ambition with lean manufacturing is to reduce waste (e.g. buffer zones) and eliminate non-value adding work, it has led to a higher sensitivity to problems related with interruption or confusion in the material flow, which quickly could affect the

production line in a negative way (Rae and Binder, 2012). To minimize the risk of these interruptions, it is thus important to have a purchasing unit that is both effective and efficient.

Automakers purchasing departments have an important role, not only to secure supply, but also for economic reasons. This is illustrated by looking at the proportion of purchasing cost to operating income that is about 70% (Wei and Chen, 2008). At the same time, suppliers have been given an increasing amount of production and development responsibility (Güttner and Sommer-Dittrich, 2008). Which, in combination with a consolidation of the supplier market (Kompalla et al., 2016), implies that the supplier's importance and power has increased. Automakers therefore increasingly need to rely on their suppliers (Henry, 2015; Holweg, 2008). This can, for example, be seen when looking at the components being delivered to the OEMs by the suppliers, components that typically are "complex, pre-assembled modules with equally complex and hard to transfer geometries" (Güttner and Sommer-Dittrich, 2008)

Currently the automotive industry is facing radical shifts in technology. The electrification of vehicles is spanning from the removal of fossil fuels to integrating cars to both infrastructure and other cars (Gao et al., 2016). The latter leads to an increased use of software which is permeating the whole value chain (PwC, 2016). Adding to this is the increasing amount of regulations associated with an increased awareness of sustainability and CSR related questions (PwC, 2016), and higher demands from customers which imply a higher degree of flexibility (Infor.com, 2015). To be able to keep up with the rapid changes and technical improvements, Gao et al., (2016) sees an increased degree of collaboration between OEMs, its suppliers and competitors. Example of this can be seen in the pursuit of developing autonomous cars, here companies such as Volvo Cars has initiated collaborations with Uber (Volvo Car Corporation, 2016a) and Autoliv (Volvo Car Corporation, 2017) to overcome technical difficulties.

In conclusion, it is apparent that the changing characteristics of the supplier base, technological advances and increased pressure sprung from customer demands, requires OEMs to more extensively evaluate their suppliers prior to the selection stage. By doing so, OEMs can ensure a consistent and reliable supply chain supported by suppliers capable of delivering increasingly complex components without taking advantage of their increased importance in the value chain.

1.1.2 Supplier Selection

Prior to selecting a supplier, purchasing requirements needs to be translated into technical and functional specifications. Along with these specifications, cost-estimates related to the requirements are typically made by internal functions. These estimates assist the purchaser during the entire selection process, since it serves as a reference during negotiations with potential suppliers.

The actual selection process can be divided into four major different steps. First, the buyer decides on the method of subcontracting, basically choosing between turnkey or partial contracts. Second, the preliminary suppliers in possession of pre-qualifying capabilities are

places on a "bidders'" long-list. Third, the request for quotation (RfQ) is prepared and the received bids are analyzed and compared with cost-estimates. The fourth and final step involves the actual selection of a supplier. (van Weele, 2014)

The process of selecting suppliers is extensive and of great importance; "The selection of a supplier is one of the most important steps in the purchasing process and several activities precede this decision" (van Weele, 2014). The "bidders'" long-list consists of suppliers that have indicated that they could meet the requirements. This list often involves previous suppliers of good performance. By narrowing this list down, the "bidders'" short-list is created. Its participants are all recipients of the RfQ, who responds by returning a bid based on the RfQ. After receiving the bids, the buyer can compare the content with internally calculated estimates but also between suppliers competing for the business. The quotation is followed by an evaluation of a suppliers regarding several aspects, such as technical, logistical and financial capabilities. Ultimately the evaluation ends with one supplier being selected and the purchasing process continues into negotiation. (van Weele, 2014)

Except for quality, delivery, cost and other traditional economic criteria, different factors have raised in importance (Wang et al., 2017). Example of such are requirements regarding environmental sustainability (Wang et al., 2017). Additional factors that are influencing the selection of suppliers more than before, are intangibles such as honesty and reputation (Yadav and Kumar Sharma, 2016). The supplier selection process for automotive manufacturers is affected by its supply chain structure where high dependencies between components, modules and systems exists (Behncke et al., 2011). This makes the process more complicated, hence it is of increased importance that the suppliers has competencies beyond development and production (Behncke et al., 2011). For example, this means competencies in module assemblies and the procurement of non-core components (Behncke et al., 2011).

1.1.3 Volvo Car Corporation

Volvo Car Corporation (Volvo Cars) is a Swedish automobile company founded 1927 by Assar Gabrielsson and Gustav Larsson in Gothenburg, Sweden. Today, the company is still based in Gothenburg and has become one of the most well-known premium car manufacturer in the world, competing with companies such as Audi, Mercedes-Benz and BMW. In 2016, Volvo Cars had 30,000 employees, sold 534 332 cars, creating a net revenue of 180,672 MSEK with an EBIT margin of 6.1 percent (Volvo Car Corporation, 2016b).

Volvo Cars have a global footprint with sales network of dealers in over 100 countries and production plants in Torslanda (Sweden), Ghent (Belgium), Chengdu (China), Daqing (China), Luqiao (China) and starting in 2018, one in Charleston (USA) (Volvo Car Corporation, 2016b). To operate the supply chain, Volvo Cars cooperate with 4,000 preferred suppliers around the globe (Volvo Car Corporation, 2016b). Currently, the company's main markets are Western Europe (39%), China (17%), US (15%) and Sweden (13%), while the remaining markets has a share of 16% (Volvo Car Corporation, 2016b). To ensure an efficient supply chain and reduce

their environmental footprint, the company is actively working on implementing, and improving, a lean way of thinking across all functions and levels.

Volvo Cars have three core values on which their business is based upon. First, there is safety, which imply that the company shall "maintain industry leading competence in safety". Secondly, there is quality, which include to the company's desire to "be committed to excellence in execution, efficient and flexible, and drive continuous improvements throughout all value chains". Finally, there is the environment, where the company strive to "create wise and responsible products and services, to our customers and the world around us". (Volvo Car Corporation, 2016b)

1.1.4 Volvo Cars Direct Material & Program Purchasing

Volvo Cars Direct Material & Program purchasing (DM) is a global function responsible for developing purchasing strategies and its execution, including new vehicle sourcing & program management. It is also responsible for the supplier selection, supplier foot-print optimization and non-design cost reduction for all direct materials supplies to Volvo Cars production, engineering and customer service facilities. The function is authorized for the placement of contracts, purchase orders and business awards, including formal communication with external suppliers (Volvo Car Corporation, 2016c). DM have a clearly defined purchasing process that is activated when there is a need for external supplies.

In short, the purchasing process is initiated when there is an internal need, typically from an engineering department such as Research & Development (R&D). Sprung this need, the sourcing phase begins. This consist of formal steps to select appropriate suppliers, e.g. establishing and agreeing on a sourcing plan, inviting appropriate suppliers to provide with solution proposals, requesting quotation from suppliers and finalizing an agreement. The next step is the ordering process, where DM placed the purchase order at the supplier. The final step include a process verification which is managed by Supplier Quality Management Department (SQM). (Volvo Car Corporation, 2016c)

Even though the purchasing process is described as being linear, it is important to emphasize that the process of acquiring direct material is a cross-functional effort containing several different stakeholders. These stakeholders interact throughout the entire process. In Figure 1, an illustrative view of the processes and their order can be seen. (Volvo Car Corporation, 2016c)

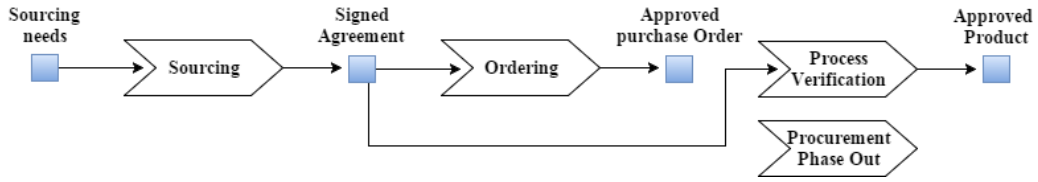


Figure 1 - Direct Material purchasing flowchart (adapted from Volvo Car Corporation, 2016c)

In the sourcing phase of the supplier selection process, it exists three main stakeholders. These are the R&D department and the purchasing department, which consist of both purchasing and SQM (Volvo Car Corporation, 2016c). Their respective roles within this phase are briefly described below.

Purchasing

Responsible for the purchase of material, and establishing, maintaining and developing a competitive supplier base in a long-term perspective and deliver products according to targets. This implies that they are responsible for making agreements and contracts, negotiate an optimal cost level, develop and utilize strategies to maximize corporate synergies and act as main contact for all commercial issues towards the supplier base. (Volvo Car Corporation, 2016c)

Research & Development

Responsible for the development and defining of a balanced technical/economical solution for one's system area which works together with adjoining system areas. This implies that they have the authority and mandate to take decisions within given frames regarding requirements, technology and resources. (Volvo Car Corporation, 2016c)

Supplier Quality Management

Responsible for securing that the supply base can produce and deliver parts within specification to the required volume. (Volvo Car Corporation, 2016c)

1.2 Problem Statement

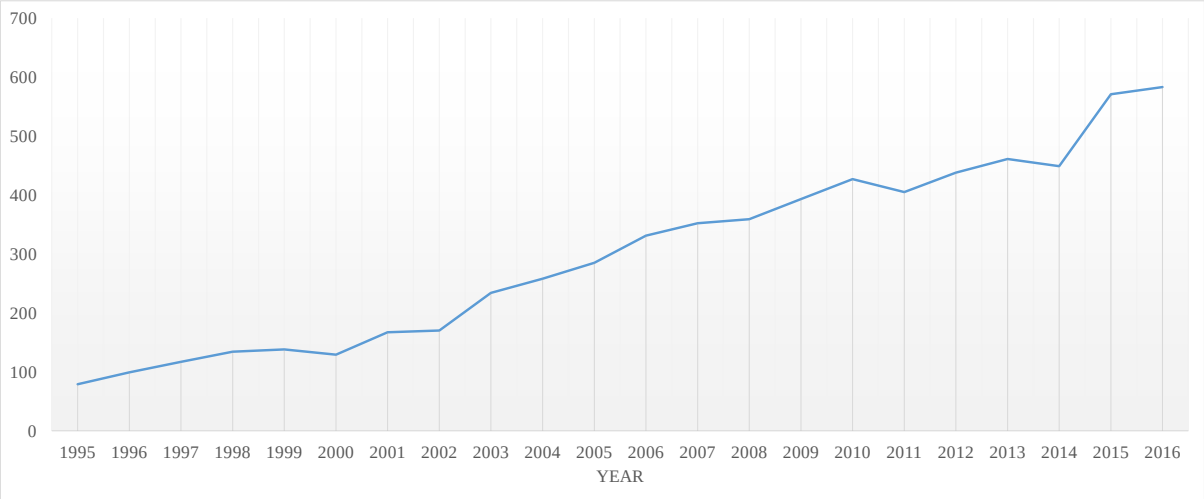
Volvo Cars expressed concerns relating to the selection of suppliers. It was described that there are characteristics associated with the product development cycle at Volvo Cars that highlighted the importance of choosing suppliers with caution. Firstly, Volvo Cars are bound to the supplier during the entire production cycle of seven years (VCC Employee, 2017). Secondly, suppliers are contracted well ahead of the full-scale line production of a new car, typically two years ahead of production start (VCC Employee, 2017). This means that Volvo Cars is closely bound to its suppliers during the entire product development phase, which typically is characterized by frequent changes of technical specifications (VCC Employee, 2017). Therefore, the cost associated with substituting a supplier is increasing as the production date is approaching (VCC Employee, 2017). These factors combined imply that it is important that Volvo Cars can ensure that its suppliers are capable of delivering according to plan and at the same time acting without the intention of taking advantage of the situation. This include factors such as the willingness to adjust contracted specifications without an unreasonable increase of cost. Finally, the company is rapidly growing, which mean that there is less time to continuously monitor its suppliers (VCC Employee, 2017).

The complex product development cycle in combination with the increased influence and importance of the suppliers in automotive industry, are in line with the findings of Wang et al., (2017) and Yadav and Kumar Sharma (2016). Where tendencies were seen that it is becoming increasingly complex to select suppliers due to the inclusion of intangible decision criteria beyond tangible ones such as cost. Hence, proactive work to estimate and investigate which criteria to include in the selection process, could be of value in the long run. A parameter, with potential to address the issue of suppliers potentially taking advantage of their strengthened position, and also relate to an inclusion of new untraditional parameters, is trust. If Volvo Cars can ensure that trustworthy suppliers are selected in an initial phase of the process, the long-term dependence of these would be of reduced concern. The absence of trust-assessment mechanisms does, as one VCC employee articulated, "undoubtedly lead to a negative effect on the total outcome" (VCC Employee, 2017).

In other words, the selection of suppliers are showing signs of being of increased importance in the future of the automotive industry, and also showing tendencies of becoming more complex in terms of including intangibles beyond economic criteria (Wang et al., 2017; Yadav and Kumar Sharma, 2016).

During the last two decades, trust in suppliers has been a recurrent subject of research, e.g. Agndal and Nilsson (2008; Akrout (2015); Doney and Cannon (1997); Dyer and Chu (2000); Khosrowjerdi (2016); Villena et al. (2016) and Zaheer et al. (1998). Looking at the number of published articles on trust in suppliers since 1995, retrieved from Emerald Insight (2017), an increasing trend is clear (see Figure 2). This implies that the topic is of growing interest at the same time as it suggests that the subject not yet is fully explored.

Figure 2 - Number of articles published with supplier + trust in the abstract



These studies on trust in suppliers has mainly been constructed to evaluate a researcher's own hypotheses, for example regarding what it is, the impact of contextual factors or how it is valued. This is often done by distributing surveys to industry representatives and then test the significance of the answers through statistical analysis (Dyer and Chu, 2000; Johnson and Grayson, 2005; Jones et al., 2014; Stuart et al., 2012; Svensson, 2001; Zhou et al., 2016). Further, researchers has established measures of trust in suppliers (Seppänen et al., 2007), but it has also been clarified that it is difficult to create generic concepts that are valid in several industries and contexts (Whipple et al., 2013). The potential value of being able to trust a supplier has been discussed in several studies, usually around positive aspects (Johnson and Grayson, 2005; Valtakoski, 2015; Zaheer et al., 1998) but negative aspects have also been discussed (Villena et al., 2016)

In this thesis, Volvo Cars will be used as a subject for a case to further investigate the role of trust when selecting suppliers in the automotive industry. With more stated advantages than disadvantages identified in theory, the trustworthiness of suppliers should be valued in practice as well. However, as these aspects previously has been investigated using quantitative methods and thereby limited by the researcher's own understanding of the subject, a qualitative method might result in different conclusions regarding how trust is understood.

This thesis will utilize qualitative methods to investigate the understanding of trust when selecting supplier in an automotive industry context. The result from this investigation will be compared to existing literature to identify any discrepancies or similarities. Ultimately, the result will be used in an attempt to construct a framework to assess the trustworthiness of a supplier. The research will focus on expanding the understanding of how trust regarding a supplier is understood, which qualities that are needed for a supplier to be considered trustworthy, and examine trust as a supplier selection criterion by understanding the effects and value compared to other criteria.

To conclude, this study aims to provide with insights to both the industry as well as academia. Firstly, it contributes to the industry by evaluating a criterion to include in the supplier selection process, and secondly it contributes to the academia by deepening the understanding of how a buyer trusts a supplier.

1.3 Purpose

This study aims to expand the knowledge of what trust in a supplier is, how it is used when selecting suppliers in the automotive industry, and how these insights should be applied in the supplier selection process.

1.4 Research Questions

1. How is trust regarding a supplier understood in the automotive industry?

2. What are the effects of being able to trust a supplier?
    a. How do these stand compared to other criteria affecting the supplier selection?

3. Which qualities should a supplier possess to be considered trustworthy and how are these prioritized against each other?

1.5 Delimitations

The study will treat trust in a supplier from a buyer's perspective, in other words from an OEM. The case study takes place in the context of the automotive industry, hence the result cannot be assumed generic; it might be affected by contextual factors. Moreover, the study will mainly be based on data gathered from Volvo Cars' purchasing department in Gothenburg. This might limit the possibility of acquiring a culturally diverse dataset, which imply that the result could be affected by social factors to such degree that it is not applicable in other regions.

The thesis was conducted during a period of 20 weeks, which has consequences in terms of the size of data collection and the depth of analysis. Regarding size of collected data, the study would benefit from large quantities but due to time constraints, the number of interviews was limited to 26. Additionally, it would be interesting to include other OEMs in the data collection to further ensure an industry-wide applicability. The depth of analysis, also constrained by time, will not go into detail in terms of understanding the underlying causes to potential gaps between theory and practice.

2 THEORETICAL BACKGROUND

This chapter will present the theoretical background of this thesis. It will begin with a description of different aspects of trust based on a literature review, which then is condensed into a concluding section.

2.1 How trust is understood

Trust is a concept that has received attention from numerous fields and sciences. This has led to a variety of definitions and types (Whipple et al., 2013). Schurr and Ozanne (1985) defines trust as "the belief that a party's word or promise is reliable and that a party will fulfil his/her obligations in an exchange relationship". Another, shorter definition is that trust is an "accepted vulnerability to another's possible but not expected ill will (or lack good will)" (Baier, 1986). A explanation adding the phenomenon of confidence is made by Morgan and Hunt (1994), who argue that trust exists when one party has confidence in an exchange partner's reliability and integrity. In line with these definitions Doney and Cannon (1997), based on their literature review, concluded that "regardless of the level of analysis, trusting parties must be vulnerable to some extent for trust to become operational". For trust to exist, it requires at least two parties, where one act as the trustor, and the other as the trustee (Laeequddin and Sardana, 2010). The trustor is defined as the one being placed in vulnerable situation under uncertainty, and the trustee is the party where the trust is being placed (Laeequddin and Sardana, 2010). Building on Doney and Cannon (1997) conclusion, the outcome of the decision to trust must be both uncertain and important for the trustor. Finally, another definition suggesting two components of trust is "the perceived credibility and benevolence of a target of trust" (Doney and Cannon, 1997).

The perspective of trust, i.e. the level and context in which the trustor and trustee operates, has an impact on whether some or none of the components should be given extra attention. Whipple et al. (2013) investigated the numerous attempts being made to conceptualize trust, and found that trust has been discussed on four different levels, namely: interpersonal (between individuals), organizational (between individuals and an organization), inter-organizational (between organizations) and on an inter-organizational network-level (between one and many organizations), where inter-organizational trust has been the one most studied (Whipple et al., 2013). Within a business relationship, Doney and Cannon (1997) suggest that the buyers should differ between trust established between the seller organization and the individuals representing that organization. Additionally, Dyer and Chu (2000), concludes, based on a study in the automotive industry, that interpersonal trust does not translate into inter-organizational trust. Instead inter-organizational trust is highly based on processes on which the business is built upon. Impersonal process and routines develops a solid context for exchange, which allow individuals within the organization to come and go without affecting the organizational trust (Dyer and Chu, 2000). Based on this, a new perspective of trust is explained, namely "process-based trust" (Dyer and Chu, 2000). A different perspective was brought up by Svensson (2001),

who saw a correlation in terms of companies having high perceived trust in supplier also having it in its customers (Svensson, 2001). In other words, a trusting stance towards business partners seem to be somewhat connected to the company culture.

Whipple et al. (2013) concludes that three perspectives of trust has been considered, namely: economical/calculative, psychological and sociological. From an economical perspective, trust is estimated by calculating economic risks. The psychological perspective focus on "internal cognitions that personal attributes yield". Finally, the sociological perspective concerns the "trust in socially embedded properties of relationships among people or institutions". Another author that refers to levels of trust is Stuart et al. (2012), who considers levels being a matter of depth of trust. Weak levels of trust are present when vulnerabilities are not, making trust irrelevant. Semi-strong levels of trust correlates with the existence of legal penalty clause covers violations. Strong levels of trust is present if the parties involved has an operating philosophy that is consistent with trustworthiness (Stuart et al., 2012).

Looking at different types and dimensions of trust, Lewicki and Bunker (1994) describes three types of trust in business relationships: "calculus-based trust", "knowledge-based trust" and "identification-based trust". Calculus-based trust refers, as the name suggests, to trust derived from calculation. It is a transactional view of trust and it is based on a determination of benefits of staying in a relationship versus cheating on it, and the costs of staying versus breaking it; in other words based on an rational choice (Lewicki and Bunker, 1994). Knowledge-based trust is sprung from the predictability of others, i.e. to what extent the behavior can be anticipated (Lewicki and Bunker, 1994). It requires an understanding about the trustee to be able to accurately predict their behavior (Lewicki and Bunker, 1994). Identification-based trust is based on a full internalization of the desires and intentions of an trustor or trustee (Lewicki and Bunker, 1994). Building on Lewicki and Bunker (1994), Akrout (2015) suggests three developed dimensions of trust, these are based on calculations, cognition and affection. The modified dimensions, cognition and affection, are described as trust maintained by being able to predict another person's behavior, respectively trust sprung from empathy with another's wishes and needs.

Johnson and Grayson (2005) in their study of trust in service relations, concluded that trust is built upon cognitive and affective trust. Rousseau et al. (1998) identifies four different kinds of trust, where calculus based trust is included. The others are deterrence-based, that depends on contracts and potential penalties related with breaking trust; relational trust, which is derived from repeated interactions between trustor and trustee; and institution-based trust, which can ease the way to formulate both calculus-based and relational trust. Seeing that "ex ante deterrents may promote trust, because one's confidence that reputation matters permits relationships to form in the first place". Worth noting is that Rousseau et al. (1998) suggests that deterrence based trust might not be trust at all and is instead closer associated to low levels of distrusts.

A recent study describes, based on a literature review, numerous types of trust in society that is related to the earlier mentioned types but are more specified. Examples of these are: referral trust versus functional trust, where referral corresponds with indirect trust created through others, and functional corresponds with direct experience. Routine trust is related to "long-term" interactions, for example an individual's attitude towards the supermarket providing his or her daily requirements. Specific trust comes from direct experiences of others, which over time will evolve. This type is much related to knowledge-based trust. Finally, another interesting aspect of trust is that of "dispositional trust", which corresponds to individual traits regarding the inherent willingness for a trusting stance (Khosrowjerdi, 2016). In summary the different definitions, levels and perspectives can be seen in Table 1, Table 2 and Table 3.

Table 1 - Statements regarding trust according to theory

Statements regarding trust	**Author**
"the belief that a party's word or promise is reliable and that a party will fulfil his/her obligations in an exchange relationship"	Schurr and Ozanne (1985)
"accepted vulnerability to another's possible but not expected ill will (or lack good will)"	Baier (1986)
"Trust is existing when one party have confidence in an exchange partner's reliability and integrity"	Morgan and Hunt (1994)
"regardless of the level of analysis, trusting parties must be vulnerable to some extent for trust to become operational"	Doney and Cannon (1997)
"trust relation implies the participation of at least two parties, a trustor and a trustee"	Laeequddin and Sardana (2010)
"the perceived credibility and benevolence of a target of trust"	Doney and Cannon (1997)
"Buyer should differ between trust established between the seller organization and the individuals representing that organization"	Doney and Cannon (1997)

Table 2 - Levels of trust according to theory

Levels of trust	Description	Author
Interpersonal trust	Trust between individuals	*Whipple et al. (2013)*
Organizational trust	Trust between an individual and an organization	
Interorganizational trust	Trust between two organizations	
Interorganizational network	Trust between on and many organizations	
Weak level	Present when vulnerabilities are not	*Stuart et al. (2012)*
Semi-strong level	Correlates with the existance of legal penalty clauses that covers violations	
Strong level	Present if parties involved has an operating philosphy that is consistent with trustworthiness	

Table 3 - Perspectives of trust according to theory

Perspective of trust	Description	Author
Economical	Trust is estimated by calculations regarding risks	*Whipple et al. (2013)*
Psychological	Trust is estimated by the "internal cognitions that personal attributes yield"	
Sociological	Trust is estimated by the relationship among people or institutions	

2.2 Trust as a supplier selection criterion

Tanskanen and Aminoff (2015) investigates the drivers behind the attractiveness of a buyer and supplier in strategic relationships. It is concluded that trust is one of the most important drivers of behavior-based attractiveness and that a long-term collaboration indicates how attractiveness enables trust and respect between the firms to grow initially (Tanskanen and Aminoff, 2015). In their research on trust's potential to create advantages for small firms, Jones et al. (2014) finds that vulnerability associated with size can be mitigated by trust. It can also aid small firms to more effectively establish collaborations that can bring relational advantages and improve the performance of the firm (Jones et al., 2014). When initiating a buyer supplier relationship, trust along with reputation and mutual goals are considered to be more important than investments and commitment (Valtakoski, 2015).

A supplier showing trustworthiness in terms of being willing to make upfront investments, is very likely to continuously provide with high quality if given a high price contract. Hence, awarding high price to such suppliers when quality is non-contractible, is a good solution to ensure high quality (Beer et al., 2014). In one of their more recent studies on trust in the automotive industry, Dyer and Chu (2011), saw a correlation between an automaker's trustworthiness and its market-share performance (Dyer and Chu, 2011).

Several researchers have highlighted the value of trust associated with transaction performance. Zaheer et al. (1998) for example, argues that negotiations are less costly in situations where high inter-organizational trust is present. The reason behind this, is that agreements more quickly can be reached since the parties are more likely to reach consensus. Additionally, the same authors found that in situations where trust between the negotiating parties is high, it simultaneously increases the chances of the development of solutions where focus lie on the problem at hand rather than the personalities involved. In a similar manner, Chiles and McMackin (1996) reach the same conclusion. However, by instead referring to the creation of a "game-type approach to negotiations in which actors are cooperative and quick to come to a resolution rather than a tactical-type approach in which actors are cautious and slow to come to a resolution". Chiles and McMackin (1996) also point towards another aspect of the matter at hand, namely bounded rationality. A term that refers to the fact that "human behavior is intendedly rational, but only limitedly so" (Simon, 1997). This implies that it is difficult, if not impossible, and time consuming to form a contract that accounts for every possible outcome, due to the cognitive limitations of the human mind. However, in a relationship based on trust, the necessity for considering all potential outcomes is lower. Other studies have also indicated improved transaction performance, as Doney and Cannon found that a high level of trust between a buyer and a supplier both enhances its' respective competitiveness and reduces the transactions costs (Doney and Cannon, 1997). In a research based on the automotive industry, it was found that there is a correlation between low trust levels and high transaction cost. This was revealed by making a comparison between the number of employees that are involved in a procurement divided by the total value of the purchased goods, and high and low trust levels of the supplier. In addition to these insights, it was also concluded that trust has a positive impact on information sharing (Chu and Dyer, 1996).

Another advantage of trust between parties in business settings is highlighted by Seppänen et al. (2007), where the authors mention factors such as an increase of predictability, adaptability and strategic flexibility. Moreover, trust is also mentioned as a catalyst to solve the problem with sub-optimizations within a chain of actors (Six, 2014). Initially it might be difficult to see the benefits of operation from any other perspective than a pure individualistic one. However, as previously mentioned, this approach undoubtedly leads to sub-optimizations. To find efficient solutions, a trusting stance between the actors is important (Six, 2014).

Villena et al. (2016), examined trust in buyer supplier relationship characterized by high dependencies. The study showed that trust has a positive impact on performance indicators such

as efficiency and responsiveness. However the study also showed that there seem to exist situations where too much trust is present, leading to a reduction of efficiency. This reduction can be derived from the fact that the buyer's objectivity might decline in those situations, which could lead to a reduction of monitoring efforts, over-commitment and a preference of quickly accepting supplier's suggestions. Hence measures must be taken to ensure that excessive trust does not lead to a loss of objectivity. (Villena et al., 2016)

In summary, no existing literature was found to have the approach of assessing trust as a criterion in the supplier selection process. However regarding the effects trust could have, researchers have stated far many more benefits with being able to trust suppliers than disadvantages. The benefits can be seen in Table 4.

Table 4 - Positive aspects of trust according to theory

Positive Aspect	Description	Author
Improve Collaboration	Improvement in effectiveness and the amount of information shared. In general, better collaboration if trust exist between the parties.	*Tanskanen and Aminoff (2015); Jones et al. (2011); Chiles and McMackin (1996); Chu and Dyer (1996)*
Improve Efficiency / Decrease Cost	Increased efficiency in general, but especially during negotiations. Less necessity to consider all potential outcomes when establishing contracts. Predictability and responsiveness are likely to increase. Finally, transaction costs will decrease since the accumulated hours spent per suppliers will be less.	*Chiles and McMackin (1996); Zaheer et al. (1998); Villena et al.(2016); Chu and Dyer (1996); Seppänen et al. (2007)*
Improve business	Market-share performance increases, ability to ensure quality when it is non-contractible, and it can act as a catalyst to solve problems with sub-optimization. Further it has been stated to drive behavior-based attractiveness.	*Tanskanen and Aminoff (2015); Jones et al. (2011); Chu and Dyer (1996); Valtakoski (2015); Six (2014); Beer et al. (2014)*

2.3 Qualities that result in trust

The components of trust are, as the definitions and types, many. Ganesan (1994) focuses on credibility, which is based on a retailer's belief that a vendor has capabilities and expertise to perform the required task effectively and reliable, and benevolence, which focuses on the retailer's belief that a vendor has intentions and motives that are beneficial to the retailer when new conditions arise. Mayer et al. (1995) see the components being, in addition to benevolence, ability and integrity. It is motivated by the fact that those three characteristics captures the major portion of trustworthiness and thereby creates a solid ground for investigating the trust of another party. Ability relates to the skills and competences, while integrity relates to the trustor's recognition that the trustee use a set of certain acceptable, from the perspective of the trustor, principles. Zaheer et al. (1998) uses another terminology in where trust is built out of reliability, predictability and fairness. However, they also suggest that the three components can be expressed in form of cognitive, behavioral and emotional - which highly relates to Mayer et al. (1995) description. Pirson and Malhotra (2010) suggest six different dimensions of organizational trustworthiness, namely; managerial competence, technical competence, integrity, benevolence, identification and transparency. Where identification refers to the "the understanding and internalization of the interests and intentions of the other party, based on shared values and commitment" (Pirson and Malhotra, 2010), while transparency includes factors such as to which degree an organization is willing to "explain its decisions", "openly share relevant information" or "says if something goes wrong" (Pirson and Malhotra, 2010). Finally, Svensson (2001) categorizes the constructs using Swan et al. (1985) dimensions, thus using five different categories, namely; dependability/reliability, honesty, competence, friendliness and buyer/seller orientation. Where "buyer/seller orientation" include factors such as "altruism, business sense and judgement, congruence, intentions and motives", and honesty include fairness and motivation to lie (Svensson, 2001). Honesty was further supported as a factor of relevance by Jones et al. (2010) and Whipple et al. (2013).

Increasing the level of trust is a cross functional process that involves different kinds of assessments. The trustor should estimate the cost of a target not acting trustworthy, where factors such as the firm's size, reputation and willingness to share confidential information should be considered. The trustor shall evaluate the degree of confidence it has towards the target's behavior based on factors such as length of previous relationship, and capabilities based on the salesperson's expertise, power and intentions. The assessment of intentions can, for example, be based on the organization's willingness to provide customized solutions. Lastly, sources influencing the assessments should be evaluated to ensure its' validity. (Doney and Cannon, 1997)

In order to create a foundation that allows for trust to emerge, researchers often refers to the factor of mutual goals and interests. Akrout (2015) suggest that it is "paramount to pave a way for the emergence of trust" that companies create a "fertile ground that encourages mutual interest-seeking, needs and expectations management". A statement that simultaneously is in

line with Pirson and Malhotra (2010) with the inclusion of the dimension of "identification" in their study on organizational trust, which refers to "the understanding and internalization of the interests and intentions of the other party, based on shared values and commitment" (Pirson and Malhotra, 2010). In a similar manner, Hardin (2002), claimed that trust is solely a "encapsulation of interest". He also argues that the trustee takes the trustor's interest into consideration only because they value the continuation of the relationship.

Valtakoski (2015) looks at the initiation of buyer-seller relationships, and identifies Johnson and Grayson's (2005) view that trust has two dimensions: cognitive and affective, as suitable when evaluating trust in the context of such relationships. Within the two dimensions, different attributes leads to different strategies to assess the level of trust (Valtakoski, 2015). In the cognitive dimension, factors such as credible demonstrations of success in implementing past solutions and the presence of formal education to demonstrate expertise related to the offerings (Valtakoski, 2015). For the affective dimension, factors of interest are for example the other firm's brand, sacrifices made to participate in meetings abroad and allocate resources, and the knowledge of local competition (Valtakoski, 2015).

In their study on trust in buyer-supplier relationships in North America, Stuart et al. (2012) concludes that trust in a supplier from a buyer's perspective, is mainly defined by delivery reliability, quality conformance and general expectations of what constitutes good supply. In addition, another finding was that interpersonal communication between the buyer's and supplier's employees did not have any significant impact on trust. Managers saw trust as consistent with terms such as dependability and reliability; trust seemed to be synonymous with meeting expectations of the customer (Stuart et al., 2012).

The level of dependency between the buyer and supplier is of significance for which qualities of trustworthiness usually being looked for (Clark et al., 2010). Shallow levels of dependence relies on objective values such as discretion and reliability/competence, while deep levels require examination of more subjective values such as integrity, concern and benevolence (Clark et al., 2010). Another signal regarding the trustworthiness of a supplier is reflected by whether it is willing to make upfront relation specific investments (Beer et al., 2014). This kind of action distinguish a supplier from others that might choose general investments that gives more outside alternatives, in terms of other buyers (Beer et al., 2014).

In a study concerning the level and impact of trust, in the automotive industry of Japan, United States and Korea, Chu and Dyer (1996) showed that OEM's trust in their suppliers was higher in Japan compared to the United States and Korea. This finding correlated with the fact that Japanese OEMs also had the longest existing relationship with its suppliers. It was also concluded that "revealed committed behavior" is more important than social interactions or stock-ownership, and that continuity of a relationship and high assistance creates trust between the suppliers and OEMs of the studied countries.

In his study on the perceived trust towards suppliers and customers in a lean, responsive and agile supply chain, Svensson (2001) uses the Automotive industry to represent such environment. By using Swan et al. (1985) attributes of trust, i.e. dependability, honesty, competence, customer orientation, and likeability, a questionnaire regarding perceived trust was made. The population chosen to receive the questionnaire was producing companies that supplied materials and components to car manufacturers, i.e. no OEMs was included in the study. The result, derived from a statistical analysis, showed that companies uses various dimensions to estimate the trust of suppliers and customers (Svensson, 2001).

Trust has also been mentioned as a prerequisite for implementing open-book policies (Agndal and Nilsson, 2008). A policy that requires at least one party to "open their books" and be transparent in the way they charge for a product or service. Simultaneously, an open-book policy can be used as "a way of showing trust and openness" (Agndal and Nilsson, 2008).

In summary the qualities a supplier should possess in order to be considered trustworthy can be seen in Table 5.

Table 5 - Qualities of trust according to theory

Qualities	Description	Authors
Affection	Refers to an organizations affective abilities. Such abilities can be committed behavior, willingness to customize and make upfront investments, concern and benevolence.	*Doney and Cannon (1997);Johnson and Grayson (2005); Chu and Dyer (1996); Clark et al., (2010);Beer et al., (2014); Swan et al. (1985); Pirson & Malhotra (2011)*
Competence	Refers to an organizations expertise, formal education and quality conformance. In short terms, if the company can be considered competent enough.	*Doney and Cannon (1997); Johnson and Grayson (2005); Chu and Dyer (1996); Stuart et al., (2012); Clark et al., (2010); Swan et al. (1985); Pirson & Malhotra (2011)*
Experience	Experience relate to both own experience and other's. Own experience refers to e.g. dependability, delivery reliability and ability of meeting expectations. Other's experiences refers to credibility aspects such as reputation and firm size.	*Doney and Cannon (1997); Stuart et al., (2012); Chu and Dyer (1996); Clark et al. (2010); Swan et al. (1985)*
Honesty	Refers to the fairness of a supplier and their motivation to lie. It also relates to the supplier not making false claims.	*Swan et al. (1985); Svensson (2001); Jones et al. (2010); Whipple et al. (2010)*
Strategic Fit	Sharing mutual goals and interest. Possible to identify with another organization based on a shared set of values.	*Akrout (2015); Pirson & Malhotra (2011)*
Transparency	An organizations ability and willingness to be transparent. Transparency in this regard refers to e.g. sharing confidential information, open-book policies and generally have transparent processes	*Doney and Cannon (1997; Agndal and Nilsson (2008); Pirson & Malhotra (2011)*

2.4 Concluding Remarks

As seen in the theoretical background, depending on the researcher, different terminologies are used to describe trust and what it consists of. Researchers can, for example, refer to different types, dimensions, components or constructs. However, regardless of what word is being used, they typically refer to similar traits. For example, words as benevolence and cognition are by some researcher called a dimension, while others call it a construct. When studying the essentials of what is intended to be described with a certain word, it also becomes clear that much is similar. For example cognition, credibility and ability almost describe the same attributes of "hard aspects" contributing to trust since these factors can be examined by looking at historical fact or other credible demonstrations of skills. In the same way does affection, benevolence and emotions relate to "soft aspects", in terms of them being factors that are difficult to measure objectively in a consistent manner. In conclusion it could be stated that these soft and hard aspects combined results in a belief which has been given its own term, namely trust.

As stated in the previous section, trust can be considered being built upon a combination between hard and soft aspects. Depending on which *type* of trust that is being examined, different *components* will be present. The components construct the type. For example, when examining the hard aspects of trust, one should look for objective components that can be identified and evaluated through calculations; by looking at past behavior; or by observing deviations from prediction. These could for example consist of parameters such as delivery accuracy or quality conformance. On the other hand, when examining soft aspects, more subjective measures are instead being evaluated. For example, in terms of personal judgements on parameters such as relationships, interactions and behavior. In other words, the soft aspects can be considered being a feeling regarding the perceived intentions and desires of a potential trustee.

Table 6 and Table 7 further exemplify the rationale behind the categorization of the trust aspects depending on the author.

Table 6 - Hard aspects of trust

Hard aspects		
Type	**Description**	**Author**
Calculus-based trust	Calculate benefits of staying vs. cheating	*Lewicki and Bunker (1994), Akrout (2015), Rosseau et al. (1998)*
Knowledge-based trust	Predictability of others. Ability to anticipate behavior.	*Lewicki and Bunker (1994)*
Cognition	Predict behavior. Understanding of actions.	*Akrout, (2015), Johnson and Grayson (2005)*
Institution-based trust	Trust in systems or situations, not tied to a person.	*Rosseau et al. (1998)*
Deterrence-based trust	Tied to penalties related to breaking trust.	*Rosseau et al. (1998)*
Specific trust	Direct experience of others. Related to knowledge-based trust.	*Khosrowjerdi (2016)*
Process-based trust	Practically independent on individuals. Trust relies on well-designed processes	*Dyer and Chu (2000)*
Quality	**Description**	**Author**
Credibility, ability, cognition	Belief that required capabilities and expertise exists. Competences.	*Ganesan (1994), Mayer et al (1995), Zaheer et al. (1998)*
Predictability	Degree of being able to anticipate behavior or actions	*Zaheer et al., (1998)*
Behavioral	Degree of being able to anticipate behavior or actions	*Zaheer et al., (1998)*
Reliability	Degree of being able to anticipate behavior or actions	*Zaheer et al., (1998)*

Table 7 - Soft aspects of trust

Soft aspects		
Type	**Description**	**Author**
Identification-based trust	Based on desires and intentions.	*Lewicki and Bunker (1994)*
Affection	Empathy with others' wishes and needs.	*Akrout, (2015), Johnson and Grayson (2005)*
Relational trust	Repeated interactions.	*Rosseau et al. (1998)*
Routine trust	Related to long term interactions.	*Khosrowjerdi (2016)*
Quality	**Description**	**Author**
Benevolence, fairness	Belief that intentions and motives are beneficial even when new conditions arise.	*Ganesan (1994) & Mayer et al. (1995), Zaheer et al. (1998)*
Integrity	Recognition of a set of acceptable principles.	*Mayer et al., (1995)*
Emotional	Recognition of emotional aspects.	*Zaheer et al., (1998)*

3 METHODOLOGY

This chapter explains the method of how this thesis has been constructed. It describes the different approaches; the research strategy; and presents the tools and processes involved in making this thesis.

To fulfill the purpose of this thesis, the initial phase of this study consisted of developing a suitable research approach and strategy. After deciding on that, the next step was to perform a literature review, which allowed the authors to understand the essential parts of how trust, and its elements, are looked upon from an academic point of view. Data was then collected from an automotive industry context using a case-study approach with Volvo Cars as the subject, using open-ended qualitative interviews as the main data collection tool. After performing these, the next step was to undertake a gap analysis between literature and the collected data. Using the result derived from the analysis of the qualitative data collection, the research shifted towards a quantitative approach using an online questionnaire to expand the understanding of the qualitative result. Sprung from the data collected through the two approaches conclusions could be drawn and a framework created. In summary, Table 8 illustrate the major steps of this thesis.

Table 8 - Flowchart of research steps

Step 1	Selecting research approach
Step 2	Selecting research strategy
Step 3	Reviewing literature
Step 4	Collecting qualitative data
Step 5	Processing qualitative data
Step 6	Collecting quantitative data
Step 7	Processing quantitative data

The following sections will provide with a description of each step conducted to fulfill the purpose of this thesis.

3.1 Selecting Research Approach

3.1.1 Inductive Approach

The inductive approach begins with studying a phenomenon that serves as the foundation for developing of more “abstract concepts and theoretical relationships” (Neuman, 2014). It is an approach to use when the ambition is to “generate substantive theory about a new and/or

complex phenomena" (Golicic et al., 2005), by building on empirical observations (Neuman, 2014). A concretized table of the major characteristics of an inductive approach, as presented by Saunders et al. (2007), can be seen in Table 9.

Table 9 - The major characteristics of inductive approaches to research (Saunders et al., 2005,

Induction emphasizes
Gaining an understanding of the meanings humans attach to events
A close understanding of the research context
The collection of qualitative data
A more flexible structure to permit changes of research emphases as the research progresses
A realization that the researcher is a part of the research process
Less concern with the need to generalize

The aim of this study was to expand the knowledge of trust by examining it in an automotive industry context. Therefore, one of the main characteristics this thesis is to gather data without any preconceptions or expectations regarding the data itself. In other words, the ambition was to derive abstract ideas from concrete findings. Therefore, this thesis was conducted using an inductive approach.

3.1.2 Qualitative Research

Qualitative research methods are used in various social science disciplines and professions, such as sociology and management (Yin, 2011, p. 6). Typically, it is used when the researcher wants to reach valid results without data series and statistically sufficient variables, when it is difficult to obtain ample response rates or when ongoing events are of interest, not the past. It does not exist any single definition of a qualitative study, instead it can be conceptualized by five features, namely:

1. Studying meanings of life under real-life conditions
2. Be representative of the views and perspective by the people in the study
3. Consider contextual conditions in where the people of the study operates
4. Contribute with insights regarding concepts that may help explain human behavior
5. Aim for multiple sources of evidence.

Qualitative research involves people expressing themselves independently, without being influenced or limited by the researcher. It has the purpose of capturing people's perspective, taking contextual factors into consideration. Finally the result should describe concepts or social processes, often based on a triangulated variety of sources to display convergence contributing to the credibility of the study. (Yin, 2011, p. 6-9)

A qualitative research often begins with asking "how" or "what", and the approach is then to develop a deeper understanding by going into details about some aspect of a more general topic. (Golicic et al., 2005). The qualitative research involves constant analysis, concisely described by:

> *We use results from early data analysis to guide subsequent data collection. Thus, analysis is less a distinct final stage of research than a dimension of research that stretches across all stages. - (Neuman, 2014, p.479)*

This thesis aims to identify how trust is understood by purchasers in the automotive industry, which qualities suppliers should possess to be considered trustworthy and examine trust as a supplier selection criterion. Hence, focus will lie on studying the concept of trust in a practical environment. Therefore, it was deemed most relevant to begin the data collection using qualitative methods.

3.1.3 Quantitative Research

Quantitative research is typically associated with collecting numerical data (Bryman and Bell, 2011). It relates to the quantification of variables and test hypotheses (Neuman, 2014). In social research this means to "describe and account for regularities in social behavior" (Payne and Payne, 2004), rather than explaining and interpreting the reason behind an action. Therefore the measures of interest are identified before the initiation of the study. The procedure of gathering quantitative data are often standardized and replication logic is frequently used. Seeing that the data comes in the form of precise measurement, the analysis and conclusion making is performed with using "statistics, tables, or charts and discussing how what they show relates to hypotheses" (Neuman, 2014).

In line with the ambition of this thesis to identify the relative importance of some of the findings, it was considered of value to quantitatively examine the derived result. This will add a new dimension to the study since it will provide with precise measurements that allow the researchers to quantify the importance of the trust qualities.

3.2 Selecting Research Strategy

Depending on what the purpose of a study is, different research strategies are suitable (Denscombe, 2010). Therefore, it is important to consider different strategies before finally deciding on which to use in the study at hand. Each strategy provides with its own

characteristics in terms of logic, data collecting and analysis of empirical evidence (Yin, 1994). Therefore, it is important to be aware of each strategy's strengths and weaknesses (Denscombe, 2010), seeing that the selection will have an impact on the outcome of the research itself.

If the research ambition is to "measure some aspect of a social phenomenon or trend or to gather facts in order to test a theory" a survey-strategy would be suitable (Denscombe, 2010). However, if the goal instead is to "understand the complex relationship between factors as they operate within a particular social setting", a case study is considered more appropriate (Denscombe, 2010). Lastly, an experiment-strategy would be used when aiming to "identify the cause of something" or to "observe the influence of specific factors" (Denscombe, 2010). Yin (1994), suggests three different aspects to consider when determining which research strategy to use, these can be seen in Table 10.

Table 10 - Suitable research strategy depending on type of research, adapted from (Yin, 1994, p. 6)

Strategy	**Form of research question**	**Requires control over behavioural events?**	**Focus on contemporary events?**
Experiment	How, Why	Yes	Yes
Survey	Who, what, where, how many, how much	No	Yes
Case study	How, why	No	Yes

This study mainly wants to answer questions about trust in terms of "how" it is understood by purchasers, while simultaneously considering contextual characteristics present in the automotive industry. Therefore, a case study strategy will be used. The following section will briefly describe this research strategy.

3.2.1 Case study

A case study typically takes places at a workplace or organization, where the focus is to allow for an "intensive examination of the setting" (Bryman and Bell, 2011). In contrast to for example experimental or survey research, which often follow the randomization principle to avoid bias in the result (Denscombe, 2010), the case study approach instead imply a careful selection of case study on the basis of their characteristic features (Denscombe, 2010). Additionally, Yin (1994) argues that a case study approach is suitable when the aim is to "investigate a contemporary phenomenon within its real-life context, when the boundaries

between phenomenon and context are not clearly evident". In a concretized form, a case study should be on chosen with the following logic in mind:

> *A case study should be chosen deliberately on the basis of specific attributes to be found in the case – attributes that are particularly significant in terms of the practical problem or theoretical issue that the researcher wants to investigate. - (Denscombe, 2010)*

One common critique to case studies is potential difficulties associated with generalizing the findings outside the context of the case itself (Yin, 1994). However, seeing that the ambition of the researcher is to understand a specific phenomenon in a certain condition or to expand previous theories, the typical ambition when using case studies is not to find cases to base statistical generalization upon. Instead, the objective is to make an analytical generalization, i.e. "striving to generalize a particular set of results to some broader theory" (Yin, 1994).

3.2.1.1 Case study design

Yin (1994) suggests four different case study designs to use depending on the research purpose. A distinction is made between single and multiple case study design, and between a holistic vs. an embedded unit of analysis.

In terms of single vs. multiple case study design, the two of them are associated with different advantages based on which type of study the researcher want to conduct. Yin (2013) suggests five major rationales for choosing a single case design, these are presented in Table 11.

Table 11 - Different logic behind choosing a single case study design, adapted from Yin (2013)

Logic behind single case study	**Description**
Critical case	A case can be identified that shows all critical characteristics needed to confirm, challenge or extend a theory
Unique case	A case can be identified that shows unusual characteristics that makes the circumstances around it interesting to document and analyze
Representative case	A case can be identified that is regarded as being "typical" in terms of showing characteristics that are representative for the setting of interest. Conclusions made from these are "assumed to be informative about the experiences of the average person or institution" (Yin, 2013, p.48)
Revelatory case	A case is identified that previously has been inaccessible to researchers. The opportunity to study the phenomenon thus becomes interesting based on its revelatory nature
Longitudinal case	Suitable when investigating how certain conditions change when revisiting the same case in different points of time

A case study can also include the study of multiple independent cases. This entails some advantages, for example the result derived from a multiple case study is often considered more robust (Yin, 2013). The logic behind a multiple case study often associated with "replication logic", i.e. finding same result in other, similar contexts. Typically, the cases should be selected using either; "literal replication", i.e. predicting a similar result, or a "theoretical replication", i.e. predict a different result while simultaneously anticipating it (Yin, 2013).

Finally, there is the option to choose between a holistic and an embedded case study design. A holistic design can be used if the area of interest has no logical sub-units and the theory used as the research foundation itself is holistic. However, if the circumstances are such that a case includes several logical sub-units that covers different aspects of a case, an embedded case study design should be used.

The authors of this report mainly want to raise the question of "how" trust is understood from a purchasing perspective when selecting suppliers. This entails the study of a typical organization that shows characteristics similar to other purchasing departments operating in the context of the automobile industry. Therefore, this study will use a single, holistic case study design, with the representative case being the case selection logic.

3.3 Reviewing literature

In order to comprehend the social world around us, it is imperative to develop a sense about the existent theory of the study at hand (Neuman, 2014). Using current theory as a foundation, it helps the researcher to "clarify thinking, extends understanding, deepens discussion, and enriches analysis" (Neuman, 2014). Simultaneously, it provides with a way of organizing the way research is performed (Neuman, 2014). When conducting a case study, theory can be seen as a blueprint to assist the researcher in what data to gather and which strategies to use to analyze it (Yin, 1994). Therefore, the value of theory development prior to initiating the case study cannot be under underestimated (Yin, 1994).

This report developed a theoretical background based on a literature review that provided with current theories regarding the spectrum of trust. First, a broad topic review was conducted using major search engines, such as Web of Science, Emeraldinsight and SpringerLink. Using search terms such as: *trust supplier selection, antecedents of trust, supplier trustworthiness, measuring trust, and trust automotive industry etcetera.* This provided with knowledge regarding the key aspects of trust, both in general and in the context of supplier selection, thus creating a foundation on which the research could be built upon. This provided with insights on existing research on the subject to be used as comparison with the findings of this study.

3.4 Collecting qualitative data

Qualitative interviews differ from structured interviews. It does not involve a questionnaire with a complete list of questions to be answered, instead the interview is built on a mental

framework of questions. The interviewer, in preparation of a qualitative interview, does not try to adopt any uniform behavior for each interview. The interview should follow a conversational mode which leads to individual answers, where the participators use their own words not those predefined by the researchers. The directness of answers may vary, they could be either candid or coy, which makes it important that the researcher know how to distinguish between these. The questions should be open- rather than closed-ended. If answers can be narrowed to either a yes or no it would be highly undesirable and require modification of the question. (Yin, 2011)

The ambition should be to "learn from people", rather than to study them. The interviewer shall try speaking in modest amounts, and not more than the interviewee. The interviewer should continuously look for ways to extend the dialog. Seeing that the goal is to capture the participants own words, it is important that the interview is conducted in a nondirective way. Further it is important to be neutral during the interview, hence controlling body language and expressions to ensure the interviewee's words is not affected. Another important factor is that the interviewer maintains good report with the participant. There exists a responsibility towards the interviewee to avoid harmful conversations, triggered by, for example, trespassing on private subjects or the use of words that leads to hateful thoughts. Finally the interviewer should use a protocol as guidance throughout the interview, and continuously analyze the information derived. By paying close attention to details, the interviewer can actively decide whether to go into more into detail or change the topic. (Yin, 2011)

In this thesis, qualitative interviews were conducted with 26 Volvo Cars employees, which lasted between 40-50 minutes. During these, a set of questions were asked concerning the different aspects of trust present in the supplier selection process. The questions were open ended and designed to give the interviewee new perspectives to reflect on, by asking for concrete examples based on their experience. The interview guide consisted of questions to be asked, but also guidelines regarding how to expand the dialog, see appendix one and two for the interview guide.

Prior to the interviews, each subject received an explanation of the research itself, but also about which questions that served as the mental framework. This information was repeated before beginning each interview session. Additionally, the interviewees were informed about the confidentiality of their answers and asked for permission to be recorded. The interview sessions were recorded to ensure an accurate interpretation of data. After each interview, the recorded material was immediately transcribed. Seeing that every individual interview followed a slightly different route, each transcript was analyzed and the answers were sorted under its corresponding question. However, these answers were only transferred to the summary document, and not altered with in any way.

3.5 Processing Qualitative Data

The analysis of qualitative data implies to systematically organize, integrate and examine the collected data at hand with the ambition of finding patterns and relationship about the studied

subject. Typically, the analysis of qualitative data is associated with generalizations and explanation tied to the concrete data, which often implies the absence of abstract theories. The ambition instead is to "organize specific details into a coherent picture, model, or set of tightly interlocked concepts". (Neuman, 2014)

One way to start analyzing qualitative data is to codify it, which involves some form of sorting, where categories of data is generated depending on its properties. The method is called "open coding", which can be followed by "axial coding" and "selective coding". "Axial coding" refers to the procedure of systematically developing the existing categories with subcategories, and "selective coding" means that the existing categories are integrated and refined. Thus these two are of a more reassembling than disassembling character. (Yin, 2011)

The coding is performed in different steps where the data initially sticks closely to its original form, and then incrementally being moved to a more conceptual level. The next step is to look for patterns within the second level and integrate categories. It is important to ensure that the emerging patterns make sense and that it relates to concepts and hypotheses previously described along the outset of the study. (Yin, 2011)

When processing the qualitative data in this thesis, the transcripts were first organized and concluded into a summary containing all questions. Then, the data was codified using the open coding technique. The answers of each interviewee were assessed and grouped if showing similar traits, without the ambition of assigning any particular label to the group itself. The derived groups were assessed iteratively, where the number of repetitions varied between the groups. These were created based on either recurrent words or the nature of its content. Finally, each group was given suitable category name, where the traits of its content was compared with denominations from literature to potentially clarify the content with the use of common terminology. For a clarification of which questions contributing to which finding, see Table 12.

All questions were open ended, which resulted in that all answers regarding more than one research question could be derived from one interview question.

The processing of qualitative data concluded with a discussion regarding potential gaps and similarities between the collected data and theory identified during the literature review. Sprung from this discussion, one additional quality was added to those identified during the interviews. These qualities, that a supplier should possess in order to be considered trustworthy, were later used as the foundation on which the quantitative data collection was built upon.

Table 12 – Relating interview question with its corresponding finding

Research Question	Question
How is trust regarding a supplier understood in the automotive industry?	*"What is your perspective on the word "trust" in the context of a supplier selection?"*
	"How do you view the relationship between a company and its' representatives?"
What are the effects of being able to trust a supplier?	*"What is your perspective on the word "trust" in the context of supplier selection?"*
	"How do you view the role of trust in comparison to other factors influencing the selection of an supplier?"
Which qualities should a supplier possess to be considered trustworthy and how are these prioritized against each other?	*"Which qualities/attributes do you believe should be existent in order for a company to be considered trustworthy?"*
	"How do you assess the trustworthiness of a supplier?"

3.6 Collecting Quantitative Data

3.6.1 Questionnaire

Questionnaires allows researchers to gather standardized data that easily can be compared (Kotzab, 2005). It implies the distribution of a prearranged set of questions to several people (respondents) and is often associated with descriptive research, e.g. gathering of information regarding people's opinions or attitudes (Kotzab, 2005). Two distinct forms can be used: self-administered or interviewer-administered questionnaires. The difference between them is relates with the amount of contact the researchers have with the respondents. In self-administered questionnaires, the researcher does not have any contact at all, and the respondents answers the questions by him- or herself. While interviewer-administered implies that the interviewer records the individual answers (Kotzab, 2005).

The data collection typically includes two different types of information, namely; factual information or opinions. When collecting factual information, the researcher asks the respondents to reveal straightforward information such as job title. In terms of opinions, the researcher instead asks the respondents to reveal information about their feelings, express values or to compare alternatives to each other. Often, a questionnaire includes elements of both type in order to enable grouping and add depth to the analysis. (Denscombe, 2010)

3.6.2 Analytical Hierarchy Process (AHP)

The analytical hierarchy process (AHP) is a method that enables pair-wise comparison between different criteria to derive a priority scale, often based on the opinions of experts (Saaty, 2008). The method can be used as a way to make a decision in an organized and systematic manner. The process begins with stating the criteria of evaluation. These criteria are often related to reaching a goal, but their individual importance to do so are unknown. By comparing each criterion with each other the individual importance of them can be identified. To do this, Saaty (1994) suggests a nine-point scale. How this scale should be interpreted is illustrated in Table 13.

Table 13 - The 1-9 fundamental scale (Saaty, 1994, p. 26)

Intensity of importance	Definition	Explanation
1	Equal importance	Two activities contribute equally to the objective
3	Moderate importance	Slightly favor one activity over another
5	Strong importance	Strongly favor one activity over another
7	Very strong or demonstrated importance	One activity is strongly favoured over another, its dominance demonstrated in practice
9	Extreme importance	The evidence favouring one activity over another is of the highest possible order of affirmation
2, 4, 6, 8	For compromise between the above values	Comparison mandated by choosing the smaller element as the unit to estimate the larger one as a multiple of that unit.

The values are inserted in a comparison matrix. If a criterion is considered more important it is given a value according to Table 13, if it is considered less important it is given the reciprocal value. This is exemplified in Figure 3, where e.g. criteria A is considered moderately important compared to criteria B. After completing the comparison matrix, the final weight of the parameters can be calculated in several different ways, e.g. the Eigen-value method or the Row Geometric Mean Method.

	Criteria A	Criteria B	Criteria C
Criteria A	1	3	6
Criteria B	1/3	1	1/8
Criteria C	1/6	8	1

Figure 3 - Exemplified AHP comparison matrix

3.6.3 Combining questionnaire with AHP

The collection and processing of the qualitative data partly resulted in identifying which qualities a supplier should possess in order to be considered trustworthy. To further analyze this result a questionnaire was created using Google Survey. This contained questions needed to successfully construct an AHP-comparison matrix, with the criteria being the identified qualities. Prior to each pairwise comparison, the definition of each trust quality was presented. Thus, minimizing the risk of the respondents conducting the comparison without being aware of its definition.

The survey was distributed by senior management globally, using email, to employees in the purchasing department at Volvo Cars. The email included, in addition to the survey itself, information regarding its purpose and relevant contact information. The questionnaire was distributed to 600 Volvo Cars employees and answered by 73 respondents, implying a response rate of roughly 12%. To maximize the number of participators, three reminders were sent from senior management at the purchasing department.

3.7 Processing quantitative data

It is necessary to organize the collected data in order to reveal patterns and trends. Often this include the use of charts or graphs which enables the researcher to interpret and give theoretical meaning to the result. Therefore, the first step after collecting quantitative data is to clean and arrange it in a manner that enables it to be analyzed using statistical methods on a computer. (Neuman, 2014)

In this thesis, it was first necessary to transform the pairwise comparisons gathered from Google Survey into individual comparison matrices. To do this, the raw data was first transferred to Microsoft Excel. There, three participants who had assigned equal importance to each quality was removed. The rationale behind this decision was that these respondents was believed not to have answered in a manner that corresponded with their actual opinion, i.e. that they only answered the questions to finish the questionnaire as quick as possible. Then, the data was processed to enable it to be transferred into MathWorks Matlab. In Matlab, the collected pairwise comparisons were organized into individual comparison matrices.

Using the comparison matrices collected in the questionnaire, the processing of the quantitative data concluded with a discussion regarding the insights that could be derived from the data analysis. This thesis utilized two different methods to process the quantitative data itself, the following sections will briefly describe these.

3.7.1 Method 1

3.7.1.1 Validating Consistency

Seeing that the comparisons made in the AHP are subjective, a relative amount of inconsistency will occur, this is due to the amount of the redundancy being present in the method itself (Roy, 2004). Therefore, the consistency Ratio (CR) was calculated using equation (1) and (2).

$$\boldsymbol{Consistency\ index} = \boldsymbol{CI} = \frac{\boldsymbol{\lambda_{max} - n}}{\boldsymbol{n-1}} \quad \textbf{(1)}$$

$\lambda_{max} = \ Maximum\ eigenvalue\ of\ comparison\ matrix$
$n \quad = \ Number\ of\ elements\ being\ compared$

$$\boldsymbol{Consistency\ ratio} = \boldsymbol{CR} = \frac{\boldsymbol{CI}}{\boldsymbol{RI}} \quad \textbf{(2)}$$

$CI = \ Consistency\ Index$
$RI = \ Random\ Index\ (from\ table)$

Saaty (1994) suggests that the consistency ratio should be less than 0.1 to be considered consistent. However, if the number of elements being compared is large, Escobar et al. (2004) argues that a CR of 0.2 is acceptable. The authors of this thesis used a CR threshold of 0.2, thereby excluding comparison matrices with a CR exceeding 0.2 from further analysis.

3.7.1.2 Calculate Weighting

The weights were then derived from the individual comparison matrices by calculating the principal eigenvalue and the corresponding normalized right eigenvector (Roy, 2004). This corresponds to the final weight the qualities have with respect to achieving the stated goal.

3.7.1.3 Statistical Test

A 90% confidence interval of the average weight of each quality weight was later used to calculate the level of certainty that the data will remain within a certain limit. In situations where the data is normally distributed, the interval can be calculated using equation 3 (Vännman and Dunkels (2002), p. 205). In this thesis, the data provided from the survey was assumed to be normally distributed, in line with the central limit theorem (Routledge, 2017). The test was made to either confirm or reject the hypothesis of it existing consensus between the respondents.

$$\boldsymbol{Confidence\ interval} = \left[\bar{\boldsymbol{x}} - \boldsymbol{t}_{\frac{\alpha}{2}}(\boldsymbol{n}-\boldsymbol{1}) \cdot \frac{\boldsymbol{s}}{\sqrt{\boldsymbol{n}}}, \bar{\boldsymbol{x}} + \boldsymbol{t}_{\frac{\alpha}{2}}(\boldsymbol{n}-\boldsymbol{1}) \cdot \frac{\boldsymbol{s}}{\sqrt{\boldsymbol{n}}}\right] \quad \textbf{(3)}$$

$$\bar{x} = \ Sample\ mean$$

$$n = \ Number\ of\ observations$$

$$t_{\frac{\alpha}{2}}(n-1) = \ Tabulated\ value\ of\ t-distribution\ with\ (n-1)\ degrees\ of\ freedom$$

$$x_i = \ Observation\ i$$

$$s = standard\ deviation = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2}$$

The confidence interval was calculated three times. Initially, it was calculated using the weight derived from the nine-point comparison scale including all identified trust qualities (method 1.1). If the collected result could not be validated, the next approach was to aggregate the raw data to further examine the result. Two different aggregation methods were used. First, the scale used to perform the pairwise-comparison entries gathered from Google Questionnaire was reduced from nine to five points. This was done by grouping scale intervals 2-3, 4-5, 6-7, and 8-9 into 2, 3, 4, and 5. The last option implied the reduction of the identified trust qualities, however still using the nine-point scale. A summary of how the methods differs can be seen in Table 14.

Table 14 - Summary of the methods used to test confidence interval

Method	Scale	Trust qualities
1.1	1-9	All
1.2	1-5	All
1.3	1-9	Aggregated, 9 qualities into 5

Beyond investigating if there existed consensus between the respondents, a t-test was made to examine the statistical probability for the order in which the qualities been weighted. The t-test is used to test a hypothesis regarding the mean of a sample, assumed to be normally distributed (Blom, 2005). To perform the test, a t-value is calculated. This t-value was calculated in accordance to Blom (2005) seen in equation (4):

$$\boldsymbol{t - value = t = \frac{\mu_k - \mu_{k+1}}{\sigma_k / n}} \quad \textbf{(4)}$$

$\mu_k = the\ mean\ weight\ of\ quality\ k$

$\sigma_k = the\ standard\ deviation\ of\ the\ mean\ of\ quality\ k$

$n = size\ of\ population$

$k = 1, \ldots, k\ qualities$

The purpose was to check if the rank between the qualities was statistically valid; in other words what the probability is for quality 1 will being larger the quality 2, and so on. Hence the following hypothesis was made to complete the test.

$$H_0: \mu_k \leq \mu_{k+1}$$

$$H_1: \mu_k > \mu_{k+1}$$

Presuming that the null hypothesis (H_0) is true, the p-value is calculated to present the probability for this (Blom, 2005). In this thesis, H_0 was rejected for all p < 95%.

3.7.2 Method 2

To further examine the data derived from the survey, the authors utilized an additional way of interpreting the result based on the procedure presented by (Dong et al., 2010). In the following sections, this method will be briefly described.

3.7.2.1 Validate Consistency

First, the consistency of each individual comparison matrices was calculated by using the Geometric Consistency Index (GCI), which is suitable to use when deriving a weight vector using the Row Geometric Mean Method (RGMM) (Dong et al., 2010), seen in equation (5) .

$$\boldsymbol{Weight\ vector\ (RGMM) = w_i = \frac{\sqrt[\frac{1}{n}]{\prod_{j=1}^{n} a_{ij}}}{\sum_{i=1}^{i} (\sqrt[\frac{1}{n}]{\prod_{j=1}^{n} a_{ij}}}} \quad \textbf{(5)}$$

$n =$ $Number\ of\ rows\ in\ comparison\ matrix\ A$

$a_{ij} =$ $The\ pairwise\ comparison$

Using the weight vector derived from RGMM, the Geometric consistency index (GCI) (Dong et al., 2010), was calculated by using equation (6).

$$\textbf{Geometric consistency index} = \textbf{GCI}(\boldsymbol{A}) = \frac{2}{(n-1)(n-2)} \sum_{i<j} \left(\log\left(a_{ij}\right) - \log(w_i) + \log\left(w_j\right)\right)^2 \quad \textbf{(6)}$$

$n =$ *Number of criteria in comparison matrix A*
$a_{ij} =$ *Pairwise comparison*
$w_i =$ *Weight vector location i*
$w_j =$ *Weight vector location j*

In situations where the number of criteria being compared exceeds four, Dong et al. (2010) suggest that each individual comparison matrix should show an GCI-value below 0,37 to be deemed acceptable for use in further analysis. Therefore, the authors of this thesis used a GCI threshold of 0.37. Comparison matrices with a GCI exceeding 0.37 was thereby removed from further analysis.

3.7.2.2 Aggregate comparison Matrices

The next step was to aggregate the individual comparison matrices into a collective one. This was done by using the Aggregation of Individual Judgements (AIJ) method **(**Dong et al., 2010)), seen in equation (7).

$$\textbf{Collective comparison matrix} = \boldsymbol{A_{ij}^c} = \boldsymbol{a_{ij}^{(c)}} = \prod_{k=1}^{m} \left(\boldsymbol{a_{ij}^{(k)}}\right)^{\lambda_k} \quad \textbf{(7)}$$

$m =$ *Number of individual comparison matrices*
$a_{ij}{}^k =$ *Pairwise comparison for comparison matrix k*
$\lambda_k =$ *Importance of comparison matrix k*

3.7.2.3 Calculate Weighting

Based on the collective comparison matrix created in the previous section, RGMM was used, seen in equation (4), to calculate the weight vector of the collective comparison matrix.

3.7.2.4 Validate Consensus

To examine whether consensus exists between the respondents, the collective comparison matrix was used. The degree of consensus between the individual comparison matrices and the collective one was calculated using the Cardinal Consensus Index (GCCI) **(**Dong et al., 2010) seen in equation (8).

$$\textbf{Geometric cardinal consensus index} = \textbf{GCCI}(A^k) = \frac{2}{(n-1)(n-2)} \sum_{i<j} \left(\log(a_{ij}{}^{(k)}) - \log(w_i{}^{(c)}) + \log(w_j{}^{(c)})\right)^2 \quad \textbf{(8)}$$

$n =$ *Number of criteria in comparison matrix A*
$k =$ *Number of individual comparison matrices*
$a_{ij} =$ *Pairwise comparison*
$w_i^c =$ *Collective weight vector location i*
$w_j^c =$ *Collective weight vector location j*

The closer to zero the individual GCCI is, the more in line with the collective opinion an individual can be considered being (Dong et al., 2010). It is not widely agreed upon which GCCI threshold value that should be considered acceptable, however, Dong et al. (2010) suggest a threshold of 0,35. Therefore, the authors of this thesis used a GCCI threshold of 0.35 to evaluate consensus.

3.8 Ensuring Research Quality

To ensure the quality of a study it is important to consider validity and reliability. In short, validity concerns to what degree the study can be used to draw conclusions about the problem being studied. Reliability on the other hand is concerned to which degree a study is reproducible. For a graphical representation of validity and reliability, see Figure 4. (Neuman, 2014)

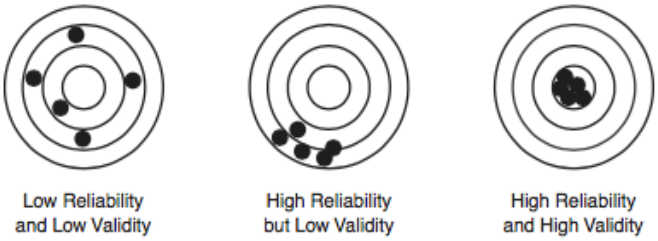


Figure 4 - Relationship between reliability and validity (Neuman, 2014, p. 221)

For case studies, Ellram (1996) suggest four aspects to consider when ensuring the quality of the study itself, namely; external validity, reliability, construct validity and internal validity. Table 15 illustrates these including a short description.

Table 15 - Research design quality measures (Ellram, 1996)

Test	Description
External validity	"How accurately the result represent the phenomenon studied"
Reliability	"Addresses the repeatability of the experiment"
Construct validity	"Addresses establishment of the proper operational measure for the concepts being studied"
Internal validity	"Making proper inferences from the data, considering alternative explanations, use of convergent data, and related tactics" (Only relevant for explanatory case studies)

In terms of this thesis, these aspects were considered in the following ways.

3.8.1 External Validity

The external validity concerns to which degree the result derived from a study can be applied to other cases, i.e. the generalizability of the result (Ellram, 1996). In terms of this thesis, Volvo Cars was chosen as representative company in a single holistic case study. To which degree the findings of this report is generic and applicable to other companies is not apparent. This will be up to the reader to decide upon, in line with the view presented by Denscombe (2010).

3.8.2 Reliability

Concerns to what extent is it possible to reproduce the study and reach the same result (Ellram, 1996). A study with a high level of reliability show qualities that allow different researchers to perform a similar study and reach the same conclusion (Bloor and Wood, 2006). Therefore, it is important that the methodologies are thoroughly presented. To maximize this study's reliability, the authors of this thesis have continuously stored the collected data in a case study database. This database includes the recording of every interviewee, the corresponding transcripts, each codification step, the interview guide and the raw data from the questionnaire.

3.8.3 Construct Validity

In order to secure construct validity, Ellram (1996) suggest three elements of concern. First, the use of multiple data sources is encouraged, which reduce the risk of being all to affected by informant bias. The second element of interest is to establish and maintain a chain of evidence. The third, and last, element of interest is to allow for draft review of key informants.

3.8.3.1 Multiple Data Sources

In order to get a good representation of the different aspects to consider when assessing the trust of a supplier, a selection of Volvo Cars employees was made. The rationale behind the selection was to create a spread of scope in the daily work performed, ranging between operational to more strategic level; the inclusion of different types of suppliers in terms of size and commodity complexity; the inclusion of internal supplier selection stakeholders, i.e. Purchasing, Supplier Quality Management (SQM) and Research & Development (R&D). Table 16 illustrate the selection rationale.

Table 16 - Qualitative interviewee selection rationale

Supplier selection rationale		
Supplier size	Commodity complexity	
Interviewee selection rationale		
Experience	Scope of daily work	Internal stakeholders

Ten different suppliers were first chosen with the assistance of a senior employee at Volvo Cars purchasing department, based on their size and commodity area. Thereafter, the corresponding internal supplier-handler was contacted (hereinafter referred to as "Group Manager"), who provided with names of Volvo Cars employees who was responsible for the daily operations with the supplier (hereinafter referred to as "Buyer"). Finally, responsible internal supplier-handler from SQM- and R&D was contacted as well. Ideally, this would mean the inclusion of four interviewees from each selected supplier, i.e. one group manager, one buyer, one supplier quality manager and one representative from R&D. However, due to time restraints and scheduling problems, this was not the case. Instead, after consulting with senior employees at Volvo Cars, 26 interviewees were selected, the allocation of these can be seen in Table 17.

Table 17 - The allocation of interviewees depending on their department

		Scope of daily work	
Department	**Number of interviewees**	**Operational**	**Strategic**
Purchasing	19	9	10
Supplier quality management	6	1	5
Research and development	1	0	1

Finally, to minimize the risk of researcher bias that might result in a skewed interpretation of the result, every step of the codification of the qualitative data and the analysis of the quantitative data, was undertaken with both researchers present. Further information regarding the survey can be seen in Appendix six.

3.8.3.2 Establish and Maintain a Chain of Evidence

In line with the suggestion of Ellram (1996), this report was carefully reviewed before print to evaluate and ensure logic, flow, clarity and content. Not only by the authors themselves, but also by external parties. See Table 18 for further information.

Table 18 - Reviewers of thesis chain of evidence

Reviewer	**Reviewer title**
Ala Pazirandeh	Doctor, supervisor
Anderas Norrman	Professor, examiner
Opponent group	Master student

3.8.3.3 Draft Review of Key Informants

This was continuously done during weekly meetings with senior employees at Volvo Cars. Additionally, each interviewee was given the opportunity to review the summary document to ensure the rightfulness of the answers but also enable them to correct potential errors provided by interviewees themselves.

3.8.4 Internal Validity

Is mainly relevant in explanatory case studies (Ellram, 1996). Seeing the exploratory nature of this thesis, therefore internal validity will not be addressed.

4 CASE STUDY

The following chapter begins with a short introduction to the rationale behind selecting Volvo Cars as a case study subject. Then the results derived from both the qualitative and the quantitative data collection are presented.

This study aims to expand the knowledge of what trust in a supplier is, how it is used when selecting suppliers in the automotive industry, and how these insights should be applied in the early stages of the supplier selection process. In order to achieve this, Volvo Cars was chosen as a being representative of this industry and suitable for a case study. The rationale behind the selection was grounded in four key aspects, namely:

1. Volvo Cars have a global presence with production and sales in several continents around the world. This implies that they have similar challenges in terms of supply chain efficiency, supplier compliance and global sourcing as other actors in the industry.

2. Volvo Cars have an outspoken lean philosophy permeating the entire company, which is in line with the automotive industry as a whole. This implies that they, like other automotive manufacturers, have the same focus on cost reduction, having flexible production and short lead-times and attaining high quality.

3. Volvo Cars are affected by the same global trends as other automobile manufacturers, which implies that they are facing similar challenges as other automotive manufacturers.

4. Volvo Cars have a well-established and comprehensive supplier selection process following the common four steps presented in the background of this study.

In summary, Volvo Cars was deemed being a company having characteristics comparable to other actors in the automotive industry while simultaneously having a typical supplier selection process.

4.1 How trust is understood

4.1.1 Mindsets of trust

The qualitative interviews showed that it exists two different mindsets of trust within Volvo Cars' purchasing department. One mindset, identified in four of the 26 interviews, was that trust in a supplier is present from the beginning, and remain so until the opposite is proven. In other words - until the supplier shows to not be trustworthy. The rationale is that trustworthiness is assumed and expected in a professional relationship. The second, opposing, mindset was identified in seven of the 26 interviews, and implied that trust is something that needs to be earned. Trust towards the supplier does not exist until they prove themselves to be trustworthy. Employees having this mindset, typically mention that contractual safeguards should be established in the initial phase of the relationship. The attitude is that everybody lies. One statement was made that summarized it concise terms, namely: "In God we trust, all others need to present evidence". Few suppliers are initially trusted, as they are believed doing everything they can to increase their profit. The remaining 15 of the 26 interviewees did not express anything in line with the two mindsets, or anything suggesting a third mindset.

Even though not being overly represented, these mindsets are considered being of further interest since it illustrates that nearly opposing mindsets can exist within the same organization. In addition, the 15 interviewees not implying the presence of a certain mindset, did not express anything to deny its existence. It was simply not discussed by them at all during the interviews.

The summarizing description of these mindsets can be seen Table 19.

Table 19 - Mindsets regarding trust

Mindset	Description	Quotations
Trustworthiness is assumed	A trusting stance towards the suppliers is existent from the beginning. It requires a noteworthy action from the suppliers to make the purchaser question the trustworthiness.	*- "Trust is given until the opposite is proven"* *- "Trust is present until there are any reason to question it"* *- "New suppliers are expected to be trustworthy"*
Trustworthiness is earned	A mindset that assumes that the supplier is doing what they can to earn more money. The general assumption is that everybody lies. A supplier need to consistently act in a trustworthy way to be deemed honest in their intentions	*- "With extremely few exceptions, no suppliers are trusted"* *- "Suppliers do what they can to get more money"* *- "In god we trust, all others need to present evidence"* *- "Suppliers lie all the time"* *- "Trust must be earned"*

4.1.2 Views of trust

When only studying answers on how the interviewees understands trust in the context of supplier selection, three major views could be identified.

The first view base trust on a set of more objective aspects, which was represented by eight of the 26 interviewees. Examples of things that was stated to increase trustworthiness was that suppliers "walk the talk", keep their promises and deadlines, deliver right quality or demonstrate other measurable aspects. By visiting suppliers on-site, their systems and structures can be seen. Efforts that are justified by the principle that hard aspects matter most. One interviewee stated that "decisions and recommendations should be based on more than a handshake.

The second view relates to more subjective aspects, in terms of a general difficulty to systematically assess trustworthiness. This view was found during four of the 26 interviews. Trust was described to be associated with soft aspects that connotes to feelings and therefore is something that varies between the individuals making the judgement. According to this view, trust is something that continuously is being assessed and a factor that is kept in the back of one's head as it cannot be formulated in a contract.

The third and final view of trust can be described as a combination of the two others, and was identified in five of the 26 of the interviews. According to this view, trust is considered to relate to whether a supplier will be capable of delivering what they claim. This implies that many different aspects need to be taken into consideration. It is important to capture the "whole picture" as trust is based on the several elements within a company. Trust is therefore recognized as being a multifaceted term.

Beyond the hard and soft views, some aspects of different nature were deemed to have a considerable impact, namely those of time and culture. In order to build a trusting stance between two parties, time was mentioned as being essential by 13 of the 26 interviewees. Statements such as "trust is built during interactions" or "trust is built over time" could be heard. In line with this, the word experience frequently followed. For example, it was mentioned that trustworthiness cannot be known in advance, it is necessary to work together with a supplier to develop it. During one interview it was stated that "Volvo Cars mostly work with known suppliers, where the general feeling for their capabilities are known". Further were cultural aspects, mentioned by four of the 26 interviewees, stated as being something that have an impact on supplier trustworthiness. Suppliers that originate from cultures fundamentally different could have norms and attitudes that is not in line with Volvo Cars' operating philosophies and routines, thus affecting the trustworthiness of potential supplier.

From a more general perspective, every interviewee had an opinion about trust in suppliers. They seemed to agree about it being something that, even though not being a part of the existing selection process, is a factor being reflected upon.

The objective and the subjective view shares similarities with the distinction made in the literature view regarding hard and soft aspects. It is argued that the objective view simply sees trust consisting of hard aspects, while the subjective view consists of soft ones. This connection enabled a further investigation regarding how many interviewees indicating a view being both objective and subjective. This was made by cross-referencing each interviewee's statements regarding qualities that result in trust with whether the qualities were deemed hard, soft or a combination. This showed that 25 out of 26 interviewees mentioned qualities relating to a combined view, and only one was consistent with the opinion of trust being based solely on hard aspects. A summarizing table of the views are illustrated Table 20.

Table 20 - Different views of trust

View	Description	Quotations
Trust consists of hard aspects	Trust is judged based on a set of objective values. It is more grounded in something measureable as on-time delivery, product quality and to what degree suppliers keep their promises.	*- "The supplier "walk-the-talk"" - "The supplier deliver according to what they have promised" - "Decisions and recommendations are based on more than a handshake" - "The supplier delivers in time and according to plan"*
Trust consists of soft aspects	This view argues that trust is more subjective in its nature. It is associated with intangible soft values. It varies between individual and therefore it is not something that can be systemically assessed.	*- "It cannot exist a routine for assessing if someone is lying" - "It is a thought, an attitude, but not something that is written down" - "Trust is something soft, subjective, that differs between individuals" - "Trust is something personal. It cannot be systemized"*
Trust consists of both soft and hard aspects	This view is simply a combination of the two other views.	*-"Trust is multifaceted" - "One must try to capture the whole picture, because that is where trust takes part"*

Finally, the findings regarding how time and culture has an impact on the trust was considered interesting and well represented by the interviewees. However, understanding the impact of these aspects would be complex and comprehensive. This since both the aspects gives a new dimension to the other findings of this study, and would simply require the same study to be done repeatedly over time and within different cultures. Hence, these aspects will not be a subject of further discussion.

4.1.3 Placement of trust

On the question of how trust is understood in terms of the company and its representatives, all interviewees believe trust is placed in the company. However, deviations existed regarding the influence of the supplier representatives. A large majority, 22 out of the 26 interviewees, said that there is a difference between the company and their representatives, and that trust cannot only be based on the representative alone. For example, "trust in a company do not come from

a key account manager being nice" or "a business relationship cannot be initiated only because of a good seller". There is no equal sign between the supplier and its representatives, therefore they cannot be assumed to be the same. Especially it was considered difficult to trust a salesperson without trusting the company he or she represents. One of the 26 interviewees stated that there are different types of trust, one towards the company and another towards the representatives.

A share of four of the 26 interviewees believed that the representatives only have a small influence on the general trustworthiness of a company. The most important objective for a supplier is to deliver as promised, and therefore only the company should be assessed. The acting of the representatives is not very important, an opinion characterized by the following quote: "a supplier do not benefit from a sympathetic salesperson". Business is being made with the company and therefore trust should be placed accordingly. A representative can be substituted, while the company remains. One of the 26 interviewees said that trust in a supplier was based 80% in the company and 20% in the salesperson, implying a small influence of the representatives. Building on this opinion, it was said that the assessment of trust in a company is made based on a number of different factors, hence one person does not have much influence. The perception of a company is built upon much more than a single person. Another example of how trust is placed in the company and not only influenced by its representatives, was expressed by one of the 26 interviewees that stated that the company has a potential to act as a "trust-bank" based on past experiences. This "trust-bank" could also motivate escalations beyond the contact person if problems occur.

Another, larger share of 13 of the 26 interviewees saw a greater influence of the representatives in order to trust the company behind them. Some believed that the trust in a supplier is dependent on a person, and that a good relationship with a trustworthy representative can contribute to converting a bad relationship with the company to a successful one. They believe it is important to create a feeling for the supplier representative to assess the overall trustworthiness; the representatives matter and contribute to building trust. It was stated that if a dislike for the representative exist, it results in less information sharing. One of the 26 interviewees described it as: "Initially, the company is the representative and will remain so until proved different". It is also, in contrary to what is described in the previous section, implied that the salesperson is very important since he or she is the one business is being made with, since a "good representative is more likely to act in Volvo Cars' favor". Statements such as "representatives are responsible for turning confidence into trust" or "trust in representatives transfers to the company", highlight the importance of the representatives when judging supplier trustworthiness. But as representatives are told to potentially have a positive influence on trust, they can also have a negative influence. "Bad relationship with representatives will at some point affect the firm behind" and "poor representatives can damage a company a lot", was mentioned as examples to illustrate potential negative aspects. Further are unpleasant behavior of a representative described to always ultimately have negative impact on the trust in a company. One of the 26 interviewees clarified the salesperson's impact depending on

performance, by saying “a supplier has more to lose on a bad salesman than what they could gain from a good one”. When purchasers meet with a supplier for the first time, the representatives are the first point of contact. In other words, the representatives are responsible for the first impression, creating either a positive or a negative view. It was mentioned that “trust in the representatives is an antecedent to trusting their company. In line with this, it was also stated that “trust in representatives can be transferred to the company” - hence these first impressions could be considered critical. Additionally, some generalizations associated with the representative impact was made, for example “a professional salesman usually represent a good supplier “and “a nice person gives more trust”.

Finally, there was one of the 26 interviewees that believed that trust in a company do not differ from trust in representatives; the two are practically the same thing. It was stated that there is “an equal sign between trusting a company and their representatives”. A salesperson should be considered being an extension of the company and is only delivering their message. Sometimes there might be discrepancies between the two, but that is typically not a problem. It was also stated that these actors can be difficult to separate since they interrelate. The remaining four of the 26 interviewees that believed that trust in a company not being the same as trust in its representatives, did not have a distinct opinion whether it has a big or small influence.

In summary the interviewees shared a unified opinion that trust is placed in the company as a whole, and that a distinction instead should be made to what extent the representatives has an influence on the trustworthiness of the supplier. 22 of the 26 interviewees expressed that such a distinction should be made and after further analyzing to which extent the representatives influence trust in their organization, basically two opinions was identified. These can be seen in Table 21. As only one of the 26 interviewees believed that trust did not differ at all between the organization and its representatives and thus representatives had complete influence, it was not considered being a generic opinion and therefore not included in the table.

Table 21 - Placement of trust

Representatives role in company trust	Description	Quotations
Big influence	Distinctions are made between trust in the company and its representatives. However the trust in a company is heavily influenced by the representatives. The impact can be either positive or negative.	*- "A good relation with the key account often gains the company behind them"* *- "A seller can ruin the perception of the company"* *- "Representatives matter, they mirror the perception of its company"* *- "The opinion of the company often changes with its representatives"*
Small influence	A distinction is made between the representative and the company as such. The representative have an impact when evaluating supplier trustworthiness, it is however small.	*- "Trust in a supplier is about 80% placed in the company, and 20% in the representative"* *- "Trust is typically not put in a person, the company is what will remain"* *- "A supplier do not benefit from a sympathetic salesman in terms of trust"*

4.2 Trust as a supplier selection criterion

When investigating what the effects of trust are, eleven out of the 26 interviewees seemed to agree on the fact that trust demonstrate a significant role in their daily work. Typically, employees are aware about the consequences a lack of trust can have in a relationship. For example, statements were made that clarified that trust could serve as a factor to become more effective and ease problem solving during the course of the relationship. It makes the interface between Volvo Cars and their suppliers less formal and bureaucratic. Simultaneously, it reduces the necessity for constantly monitoring a supplier's efforts to deliver what was agreed upon. Moreover, there is also an awareness about how trust can improve the long-term cooperation with suppliers and it contributes to the overall necessity to ease the daily communication as much as possible. Communication can be negatively affected in situations where a trusting stance between the parties is absent, since the feeling of untrustworthiness creates "frustration".

As a general opinion, without specifying any underlying reasons, trust was said to be important by eleven out of the 26 interviewees. Others referred its importance to specific processes or activities. For example, one of the 26 interviewees stated that trust serves as an important factor during the supplier selection process and the negotiations that precedes it. Two statements that exemplifies this view is; "trust is a fundamental aspect" and "trust is elementary and without it, no business can be made". This can be seen during the contracting phase, where it was concluded that it is difficult to document everything needed to make rational decisions. Therefore the implication is made that it need to exist some degree of trust in place in order to

even begin to initiate a business relationship. One of the 26 interviewees stated that Volvo Cars do not want to commence final negotiations if the supplier is not trusted. Which also connotes to the fact that it is considered difficult to have a dialogue with a supplier that is not trusted. However, one statement recognized that a supplier in fact can be a good one, i.e. delivering what it has promised, without necessarily being considered trustworthy. Simultaneously, another statement made clear that trust as a decision parameter does not permeate Volvo Cars' purchasing processes. It was also said that "Volvo Cars are using more objective measures" to make decisions.

Trust is also of importance when building a relationship, an aspect mentioned by five of the 26. To do this, trust is stated as being a prerequisite and a requirement for upholding a professional relationship. Additionally, trust was said to function as a negotiation tactic where it could be used as a tool to add "feelings" into negotiations. For example, by stating "I trust you to do this", an extra dimension can be added to the discussion. Something that potentially can result in the supplier becoming willing to go "the extra mile" to honor potential agreements. Finally, one out of the 26 interviewees highlighted the importance of building a trusting stance between Volvo Cars and their suppliers, by stating it as being an effective risk-mitigation strategy. This strategy can be used to reduce the risk of unfavorable treatment by suppliers that constantly are trying to increase their margins.

Trust is considered being a parameter that serves as an underlying factor with high importance by 13 out of the 26 interviewees. Something of bigger difference however, is its impact as a factor in the supplier selection process. While six out of the 26 interviewees in some way argues that it is "very important" or "at least as important as price", five of the 26 interviewees claims that it is "not especially highly valued". Finally, eleven of the 26 interviewees said that trust is not as important as price or other factors, for example predictability.

Those who considers trust being an important factor, argues in the same manner as those who believed it is important in their everyday work. One of the 26 interviewees claimed trust to be "the foundation of everything", which is in line with another's statement that that "a supplier cannot be chosen if there is no belief that they will deliver". Moreover, a distinction was made between new and old suppliers, where trust was considered a larger factor for existing suppliers.

Those who argues for trust being of lesser significance instead refer to other factors such as cost, technological capabilities or CSR related issues as being more important. Seven of the 26 interviewees highlight the fact that cost is the single most important factor for the final supplier selection. A quote regarding this was: "it is difficult to convince management of choosing a supplier that is not the cheapest one, even if a different supplier is considered being more trustworthy." In other words, it was said that the best "business case" will in the end always win.

Finally, there was three out of the 26 interviewees that saw trust as an "order-winner", meaning that it can serve as a deciding factor in those instances where the business case is nearly identical

between the suppliers that competes for the business. This relates to the opinion presented in section above, as an order-winner is a successor to an order qualifier, implying a less significance. In line with this belief, four of the 26 interviewees said that trust could result in efforts being made by Volvo Cars to assist the supplier to become the commercially most attractive one.

Looking at the result regarding the effect trust in a supplier has, it is clear that almost every interviewee considered trust in positive terms, and as something that could improve different aspects associated with running a company. In comparison to this, the mentioned negative aspects of trust were very few and further conclusions could not be can be made beyond acknowledging their existence. Hence the positive aspects will be given more attention, as these are considered being representative to a much larger extent. The positive aspects were grouped under different headings and can be seen in Table 22.

Table 22 - Positive aspects of trust

Positive Aspect	Description	Quotations
Improve relationships	Trust is stated as a prerequisite and a requirement for upholding a professional relationship. Seeing that many relationship will last for several years, a trusting stance will ease the collaboration	- *"Trust is a requirement for a professional relationship"* - *"Without trust, one cannot take the necessary step to initiate a relationship"* - *"Trust can make a supplier go the extra mile"*
Business facilitator	In order to conduct business with an external partner, trust is stated as a necessary parameter. Everything cannot be monitored and controlled by Volvo Cars representatives	- *"Without trust, no business can be made"* - *"Trust is a necessity in order to do business"* - *"Do not want to begin final negotiations with a supplier that is not trusted"*
Improve daily work	By upholding a relationship based on trust, it allows for the daily communication to be less formal and bureaucratic. It improves the general discussion climate and increases problem solving efficiency.	- *"It is frustrating to work with a supplier that cannot be trusted"* - *"Trust makes the daily work less bureaucratic"* - *"Trust makes daily communication easier, less need for control and monitoring"*

Further, when looking at how trust in a supplier is valued compared to other criteria involved in the selection process, it is clear that the interviewees could basically be divided into two groups: either trust was considered significant or less significant compared to other criteria involved in the supplier selection process (see Table 23). Since only a small number of interviewees mentioned trust as an order winner, and that order winner per definition implies

something being of less significance compared to order-qualifiers, it is not included in Table 23.

Table 23 - Trust versus other criteria

Trust as a criterion	Description	Quotations
As significant as other criteria	Trust is the foundation of everything, which therefore imply that a supplier cannot be chosen if there is no trust present	*- "Very big part of daily work"* *- "At lease as important as price"* *- "Trust is highly valued"* *- "A supplier cannot be chosen if there is no belief that it can deliver"* *- "Trust is the foundation of everything"*
Less significant than other criteria	Trust is not considered being of significant importance during the selection process. Instead other factors are mentioned as more important. Typically cost, technological capabilities or CSR related issues are brought up as examples.	*- "Not especially highly valued "* *- "Trust is not what pursues the selection of suppliers"* *- "Competitive price is the most important factor"* *- "Trustworthy suppliers might be recommended, but if they are more expensive they rarely get selected"*

4.3 Qualities that result in trust

When interpreting the result regarding which qualities a supplier should possess in order to be considered trustworthy, both the direct question of qualities to possess, and how trustworthiness is assessed was used. This was due to the logic that if the qualities exist, a supplier should be considered trustworthy. Hence the assessment basically consists of an identification of whether these qualities are present or not. The qualities and how they can be assessed are presented in the following sections.

The representatives of the supplier were mentioned to have an impact in terms of their way of acting and their ability to present information. A representative should show social competence, be knowledgeable about the subject and provide a "good feeling". Further, professionalism was mentioned by 20 out of the 26 interviewees to be an important quality. This connoted to working practices, preparations, manners and ability to be objective. Relating further to the representatives is their mandate, something that was brought up by nine of the 26 interviewees. If the authority of the representative to act on what is decided exists, trust increases. This mandate should also be clearly outspoken towards Volvo Cars. To assess the professionalism of a supplier, the interviewees said too look for how the representatives answered questions. Did they base arguments on facts or was they unclear about certain things? In addition, the first impression of the representatives is important. Are they polite and respectful? Do the spoken words correlate with the perceived capabilities of the supplier?

Transparency was also mentioned as an important quality, as it was discussed in during 16 of the 26 interviews. 13 out of the 26 interviewees spoke of it in terms of general transparency such as sharing information, but it was also mentioned in more specific contexts. For example, transparency regarding financial stability, technical abilities and logistical specifications was mentioned. Additionally, cost breakdowns were mentioned by 5 out of the 26 interviewees as something that are considered when assessing supplier transparency, these should be well developed and fully completed. Finally, it was also brought up that a supplier should be willing to share and admit problems, and not attempt to cover up or make excuses. When assessing transparency, the interviewees looked for the amount of information that was given – a large amount of information correlates with higher trustworthiness. One out of the 26 interviewees described that asking too see parts of "the beaten-track" during audits is a good way to assess supplier transparency, if this is not allowed something might be hidden. It was also suggested to speak with the people that actually have a first-hand experience with the process being investigated.

A word described along with transparency was openness and honesty, which was mention by 14 of out of the 26 interviewees. A supplier should not deliberately misunderstand discussions to gain advantages, or utilize changes in specifications to increase price. Both are indications of being dishonest. To assess these, the interviewees gave examples such as paying attention to if attitude change after a supplier have been sourced or if there is resistance to "put things on paper". Another way is to look at discrepancies between, for example, the Bill of Material (BOM) and the CAD-designs. Furthermore, six out of the 26 interviewees mentioned that one should compare price changes with own estimates. If it, in relative terms, has increased significantly, the supplier is likely to have initially offered a price with the intention to increase it after potential specifications changes. Such changes are something that frequently occurs. Another, simplified, way of doing this is to judge the offer using the term "too good to be true".

Other qualities needed to be deemed trustworthy are that the demands, stated by Volvo Cars towards all suppliers, are met. This was expressed in 18 of the 26 interviews. If these requirements are not fulfilled, a supplier will not be eligible as a supplier at all. Example of such can be the presence of quality assurance systems, existing ISO standards and signing the terms and conditions. These assessments are partly performed by the Supplier Quality Management (SQM) department through what is called a Manufacturing Site Assessment (MSA). The purchasing department uses a Supplier Evaluation Model (SEM), where requirements regarding, for example, child labor policies and other CSR-related questions are included. To evaluate the financial status, an index provided by Dun & Bradstreet (D&B) is used. The MSA, SEM and D&B-index should be approved in order for a supplier to be eligible.

Beyond the basic requirements, described in the section above, other abilities were described to further expand trustworthiness. For example, suppliers should have a clearly defined hierarchy, rules and regulations. It should be easy to access the right people and preferably exist a permanent person of contact. In addition, mature established processes for monitoring

performance and work proactively was considered important. In line with such abilities, the organization should give a sense of stability and not be dependent on certain individuals or facilitate an unhealthy company culture. Finally top management continuity contributes to trust, just as presenting competence by clearly understanding the details of a cost breakdown and having a global footprint. In total, 17 out of 26 interviewees mentioned abilities beyond the basic requirements to contribute to trustworthiness. To assess these, it was suggested to, for example, look for whether the supplier deliver a specific commodity and how many clients the key account are responsible for. Few commodities correlate with a higher degree of excellence and few clients means that the key account is likely to have an increased availability. Further, the supplier should have well defined project gates or checkpoints since it indicates well developed process management.

Good communication was mentioned by 15 of the 26 interviewees as being important for a supplier to be deemed trustworthy. Dialogs should be productive, direct and cross-functional. The communication should also be easy going, in terms of being open and not require further analysis to understand underlying intentions. One of the 26 interviewees described that good communication is associated with whether the supplier responds on time and uses a familiar language, while another based it on how easy information can be transferred between the companies. One of the 26 interviewees also stated that it is important that the supplier does "not share information discussed in closed rooms" The general intensity of communication is an additional dimension that relates to whether communication is considered being good or bad.

To further expand the qualities necessary to be considered trustworthy, nine out of 26 interviewees described that the supplier should be solution driven and show a genuine interest to work with Volvo Cars, but also with the products being sold. In line with this the supplier should be willing to discuss subjects beyond financials and be customer-oriented. Five of the 26 interviewees also mentioned the value of a supplier being willing to provide with extra services as factors that have a good influence on trust. This could mean that the supplier provides with input regarding improvements of both products and processes or dedicate extra time to assist Volvo Cars in situations when problems might occur. In short terms, does the supplier "walk the extra mile", do they seem to have an "ambition and heart for Volvo Cars" or do they show an "eagerness to work for Volvo"? In total, 17 of the 26 of the interviewees turned to these more affective aspects and how to assess them. For example, Volvo Cars' demands are quite comprehensive and will take time to fully understand and approve, hence one should react if it is done too quickly. Additionally, one should also consider how well the supplier answer questions, is everything taken seriously or are they being nonchalant? Do they seem interested in the business?

The experience of and with a supplier was considered an important quality to be considered trustworthy. With the word experience, both Volvo Cars' experience and the actual experience of a supplier is intended. When referring to own experience, 17 out of the interviewees said to look for the supplier ability to stand by its' word and keep promises. When looking at the

experiences of the supplier, 11 of the 26 interviewees said that one should look for performance track-records and reputation in terms of for example which other OEMs the supplier previously delivered to. If other premium OEMs been their customers, the supplier would be considered being more credible. In line with this, the size of the supplier should also be considered. Additionally, one of the 26 interviewees stated that since it is hard to become a supplier for Volvo, existing suppliers automatically has advantages. If complex products are to be purchased, trustworthiness increases with the number of years a supplier been producing similar products. When Volvo has experience of a supplier, they have the benefit of previous track-records such as delivery reliability in terms of time and performance. They also have knowledge about whether promises have been kept and if actions historically been correlating with what has been spoken. In total, 20 out of the 26 interviewees mentioned aspects described in this section.

In summary, the identified qualities are presented in Table 24. This table also include a column labelling the qualities as hard, soft or a combination of these, sprung from a comparison between the qualities and those presented in Table 6 and Table 7. Those sharing similar elements was simply given the same label.

Table 24 - Qualities that results in trust

Quality	Description	Characteristics	Quotations
Affection	Refers to a supplier's interest in working with Volvo beyond expectations. This involves factors as "walking the extra mile", showing genuine interest and providing inputs regarding potential improvements.	***Soft aspects***	*- "Trust is increased if supplier show ambition and heart for Volvo"* *- "Are they willing to discuss other things than money?"* *- "The providing of extra services"* *- "Supplier sharing more information than necessary gains trust"*
Appealing Abilities	Refers to the attributes a supplier shows that exceeds the basic requirements. This can involve factors such as culture, internal alignment, top management continuity and proactive work. Other aspect can be a clearly stated hierarchy and mandates.	***Hard aspects***	*- "Existing continuity within actions, existing procedures and processes"* *- "Stable organizations, independent of certain individuals"* *- "Common incitements within the organization"* *- "Clearly stated mandates, it should be easy to escalate"*
Basic Requirements	Refers to the supplier meeting the basic requirements for being a supplier to Volvo Cars. This can for example include passing the MSA, SEM, signing the PPGTC and being approved by internal stakeholders.	***Hard aspects***	*"Basic parameters are important, for example the MSA and signing code of conduct"* *- "Must pass the basic requirements"* *- "No deviations from specifications"* *- "Continuity in delivering parts with the right quality"*
Communication	Refers to a supplier's ability to communicate and withstand a good dialog. This involves factors such as having clearly stated ways of communicating, and cross-functional dialogs both externally and internally.	***Combination of hard and soft aspects***	*- "Changes or disturbances should be communicated in advance"* *- "Suppliers must be compatible for good communication"* *- "Very important to have an open and productive dialog"*
Experience	Refers to experience-based factors built on, for example, previous first-hand interactions with the supplier but also the supplier's qualifications. Can include aspects such as whether the supplier consequently kept its' promises or which other OEMs have the supplier previously delivered to.	***Hard aspects***	*- "Track-record is important. Not only with Volvo, but also other Swedish companies and global automakers"* *- "Live up to their word"* *- "Walk the talk"* *- "Keep promises"*
Honesty	Refers to the honesty of a supplier. Involves factors such as being direct, not deliberately misunderstand information for own benefits and not intentionally pricing too low.	***Combination of hard and soft aspects***	*- "A supplier should be as direct and honest as possible"* *- "Suppliers sometimes tend to utilize changes to increase price"* *- "One supplier deliberately misinterpreted designs for own gains"*
Professionalism	Refers to the perceived professionalism of the supplier's representatives. Involves factors such as to what degree the representative gives a serious impression, shows social competence and if relevant information is provided. Further aspects can be if they are knowledgeable, well prepared and acts within its' mandate.	***Combination of hard and soft aspects***	*- "Taking Volvo's contracts seriously, understanding the content"* *- "Professional way of working"* *- "The supplier should go into details"* *- "Being smart, and not disrespectful"* *- "The representatives should be knowledgeable"*
Transparency	Refers to the transparency of a supplier. Involves factors such as general openness, sharing information by e.g. providing complete cost-breakdowns, and being transparent regarding own potential shortcomings.	***Hard aspects***	*- "Share information - give and take"* *- "Put things on the table"* *- "Understand the benefits of sharing information"* *- "Suppliers should be transparent"* *- "Transparency is important"*

4.4 Weighting of the qualities

Using the data derived from the questionnaire, each quality could be assigned an individual weight. In Table 25 the weighting derived method 1.1 can be seen. In addition, confidence intervals were calculated in order to investigate if it existed consensus between the questionnaire respondents.

Table 25 - Result derived from analyzing method 1.1

Quality	Average/ Weight	Standard Deviation	Confidence Interval	
Basic Requirements	0,17	0,09	0,15	0,19
Honesty	0,15	0,05	0,14	0,16
Professionalism	0,12	0,07	0,10	0,13
Transparency	0,11	0,05	0,10	0,12
Communication	0,11	0,04	0,10	0,12
Experience	0,11	0,04	0,10	0,12
Affection	0,08	0,04	0,07	0,09
Strategic Fit	0,08	0,05	0,07	0,09
Appealing Abilities	0,07	0,04	0,06	0,08

Figure 5 illustrate how the confidence intervals is overlapping for different qualities using method 1.1. Thus, the weighting, and thereby the ranking, cannot be consider being representative for the entire questionnaire population, and the hypothesis of it existing consensus must be rejected.

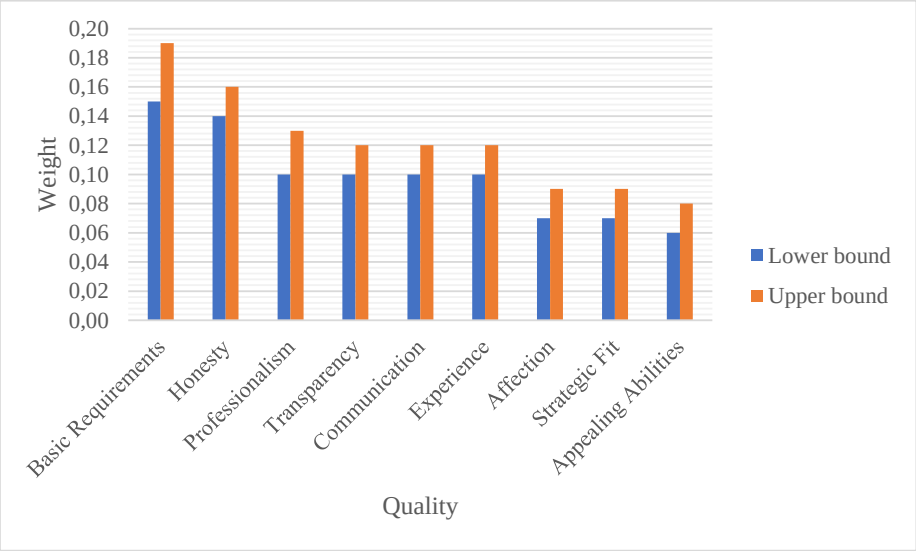


Figure 5 - Chart of confidence intervals in method 1.1

Seeing that the result of using method 1.1 did not imply that consensus existed, attempts were made to aggregate the data points by decreasing the scale used for comparing the qualities. The result from method 1.2 was derived by decreasing the nine-point weighting scale to a five point one, see Table 26.

Table 26 - Result derived from analyzing method 1.2

Quality	Average/ Weight	Standard Deviation	Confidence Interval	
Basic Requirements	0,16	0,09	0,15	0,18
Honesty	0,14	0,04	0,13	0,15
Professionalism	0,12	0,06	0,10	0,13
Transparency	0,11	0,04	0,10	0,12
Communication	0,11	0,04	0,10	0,12
Experience	0,11	0,04	0,10	0,12
Strategic Fit	0,09	0,05	0,08	0,10
Affection	0,09	0,04	0,08	0,09
Appealing Abilities	0,08	0,04	0,07	0,08

However, the inconsistency between the weightings remained and the hypothesis of it existing consensus must be rejected. This is illustrated in Figure 6.

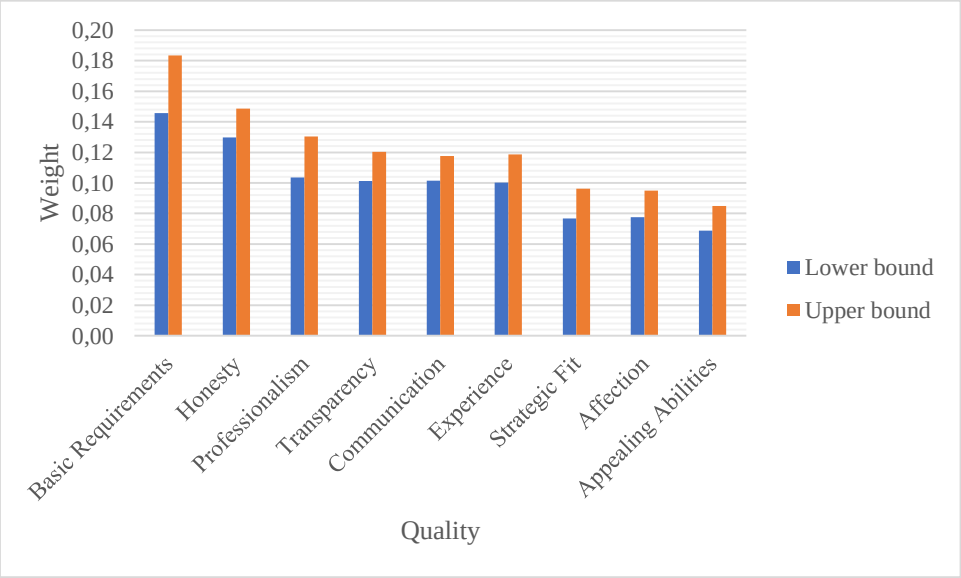


Figure 6 - Chart of confidence intervals in method 1.2

As no consensus had been found, the result was also aggregated using method 1.3. The aggregation was made by comparing the identified qualities with those identified in literature, and combining those with similar traits. This led to the qualities being decreased from the previous nine to only five. Table 27 illustrates the new arrangement of qualities.

Table 27 - The qualities that are grouped into new ones when analyzing method 1.3

Original		Aggregated
Affection	→	Affection
Appealing Abilities Basic Requirements Communication	→	Competence
Experience Professionalism	→	Experience
Honesty Transparency	→	Honesty Transparency
Strategic Fit	→	Strategic Fit

The weightings derived using method 1.3 are presented in Table 28.

Table 28 - Result derived from analyzing method 1.3

Quality	Average/ Weight	Standard Deviation	Confidence Interval	
Competence	0,35	0,08	0,33	0,37
Transparency	0,26	0,07	0,24	0,28
Experience	0,22	0,08	0,20	0,24
Affection	0,08	0,04	0,07	0,09
Strategic Fit	0,08	0,05	0,07	0,09

However, as Figure 7 show, the weighting of strategic fit and affection cannot be determined to have a specific rank between each other. Looking at the weighting of transparency and experience, they do not overlap. But, when taking the fact that the qualities, and their original definition, are altered with into consideration, the margin between the upper bound of experience and lower bound of transparency are deemed too small to derive any conclusions from. Hence, method 1.3 did not imply any consensus between the respondents either.

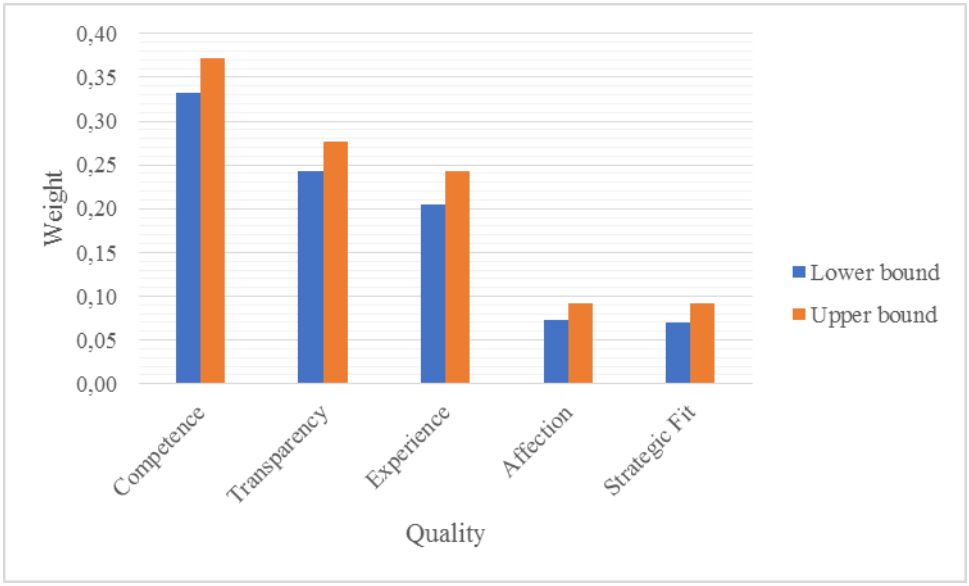


Figure 7 - Chart of confidence intervals of method 1.3

In a last attempt to validate if consensus exists between the respondents, method 2 was used. Method 2 is of different character than method one, thus no confidence intervals could be constructed. The result derived using method 2 can be seen in Table 29. However, the test for consensus showed that only two of the respondents reached a geometric cardinal consistency index (GCCI) below 0.35, therefore no general consensus could be proved using this method either.

Table 29 - Result derived from analyzing method 2

Quality	Weight	Rank	Consensus
Honesty	0,16	**1**	No
Basic Requirements	0,15	**2**	No
Communication	0,13	**3**	No
Transparency	0,11	**4**	No
Experience	0,11	**5**	No
Professionalism	0,11	**6**	No
Affection	0,08	**7**	No
Strategic Fit	0,08	**8**	No
Appealing Abilities	0,07	**9**	No

Additionally, when conducting the t-test regarding the probability of the derived weight of each quality have a greater one it is being compared to, some conclusions could be drawn. Table 30 illustrate the probability that a quality has a greater weight over another one can be seen, i.e. the hypothesis is made that quality will have a weight greater than the one it is being compared to. Comparisons are made rows against columns, i.e. the quality in each row should be compared the quality in the columns. The color red highlights instances where the hypothesis that a quality will have a weight greater than the one it is being compared to should be rejected on a 95% significance level.

Table 30 - P-values derived from the t-test

	Basic Requirements	Honesty	Professionalism	Transparency	Communication	Experience	Affection	Strategic Fit	Appealing Abilities
Basic Requirements	**50%**	96%	100%	100%	100%	100%	100%	100%	100%
Honesty	0%	**50%**	100%	100%	100%	100%	100%	100%	100%
Professionalism	0%	0%	**50%**	75%	76%	85%	100%	100%	100%
Transparency	0%	0%	16%	**50%**	52%	69%	100%	100%	100%
Communication	0%	0%	14%	48%	**50%**	69%	100%	100%	100%
Experience	0%	0%	6%	30%	31%	**50%**	100%	100%	100%
Affection	0%	0%	0%	0%	0%	0%	**50%**	62%	98%
Strategic Fit	0%	0%	0%	0%	0%	0%	39%	**50%**	95%
Appealing Abilities	0%	0%	0%	0%	0%	0%	1%	2%	**50%**

Reject the null hypothesis on a 95% significance level

For example, in Table 30 it can be seen that the hypothesis that basic requirements will have a greater weight than honesty should not be rejected on a 95% significance level. Simultaneously, it should not, on a 95% significance level, be rejected that the quality has a greater weight than professionalism, transparency, communication, experience, affection, strategic fit and appealing abilities. In other words, it is likely that the questionnaire respondents, on average, agrees on the fact that the quality of basic requirements is indeed seen as the most important quality when assessing a supplier trustworthiness. Using the same logic, it is valid on a 95% significance level to say that appealing abilities will have a weight that is *less* than basic requirements, honesty, professionalism, communication, experience, affection or strategic fit.

However, some uncertainty in the result exists. For example, the hypothesis that professionalism, transparency, communication or experience will attain a greater weight in relation to each other must be rejected.

In summary, based on the findings derived from conducting the t-test, the relative rank of the qualities can to a 95% significance level be assigned according to Figure 8.

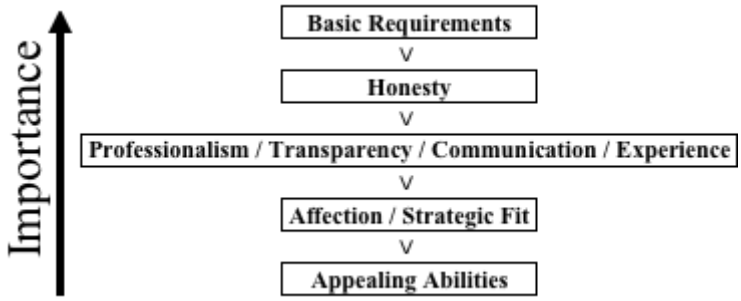


Figure 8 - The relative rank of the qualities, on a 95% significance level

To conclude, the result derived from the survey, independent of method used, showed that it cannot statistically be validated that it exists consensus between the respondents regarding which weight to assign each quality. However, it possible on a 95% significance level to determine the rank of some of them. Regardless of this, seeing that method 1.2, 1.3 or 2 did not provide with any new insights, the weights derived from method 1.1 and the rank derived from conducting the t-test will be given most attention in the discussion chapter.

5 DISCUSSION

This chapter consists of a discussion regarding potential gaps and similarities between the result derived from the case study and the theoretical background.

5.1 How trust is understood

The result identified two different mindsets regarding the trustworthiness of suppliers. During the literature review, no such mindsets was explicitly described, which meant that no expectations existed regarding further insights of this as a result of this study. However, with the emerged mindsets at hand, Khosrowjerdi's (2016) description of dispositional trust as individual traits regarding the inherent willingness of a trusting stance, seem applicable. The identified mindsets implied that people either assumed trustworthiness of a supplier or that trustworthiness must be earned, and the underlying reasons for this might be explained by the traits of each individual's disposition. Hence, one could assume that the mindsets simply are a representation of dispositional trust yet slightly developed by actually articulate a scale of willingness, i.e. either it is assumed or it need to be earned.

The mindset implying that trust must be earned seems relatable with Stuart et al., (2012) findings regarding the levels of trust. Seeing that the interviewees turn to statement concerning contracts, it can be argued that the level of trust in these instances are semi-weak. Implying that these seven purchasers are potentially more likely to utilize contractual safeguard, in terms of rigor and completeness, to reduce the need for a trusting stance. Efforts are likely to be made to increase the cost associated with breaking the relationship, i.e. Lewicki and Bunker (1994) findings regarding calculus based trust. It is also in line with Chiles and McMackin (1996) findings regarding interacting with suppliers having a "tactical-type approach", which could negatively affect supplier relationship efficiency. Simultaneously, it connotes to the deterrence based trust presented by Rousseau et al., (1998), where trust depends on contract and potential penalties related with breaking trust. Based on the fact that trust is considered as a factor that needs to be "earned" by showing compliance and consistency it is deemed likely that relational trust, i.e. trust "derived from repeated interactions between trustor and trustee" (Rousseau et al., 1998), is relevant.

Starting with the view of trust involving hard aspects, the different views found in literature can serve as a reference of explanation. First, it is clear that the functional view of trust, mentioned in Khosrowjerdi (2016) research, is relevant seeing that it relates to direct experience. In other words, eight of the 26 interviewees' values personal experience of a supplier before a judgement regarding their trustworthiness can be made. Considering this fact-based view it also connotes to knowledge based trust (Lewicki and Bunker, 1994), since they want to develop an understanding about the supplier to accurately predict their behavior. In line with people assigning trust to hard rather than soft aspects, process-based trust becomes relevant. As described by Dyer and Chu (2000), process based trust enables individuals to put their trust in

a process instead of relying on certain individuals at the suppliers. A relationship-independent view is well suited in a perspective that looks at hard parameters to determine trustworthiness. In a similar manner, it is not surprising that statements such as "walk the talk", to which degree suppliers keep their promises or other measureable qualities are mentioned, as it relates to cognitive trust (Rousseau, 1998; Valtakoski, 2015). Finally, since the hard aspects includes factors that are observable by the buyer through e.g. on-site assessments, it connects to Mayer et al. (1995) definition regarding ability, which relates to demonstrated skills and competences.

When assessing the result from the perspective of having a soft definition of trust, several conclusions can be drawn. Seeing that trust is a feeling that varies between individuals, it is a subjective rather than an objective parameter. Thus, it correlates well with the findings of Doney and Cannon (1997) regarding benevolence, Zaheer et al., (1998) parameter of emotions and finally the component of affection used by Akrout (2015) and Johnson and Grayson (2005).

Finally, there is the portion of Volvo employees that mention trust in terms of being a combination between both hard and soft aspects. At first, it was unexpected that only five of the 26 interviewees explicitly expressed this opinion, seeing that trust was anticipated to consist of mixture between soft and hard aspects. However, when the result was further analyzed, the number of employees grew to 25 of the 26 interviewees. Something that was much more in line with theory, but simultaneously highlighted that it exists discrepancies between how the interviewees describe trust and how they assess it in practice.

Concluding the section of the discussion regarding the view of hard and soft aspects, Doney and Cannon's (1997) definition: "trust is the perceived credibility and benevolence of a target of trust" must be mentioned as a good fit. This since credibility relate to the hard aspects, and benevolence to the soft aspects.

Looking into where trust is placed, the findings seem to be in line with Doney and Cannon (1997) who states that a distinction should be made between the company representative and the organization behind it. However, it is also clear that there is a noticeable difference in which role the representative has during the assessment. One conclusion to draw from this is that the correlation between interpersonal- and organizational trust (Whipple et al., 2013) varies in intensity. In those instances where the representative has a weak significance when assessing the overall trustworthiness of the supplier, the correlation between interpersonal- and organizational trust is low. While in situations where the significance of the representatives is high, the correlation between interpersonal- and organizational trust is strong. Thus, the findings of Stuart et al., (2012), who suggested that there is no significant effect of interpersonal communication when determining the overall trust towards a business partner, can be questioned. Something that, for example, can be supported by the statement "trust in representatives can be transferred to the company". Instead, it seems that interpersonal trust in some instances closely relate to organizational trust. Implying that the representative seems to operate as a mediator for the overall trustworthiness of the supplier, as they "are responsible for

turning confidence into trust". Finally, in those instances where the impact of interpersonal trust between buyer and seller are low the interviewees mention aspect such as "representatives comes and goes, while the company remains". Something that might imply that the influence of process-based trust is greater among these four people

In conclusion, the findings of the interviews show to be largely equivalent to the findings of previous studies'. Especially regarding the view of hard and soft aspects, which was clearly represented in both theory and practice. The findings regarding mindsets were at first considered inconsistent with theory, but after careful examination the similarities with dispositional trust was identified. However, it is believed that the use of the word mindset is a more intuitive representation of the content and will therefore be used in the continuation of this study. Further, the insights whether trust is placed in the company or in its representatives; i.e. organizational trust or interpersonal trust, was not entirely in line with theory. The findings from this study suggest that organizational trust is the foundation of trust in a supplier and that interpersonal trust, depending on the individual, simply has more or less impact on the organizational trust.

5.2 Trust as a supplier selection criterion

Looking at the three major categories of positive aspects, that was identified from theory (Table 4) and the result (Table 22), the overall content is fairly consistent. However, when looking more closely, differences emerge. In theory, trust is mentioned being something that could improve or impair collaborations (Chiles and McMackin, 1996; Jones et al., 2014; Tanskanen and Aminoff, 2015). Collaboration is associated with relationships, especially good relationships, which five out of 26 interviewees believed was favored by trust. The result showed that a trusted supplier is more willing to provide extra services and that trust adds a dimension of feeling into the relationship. In addition, one out of the 26 interviewees confirmed the statement that trust is important for long-term cooperation. Still, a good relationship is not equal to a good collaboration, instead it can be seen as antecedents to each other. One could generate the other, which suggest similarities between theory and practice.

Another positive aspect of trust, that was more distinctively similar between theory and result, was how it can improve business. One of the 26 interviewees described it as "business cannot be made without trust", as theory suggest trust as antecedents to increased market-shares (Dyer and Chu, 2011) and attractiveness (Tanskanen and Aminoff, 2015). Both the qualitative interviews and literature (Zaheer et al., 1998) describes how trust simplifies and increase the efficiency of the negotiation process by removing redundant, frustrating discussions that are irrelevant to reach a business agreement. In line with this, contracts have been discussed in literature (Chiles and McMackin, 1996) as being in less need of comprehensive design. A discussion that was supported during the interviews in terms such as "everything does not have to be documented". Furthermore, the presence of trust in a supplier was concretely mentioned as something that could reduce transaction costs, which obviously are of interest and in line

with creating better margins and of importance to any OEM in the automotive industry. Moreover, Beer et al. (2014) mentioned trust as something that could be used to ensure quality when it is non-contractible. Obviously relevant in the automotive industry, where quality is of high importance (Güttner and Sommer-Dittrich, 2008). However, this was not an aspect being articulated during the interviews.

The fact that trust enhance efficiency and effectiveness of an organization was represented in literature (Jones et al., 2014; Villena et al., 2016) and supported by the interviews as it can reduce bureaucracy and the need for supervising, while increasing the effectiveness of processes. In more general terms, suppliers that are not trusted are considered frustrating to work with, therefore trust could serve as something that ease the daily work. All statements that supports the findings that trust is associated with increased efficiency.

Theory described increased predictability and strategic flexibility (Seppänen et al., 2007) as something that speaks for the importance of trust. It is also assumed to be highly desirable aspects regardless of industry. However, these positive aspects of trust were not mentioned by the interviewees. This could be explained in two ways, either the interviewees are unaware of the effect, or it is simply not seen in the automotive industry.

The literature review mainly highlighted positive aspects of trust, with exception that too high levels of it can imply a loss of objectivity, thus decreasing efficiency (Villena et al., 2016). This negative aspect was not identified during the interviews. However, it was acknowledged that trust in a supplier could be of *no* value, and that a supplier could be considered good even if not being trustworthy. In line with this view, one of the 26 interviewees regarded trust as irrelevant to consider during the supplier selection process. These are statements that relates to how trust stands against other factors that influence the supplier selection, something that previously not has been given much attention in literature. The only statement found regarding its value compared to other decision criteria, was that it is more important than investment and commitment (Valtakoski, 2015). This was not demented during the interviews, but it was outspoken that trust would not be prioritized over price. All of the 26 interviewees agreed that it is difficult to nominate a more expensive supplier without well-articulated arguments. However, efforts are sometimes made to create a better business case for a supplier deemed more trustworthy. That was a distinct contention observed during the interviewees and a good point of reference when discussing how trust was considered of less significance during the selection process. If a supplier can argue its ability to provide with a product of the right quality to the right price, first then its trustworthiness will matter. However, by some respondents trust was believed to serve as an underlying factor and a "foundation for everything", suggesting a larger or equal significance compared to other criteria in the selection process. But that could be argued to depend more on an individual way of looking at trust than anything else. For example, if one sees the fulfilling of basic requirements to be an important indicator of trustworthiness, then obviously the presence of trust will be essential. In other words, it might exist a generic opinion about how trust is valued compare to other factors influencing the

selection process but since the premises of what trust actually is differs, the opinion is difficult to capture.

In general the result showed that trust is an underlying factor permeating several aspects of the activities in a company, but that it is considered difficult to point out how it leads to concrete improvements. Descriptions such as prerequisite for maintain professional relationship, fundamental aspect and how business cannot be made without it, are examples of how it is valued but it is not very specific. In theory, its improvements are more articulated and attached to certain positive aspects. The reason of this could relate to the fact that the method of qualitative interviews allows people to speak their mind freely which could imply more generalized thoughts.

To summarize, the findings show that trust is valued in a similar manner in the automotive industry as in other industries studied in literature. There are some small gaps in terms of how trust increases predictability and strategic fit. More interesting, due to its novelty, is the result regarding how trust is valued compared to other decision criteria. The importance of being able to articulate something's value in money becomes clear. Trust is beyond doubt something of relevance when selecting suppliers, but compared to price the benefits are not as concrete. A company obviously need a positive profit to exist, i.e. the money spent are less than the money earned. The purchasing unit are responsible for what is bought, and thus generate a majority of the spending. By keeping this spending small, the profit is likely to improve. This basic logic has big influence in the supplier selection process, making it an indisputable order-winner for most companies and a clear example of how the positive aspects of trust must be stated in economic terms before becoming an outspoken supplier selection criterion.

5.3 Qualities that result in trust

When comparing the result with theory, it becomes clear that many qualities stated during the interviews are in line with those identified in during the literature review. For example when looking at affection, aspects such as if the supplier has an "ambition and heart for Volvo", if they show "genuine interest", or if they respond to requests in a timely manner, all circulate around the same theme. Namely, that of having the impression of being dedicated enough resources from the supplier. This impression is in line with Johnson and Grayson (2005) findings regarding qualities for being considered trustworthy. Relating to another of Johnson and Grayson (2005) findings, suppliers was mentioned as being associated with a higher degree of trust if they signal that they are interested in initiating a relationship, but also in the products themselves. Something that can be signaled for example by, "walking the extra mile", indicate an "eagerness to work for Volvo" or being flexible in the way they are in doing business. Simultaneously, trustworthiness is evaluated to what extent communication and information sharing is voluntary and undertaken on a regular basis. It is thus apparent that employees at Volvo Cars associate trustworthiness to what level of assistance (Chu and Dyer, 1996), revealed committed behavior (Chu and Dyer, 1996) and the amount of relation specific investments

(Beer et al., 2014) the supplier can demonstrate. In line with these qualities, Doney and Cannon (1997) and Swan et al., (1985) mention "seller intention" and "customer orientation", respectively. Findings that corresponds well with statements concerning the way suppliers answer inquiries and questions. Finally, one of the 26 interviewees stated that one quality of trustworthiness was that the suppliers would not "share information discussed in closed rooms". Factors that can be related to the frequently mentioned quality of integrity and benevolence (Pirson & Malhotra, 2011; Svensson, 2001; Clark et al., 2010)

Looking instead on the quality of experience, similar characteristics can be seen as highlighted by both Chu and Dyer (1996) and Doney and Cannon (1997). Namely, that the length and therefore also the experience Volvo Cars have with a supplier should be considered when assessing its trustworthiness. As seen in the result, 17 of the 26 interviewees refers to "previous experience with Volvo Cars" as something that provides with first-hand experience regarding a supplier's ability to keep its promises and deliver according to agreement. Every time a supplier delivers as promised, the trustworthiness of them increases. Therefore, the opinion that trust is strongly associated with meeting the expectation of the customer (Stuart et al., 2012) is considered supported. Simultaneously, trustworthiness can be assessed by looking at the experience of the supplier in their area of expertise and also the supplier size, as suggested by Doney and Cannon (1997). This is a way of assessing trust that most definitely is relevant at Volvo Cars, seeing that eleven of 26 interviewees considers to what extent a potential supplier has delivered to other OEMs and by looking at the size of supplier. Other more hard aspects that supports the use of Stuart et al. (2012) construct of trust, namely "delivery reliability", are for example historic track record in terms of previously manufactured components, ability to deliver on time/keeping deadlines and while maintaining the right quality.

Looking at the quality of honesty, it was mentioned by numerous authors (Jones et al., 2010; Svensson, 2001; Swan et al., 1985; Whipple et al., 2013) and also well represented during the interviews. Intuitively, honesty is probably strongly associated with trustworthiness. Hence this will not be an object of detailed discussion. However, something of greater interest is how honesty is assessed in different contexts and thereby if it exists any differences. In the context of this study, the interviewees spoke of honesty in terms of being direct and not deliberately misunderstand statements which somewhat relates to Svensson (2001) description of honesty relying on a supplier's motivation to lie. Further, the subject of suppliers intentionally pricing too low could be considered a contextual interpretation of a supplier making false claims (Jones et al., 2010). In summary, the interviewees largely regard honesty the same as theory suggests.

As a result from the qualitative interviews, professionalism emerged as a quality a supplier should possess in order to be considered trustworthy. In this case, the professionalism of a supplier is highly related to the behavior of its representatives. In theory, the representative's role was described but mainly in terms of their competences (Doney and Cannon, 1997; Swan et al. 1985) which relates to basic requirements and appealing abilities. In order to maintain this

distinction between representative's behavior and competence, professionalism should be kept as a category of its own and thus imply a difference between theory and empirical findings.

When looking at the quality of competence identified during the literature review, it is clear that similar traits are relevant at Volvo Cars as well. However grouped into two different qualities, namely; basic requirements and appealing abilities. For example, Volvo Cars employees turn to factors such as signing the terms and conditions or if the supplier meet requirements in terms of MSA or ISO14001, if the supplier have a global footprint, can show financial stability or if they are being proactive. This can be argued being associated with a cognitive aspect of trust (Johnson and Grayson, 2005), which include of the ability to provide with a credible demonstration of skills. In line with providing with this, the value of an outspoken supplier representative mandate was also mentioned, an aspect only identified once during the literature review, with Doney and Cannon (1997) referring to it as seller's power. Moreover, the aspect of a rigid quality assurance process and a continuous monitoring of performance, relates to supplier quality conformance (Stuart et al. (2012). Additionally, managerial competence (Pirson and Malhotra, 2011) was also mentioned as being relevant when assessing supplier trustworthiness, where the interviewees mentioned factors such as whether it exist a clearly defined hierarchy in case of escalation, the degree of top-management continuity and if projects gates are clearly defined. The technical competence of a supplier (Pirson and Malhotra, 2011) was also often mentioned as something to consider. By the interviewees typically mentioned in terms of the supplier passing SQM evaluation tools. In summary, supplier competence is evaluated using a combination of control mechanisms found in the quality of basic requirement as well as appealing abilities is well aligned with literature. Yet, it is believed important to maintain this distinction between basic requirements and appealing abilities since it suggest how competence can vary in importance, but also since the interviewees made a distinction between the two.

Transparency was often mentioned as a quality to consider when evaluating supplier trustworthiness. In line with Pirson and Malhotra (2011) findings, the interviewees turn to general words such as "transparency" or "openness", while others are more specific in how they consider transparency. Exemplified by statements such as "suppliers do not make excuses and delay solutions", "suppliers admit potential problems" or that "no attempts are being made to cover up problems". Additionally, the importance of being allowed to speak with operational employees or walking around the supplier's facilities un-supervised was also mentioned. One aspect of transparency that often was brought up was the importance of suppliers being able to provide with an accurate, clear and well-developed cost-breakdown for their offer. Even though none of the interviewed employee stated it in an explicit form, it relates to the findings of Agndal and Nilsson (2008), who argues that open-book can be used as "a way of showing trust and openness".

The quality of communication, or more specifically the authors' view of communication, was not found explicitly during the literature review, but could potentially be seen as a subcategory

to competence. Seeing that the interviewees turned to aspect as “good communication”, “same language”, “intensity of communication” and “structure in how communication will be done”, employees at Volvo Cars accredits one part of trustworthiness to the easiness of communication between buyer and supplier. Once again, it seems to reflect to the daily work that needs to be performed for the relationship to work. Misunderstandings and spending time to clarify specifications have a negative impact on supplier trustworthiness. Considering the nature of work that is performed in a purchasing department where dialogue is essential, this is not a surprising finding. It does not reflect on communication in terms of frequency or overall “pleasantness” of it, it does however reflect on the efficiency of it. When communication and reaching an understanding is considered relatively effortless, it implies that the buyer and seller are speaking the same language, not necessarily literally but more in terms of technical vocabulary and social norms.

A quality of trust drawn from theory and not found during the interviews was that of the importance of what the authors of this report refer to as strategic fit, in literature referred to “identification (Pirson and Malholtra, 2011), mutual interest (Akrout, 2015), mutual goal (Akrout, 2015) or buyer/seller orientation (Svensson, 2001). The reason behind not identifying it in the collected qualitative data could be explained by the fact that questions concerning strategy and how Volvo Cars should relate to it is believed to be handled on a higher internal level. However, when investigating how the different qualities should be weighed against each other, strategic fit should be included. Depending on its weight, it could then be deemed if it is a quality of relevance or not.

Finally, it can be concluded that a combination between hard and soft aspects trust are present when looking into the qualities a supplier should possess in order to be considered trustworthy. In addition, it is notable that all qualities except “affection”, wholly or partly consists of hard aspects. Whether or not this is unique for the automotive industry has not been investigated, but it can be stated that it is in line with its characteristics.

In summary, it exists nine different qualities that supplier should possess in order to be considered trustworthy. Eight of them are sprung from empirical findings, and the last one was added based on previous research. The comparison showed that the recurrent qualities are honesty, transparency, affection and experience. The additional ones from the findings could however be argued to relate with the quality of competence, that was sprung from theory. Still the distinction adds a depth in consistence with the context’s specific traits and should thereby be kept.

5.4 Weighting of the qualities

As stated in the analysis regarding the result of the survey, no consensus could be found in terms of how the weighting should be done. The reason for this is difficult to define based on this study, but the findings are in line with the discussions seen in literature regarding the many definitions of trust, its components and types (Akrout, 2015; Ganesan, 1994; Lewicki and

Bunker, 1994; Rousseau et al., 1998; Zaheer et al., 1998). Seeing that the result from the survey did not show any consensus regarding the weighting, it could simply be an illustration of this complexity. Further the population who received an invitation to participate was employed at various managerial levels and originated from different regions, which are factors that potentially could affect the result and the ability to draw any concrete conclusions from it. Especially since regional differences might be associated with cultural differences, which was mentioned to have an impact on how trust is understood during four of the 26 interviews. However, all respondents are a part of Volvo Cars' different purchasing departments. Hence, if these qualities resulting in trust are to be systematically and generically assessed across the organization, the weighting must be well motivated and articulated across the different regions. Therefore, if the regional aspects have a big influence on how trust is understood, the weighting of the qualities should potentially vary between the regions. But investigating the potential impact of regional and cultural differences are not within the scope of this thesis, and will not be taken into further consideration.

If putting aside the fact that the participants do not agree, the survey results show that the weights of the different qualities do not vary much in comparison to each other. This was shown for both the used methods, see Table 31.

Table 31 - Difference in minimum and maximum weight depending on method used

Method	**1.1**	**2**
Highest weight	0,17	0,16
Lowest weight	0,07	0,07
Difference	0,10	0,09

This implies that the qualities are of somewhat equal preference. However, considering the relatively large number of nine qualities to consider, divergences in weights tend to be less distinctive. This is further motivated when the qualities were aggregated from nine to five parameters, visualized in Table 27, where the differences become more distinct.

When looking at the individual rank based on the weighting, the use of method one or two did not have a significant impact on the ranking, see Table 32.

Table 32 - Ranking of qualities depending on method

	Rank	
Quality	**Method 1.1**	**Method 2**
Basic Requirements	1	2
Honesty	2	1
Professionalism	3	6
Transparency	4	4
Communication	5	3
Experience	6	5
Affection	7	7
Strategic Fit	8	8
Appealing Abilities	9	9

The t-test validated the indication that basic requirements and honesty are the qualities of most important for a supplier to be trustworthy, just as appealing abilities, strategic fit and affection contributes the least to a supplier's trustworthiness. The four other qualities; professionalism, transparency, communication and experience are of very similar importance and also not possible to set a definitive rank. Strategic fit was the quality that was added based on a gap between literature and the interviews, which might explain it being considered less important. Further one can probably intuitively relate to honesty being an important quality of trustworthiness, however it is not as clear when considering the quality of basic requirement. Therefore it is interesting that basic requirements was considered the most important quality. As providing high quality products is consider being a main method to compete in the automotive industry (Güttner and Sommer-Dittrich, 2008), regulations are increasing (PwC, 2016) and the fact lean manufacturing are dependent on few unexpected interruptions (Rae and Binder, 2012), it might be reasonable that these basic requirements are highly prioritized to be trustworthy in an automotive context. Connecting the result more to the specific case, Volvo Cars' pursuit of being a premium brand further motivates the high priority since the competence of being able to produce with quality automatically becomes of greater importance.

Looking at the overall categorization of hard and soft aspects, no general conclusions can be made regarding one category being of higher importance compared to the other. This since qualities from both categories are shown to be associated with both high and low weighting.

Finally, in order to construct a framework based on the qualities and its weighting, the result from method 1.1 will be used. The reason for this is based on three factors; firstly, no other method showed significantly higher degree of consensus; secondly, it involves least altering with the original findings, and thirdly, it includes a larger population compared to method 2. Still, as previously discussed, the weighting should be discussed between stakeholders before fully established with the ambition of reaching consensus in terms of the relative weight of each trust quality. Potentially, it might be preferred to use the aggregated result from method 1.3 in

practice because the usability might increase with fewer qualities to assess. This, however, is beyond the authors' mandate to decide, but based on the result from the interviews the original distinction of nine qualities is recommended.

6 FRAMEWORKS

This chapter presents two frameworks developed in order to assess the trustworthiness of a supplier, and compare the trustworthiness of several suppliers.

In order to assess and compare the trustworthiness of a supplier, the qualities identified during the research will serve as the basis for evaluation. The weighting sprung from method 1.1, will serve as default, but it will be possible to change in accordance with the reasons stated in the analysis and discussion. Two different frameworks were constructed, each consisting of five steps which will be described in the following sections.

It is recommended to perform the first framework with all suppliers. This is motivated by the fact that solely comparing suppliers with each other gives no information regarding whether a supplier is trustworthy or not, only that it should be considered the most trustworthy compared to the other suppliers. The first framework shows if a supplier is trustworthy or not, which should be of most interest.

The purpose with the second framework is to help comparing up to five different suppliers' trustworthiness. The result provides with which of the compared suppliers that should be considered most trustworthy but the individual rating of each supplier can be seen.

Finally, it should be mentioned that the frameworks, in addition to generating actual scores and ratings, also could be serve as a basis for discussions. Especially when looking at the different questions related to each quality.

6.1 Framework 1

The first framework is used to assess the trustworthiness of a single supplier. In the first step, the name of the supplier is entered. In the next step, the weighting of the qualities is set, either according to the default values or using new ones sprung from a discussion between the decision-makers. This step is followed by the ranking of the supplier within the qualities. The supplier is ranked according to how well it is regarded in terms of each quality. This rank is made according to Table 33.

Table 33 - Scoring scale

Poor	Fair	Average	Good	Excellent
1	2	3	4	5

The rank is based on the answering the assessment questions related to each quality, these questions can be seen in Appendix 3. In the fourth step of the framework, the given rank for each quality is multiplied with its corresponding weight and thereafter aggregated to a final

score. Based on this score, the supplier is deemed trustworthy or not according to the logic presented in Table 34, and the result from this is presented in the fifth and final step of the framework.

Table 34 - Logic behind trustworthiness expression

Level	Not Trustworthy	Somewhat trustworty	Trustworthy	Very Trustworthy
Score (x)	$1 \leq x < 2$	$2 \leq x < 3$	$3 \leq x < 4$	$4 \leq x < 5$

The first framework, with each step, is visualized in Appendix 4.

6.2 Framework 2

The second framework is used to compare the trustworthiness of several suppliers. The major difference from the first framework is that the point of reference is changed, shifting from a scoring scale to being in relation to other suppliers. In other words, the assessment is based on a comparison of how the different suppliers are regarded in terms of each quality. The one deemed to be preferred receives a value larger than 1, which increases with the degree of how preferred it is. The ratings are selected from a predefined list to minimize risk of misunderstandings.

In the first step, the names of the suppliers to be compared are entered. Thereafter, the weight of each quality is set, either according to default values or using new ones sprung from a discussion between decision-makers. In the third step, the suppliers are compared within each quality. This comparison follows the Analytic Hierarchy Process (AHP), and the supplier being preferred over another are given rank according to Table 35.

Table 35 - Scale used to perform comparison of suppliers for the qualities

1	3	5	7	9
Equally preferred	Moderately preferred	Strongly preferred	Very strongly preferred	Extremely preferred

After filling out the comparison matrices relating to each quality, the fourth step of the framework presents the final weight of the suppliers. The supplier being most preferred, and thus considered most trustworthy, is stated in the fifth and final step.

The second framework and its different steps, is visualized in Appendix 5.

7 CONCLUSION

This chapter presents the conclusions drawn from the preceding discussions, and thereby addressing the research questions. Finally, this chapter concludes with suggestions for future studies.

To conclude the findings of this thesis, the research questions will be used to both provide with structure but also ensure that the purpose been correctly addressed. The research questions are:

1. How is trust regarding a supplier understood in the automotive industry?

2. What are the effects of being able to trust a supplier?
    a. How do these stand compared to other criteria affecting the supplier selection?

3. Which qualities should a supplier possess to be considered trustworthy and how are these prioritized against each other?

7.1 How is trust regarding a supplier understood in the automotive industry?

The case study implies that two different mindsets exist within the automotive industry. Either a supplier is assumed to be trustworthy until the opposite is proven, or a supplier is assumed not to be trustworthy and thereby must earn it. The use of the word mindset was not directly found in theory, but its traits related to those of dispositional trust.

The case study show that it exists three views of trust within the automotive industry. The first view implies that trust consists of hard aspects relating to objective measures. The second view implies that trust consists of soft aspects relating to subjective measure. The third and final view suggest that trust consists of a combination between the hard and soft aspects. Additionally, the third view also showed to be represented by a large majority of the interviewees and could also be supported by theory. Hence the conclusion is that the view of trust in the automotive industry is considered to consist of both hard and soft aspects.

The final conclusion made regarding how trust is understood in the automotive industry, is that trust is placed solely in the company and thereby at an organizational level. The supplier's representatives were found to most definitely have an impact on trust, thereby implying that organizational trust is influenced by interpersonal trust.

7.2 What are the effects of being able to trust a supplier

When investigating the effects that trust in a supplier can have, mostly positive aspects emerged. Trusting a supplier can improve the relationship and the daily work, and it is considered important in order to conduct business. Based on theory, increased predictability

and strategic flexibility are also suggested as positive aspects, and should therefore be expressed as being potentially relevant. By solely looking at the number of potential benefits associated with trustworthy suppliers, this thesis can conclude that it is well motivated to include trust as a criterion when selecting suppliers.

The findings were diverse in terms of how trust stands compared to other criteria considered in the supplier selection process. Since no previous studies had suggested how such a prioritization should look like, no external information could be used to bring clarity to the result. However, the result of the case study implies that trust is an important criterion, yet it is not prioritized over price. Hence, it is concluded that before becoming a generally accepted order winner, the effects of trust needs to be expressed in economic terms. First then can adequate comparisons with price be made, which might lead to a different prioritization.

To conclude it is suggested that trust should be included as criterion in the supplier selection process, but it should be internally discussed to determine how it should be valued compared to other criteria of evaluation.

7.3 Which qualities should a supplier possess to be considered trustworthy and how are they prioritized against each other?

It is concluded in the research that the trustworthiness of a supplier relies on nine separate qualities. These are presented Table 36, including a short description, a classification of including hard, soft or both aspects, and a weight between zero and one. The weightings are a suggestion based on the findings, but are recommended to be a subject of discussion before being applied, and can thereby potentially be adjusted.

Table 36 - The nine different qualities of trust. Including their description, characteristics and weight

Quality	Description	Characteristics	Weight
Basic Requirements	Refers to the supplier meeting the basic requirements for being a supplier to Volvo Cars. This can for example include passing the MSA, SEM, signing the PPGTC and being approved by internal stakeholders.	***Hard aspects***	0,17
Honesty	Refers to the honesty of a supplier. Involves factors such as being direct, not deliberately misunderstand information for own benefits and not intentionally pricing too low.	***Combination of hard and soft aspects***	0,15
Professionalism	Refers to the perceived professionalism of the supplier's representatives. Involves factors such as to what degree the representative gives a serious impression, shows social competence and if relevant information is provided. Further aspects can be if they are knowledgeable, well prepared and acts within its' mandate.	***Combination of hard and soft aspects***	0,12
Transparency	Refers to the transparency of a supplier. Involves factors such as general openness, sharing information by e.g. providing complete cost-breakdowns, and being transparent regarding own potential shortcomings.	***Hard aspects***	0,11
Communication	Refers to a supplier's ability to communicate and withstand a good dialog. This involves factors such as having clearly stated ways of communicating, and cross-functional dialogs both externally and internally.	***Combination of hard and soft aspects***	0,11
Experience	Refers to experience-based factors built on, for example, previous first-hand interactions with the supplier but also the supplier's qualifications. Can include aspects such as whether the supplier consequently kept its' promises or which other OEMs have the supplier previously delivered to.	***Hard aspects***	0,11
Affection	Refers to a supplier's interest in working with Volvo beyond expectations. This involves factors as "walking the extra mile", showing genuine interest and providing inputs regarding potential improvements.	***Soft aspects***	0,08
Strategic Fit	Sharing mutual goals and interest. Possible to identify with another organization based on a match of values.	***Combination of hard and soft aspects***	0,08
Appealing Abilities	Refers to the attributes a supplier shows that exceeds the basic requirements. This can involve factors such as culture, internal alignment, top management continuity and proactive work. Other aspect can be a clearly stated hierarchy and mandates.	***Hard aspects***	0,07

7.4 **Summary of findings**

To illustrate the result derived from this research, a conceptual model was created. The model highlights and categorizes the main findings, and can be seen in Figure 9.

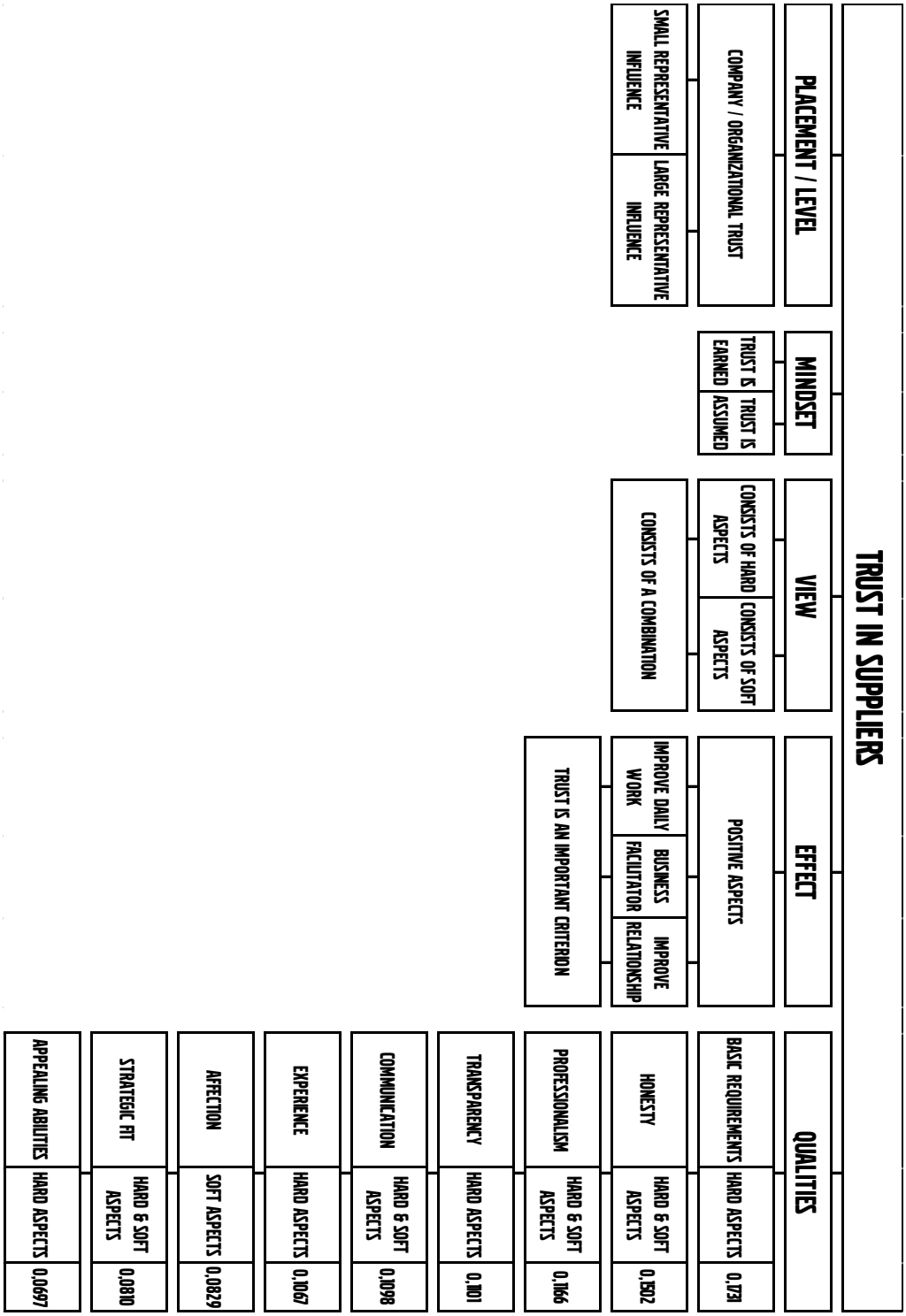


Figure 9 - Conceptual model of trust

7.5 Future studies

In this study, trust in a supplier has been investigated in the context of the automotive industry. Although the findings had similarities with previous research, it would be of interest to apply the same study within a different context. The result derived from such a study would more enable a direct comparison with the findings from the automotive industry. Thereby, highlighting potential differences in the respective industry.

The company used for this case study was Volvo Cars, and its purchasing department, which was selected to serve as an adequate representation of the automotive industry. However, to fully capture the beliefs of an industry, similar research should be conducted with other OEMs as well. Thereby ensuring that the findings derived from this study serve as a representation of the entire industry.

A future study that relates to the insight of this study are to investigate if cultural and regional aspects has an impact on how trustworthiness of a supplier is understood, what the effects are and which qualities a supplier should possess. It would therefore be interesting to conduct a multiple case-study, using OEMs from different cultural origins, thus enabling the opportunity to identify potential differences.

The study investigated how trust stands compared to other criteria in the supplier selection process, where the result suggested the importance of expressing the effect of trust in economic terms. By doing so, it would allow the criterion of trust to more concretely be compared to other criteria affecting the selection process. Hence it is believed that such studies should be conducted, where the effects of trust in a supplier are expressed in terms of savings and costs.

Finally, this study had the purpose of expanding the knowledge of trust in suppliers, determine how it is used and how the insights then could be applied in the supplier selection process. To successfully fulfilling this purpose, some interesting aspects needed to be excluded from analysis and discussion due to the limited time-frame of this thesis. For example, an in-depth analysis of how different parts of the results correlated was not undertaken, but is assumed to be of academic interest. It would therefore be interesting to investigate e.g. whether a certain mindset correlate with a certain view of trust? Or, e.g. if a mindset correlate with the representatives having a certain influence on the trust in the company? The answer to such questions could lead to new insights and thereby further expand the knowledge of trust in suppliers.

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APPENDIX 1 – INTERVIEW GUIDE IN ENGLISH

Interview guide

1. Could you briefly describe what role you have within the company?

2. What is your perspective on the word “trust” in the context of supplier selection?

3. Which qualities/attributes do you believe should be existent in order for a company to be considered trustworthy?

4. How do you assess the trustworthiness of a supplier?
    - How do you validate the trustworthiness of what a supplier says?

5. Do you have any example on a situation where you assess the trustworthiness of a supplier incorrectly?
    - Can you remember what went wrong?

6. Do you have any example on a situation where you assessed the trustworthiness of a supplier correctly?
    - Why did you make that assessment?

7. How do you view the relationship between a company and its’ representatives?

8. How do you view the role of trust in comparison to other factors influencing the selection of a supplier?

9. Based on what previously has been said, is there anything you would like to add?

APPENDIX 2 – INTERVIEWGUIDE IN SWEDISH

Intervjuguide

1. Kan du kort beskriva vilken roll du har inom företaget?

2. Hur ser du på ordet “tillit” i kontexten leverantörsval?

3. Vilka egenskaper/kvaliteter tycker du en leverantör skall ha för att anses vara trovärdig?

4. Hur avgör du trovärdigheten hos en leverantör?
    - Hur validerar du trovärdigheten av det som sägs av en leverantör?

5. Har du något exempel på tillfälle när du bedömde trovärdigheten hos en leverantör fel?
    - Kan du komma ihåg vad som gick fel?

6. Har du något exempel på tillfälle när du bedömde trovärdigheten hos en leverantör rätt?
    - Hur kommer det sig att du gjorde den bedömningen?

7. Hur ser du på förhållandet mellan ett företag och dess representanter?

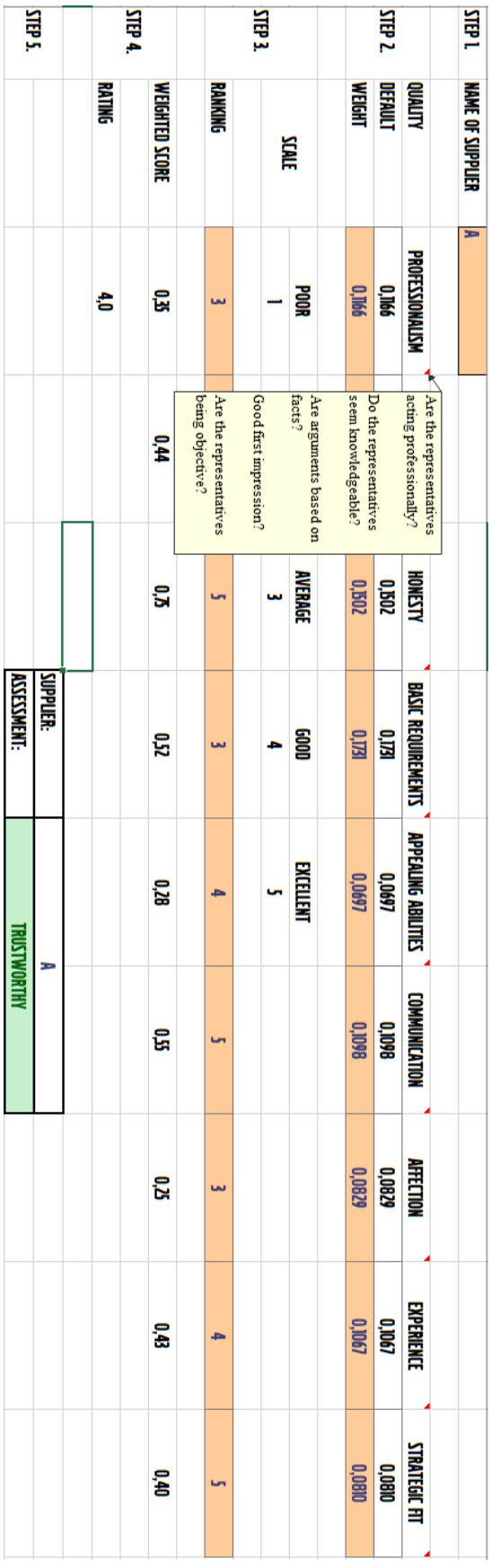
8. Hur ser du på tillit i jämförelse med andra faktorer som influerar ett leverantörsval?

9. Med utgångspunkt från det vi har pratat om, är det något du vill tillägga?

APPENDIX 3 – QUESTIONS TO ASK WHEN USING FRAMEWORKS

Quality:	Professionalism	Transparency	Honesty	Basic Requirements	Appealing Abilities	Communication	Affection	Experience	Strategic Fit
Question 1:	Are the representatives acting professionally?	Transparent in general?	Does the supplier feel honest?	Passing the basic requirements?	Do the supplier have appealing abilities beyond the basic requirements?	Are the supplier maintaining a good and open dialog?	Showing compassion?	Experience with and of the supplier?	Is the supplier a strategic fit?
Question 2:	Do the representatives seem knowledgeable?	Transparent cost break down?	History of "pricing"?	Passing MSA? FTA? D&B? SEM?	Clearly defined hierarchy?	Cross functional dialog?	Showing genuine interest beyond doing business?	Historically kept promises?	Does it exist mutual interests?
Question 3:	Are arguments based on facts?	Willingness to share information?	History of taking advantage of mistakes?	Signing the PPGTC?	Top management continuity?	"Easy-going" communication?	Willingness to "walk the extra mile"?	Previous/existing contracts with other premium OEMs?	Does it exist mutual goals?
Question 4:	Good first impression?	Transparent plant visit?	Large difference compared to cost estimate?	Valid certificates?	Working proactively?	Open regarding issues and challenges?	Working beyond expectations?	Historic track record? Delivery performance?	-
Question 5:	Are the representatives being objective?	Transparent organization?	History of changing attitude after being selected?	Sufficient quality assurance systems?	First class technical competences?	Providing a structure of how to communicate?	Sharing information beyond expectations?	Size of the company?	-

APPENDIX 4 – FRAMEWORK I



APPENDIX 5 – FRAMEWORK II

Step 1.	Supplier	Name of supplier									
	1	A									
	2	B									
	3	C									
	4										
	5										
Step 2.	**Quality**	**Professionalism**	**Transparency**	**Honesty**	**Basic Requirements**	**Appealing Abilities**	**Communication**	**Affection**	**Experience**	**Strategic Fit**
	Default	0,1166	0,1101	0,1502	0,1731	0,0697	0,1098	0,0829	0,1067	0,0810
	Weight	0,1166	0,1101	0,1502	0,1731	0,0697	0,1098	0,0829	0,1067	0,0810

Scale	*Extremely Less Preferred*		*Very Much Less Preferred*		*Much Less Preferred*		*Moderately Less Preferred*		*Equally Perferred*		*Moderately Preferred*		*Strongly Preferred*		*Very Strongly Preferred*		*Extremely Preferred*
	1/9	1/8	1/7	1/6	1/5	1/4	1/3	1/2	1	2	3	4	5	6	7	8	9

Step 3. OBS! Compare from left to right!

Professionalism

Supplier	A	B	C	-	-
A	1	3	5		
B	0,333333333	1	6		
C	0,2	0,16666667	1		
-	-	-	-	-	
-	-	-	-	-	-

Transparency

Supplier	A	B	C	-	-
A	1	0,25	2		
B	4	1	0,25		
C	0,5	4	1		
-	-	-	-	-	
-	-	-	-	-	-

Honesty

Supplier	A	B	C	-	-
A	1	3	6		
B	0,33333333	1	5		
C	0,16666667	0,2	1		
-	-	-	-	-	
-	-	-	-	-	-

Basic Requirements

Supplier	A	B	C	-	-
A	1	1	1		
B	1	1			
C	1	1			
-	-	-			
-	-	-			-

1/5
1/4
1/3
1/2
1
2
3

Appealing Abilities

Supplier	A	B	C	-	-
A	1	3	3		
B	0,33333333	1	1		
C	0,33333333	1	1		
-	-	-	-	-	
-	-	-	-	-	-

Communication

Supplier	A	B	C	-	-
A	1	0,25	0,2		
B	4	1	0,5		
C	5	2	1		
-	-	-	-	-	
-	-	-	-	-	-

Affection

Supplier	A	B	C	-	-
A	1	7	9		
B	0,142857143	1	0,2		
C	0,111111111	5	1		
-	-	-	-	-	
-	-	-	-	-	-

Experience

Supplier	A	B	C	-	-
A	1	5	7		
B	0,2	1	0,25		
C	0,14285714	4	1		
-	-	-	-	-	
-	-	-	-	-	-

Strategic Fit

Supplier	A	B	C	-	-
A	1	2	0,33333333		
B	0,5	1	0,2		
C	3	5	1		
-	-	-	-	-	
-	-	-	-	-	-

Step 4.	**Final Weight**				
	A	0,459349061	1		
	B	0,2515452	3		
	C	0,28910574	2		
	-	-	-		
	-	-	-		
Step 5.	**Most trustworthy supplier:**		**A**		

APPENDIX 6 - SURVEY SPECIFICATIONS

Department	Respondets	Total	Removals due to inconsistency			
			Method 1.1	*Method 1.2*	*Method 1.3*	*Method2*
Purchasing	44					
SQM	26	73	24	16	24	50
Program Purchasing	3					

The t-test was made with data generated with the use of method 1.1 and thereby made with the population (n) of 49.

The table below illustrate the calculated t-values that was used to generate the p-values.

	Basic Requirements	Honesty	Professionalism	Transparency	Communication	Experience	Affection	Strategic Fit	Appealing Abilities
Basic Requirements	0,000	1,756	4,332	4,837	4,858	5,093	6,923	7,069	7,937
Honesty	-3,109	0,000	4,564	5,458	5,496	5,911	9,153	9,411	10,949
Professionalism	-5,850	-3,480	0,000	0,682	0,711	1,027	3,499	3,695	4,868
Transparency	-9,703	-6,181	-1,013	0,000	0,043	0,513	4,185	4,477	6,218
Communication	-10,120	-6,463	-1,096	-0,045	0,000	0,488	4,301	4,604	6,412
Experience	-10,701	-7,012	-1,598	-0,537	-0,492	0,000	3,847	4,153	5,977
Affection	-15,211	-11,354	-5,693	-4,584	-4,537	-4,022	0,000	0,319	2,227
Strategic Fit	-13,750	-10,335	-5,323	-4,341	-4,299	-3,844	-0,283	0,000	1,689
Appealing Abilities	-18,982	-14,783	-8,621	-7,414	-7,362	-6,802	-2,424	-2,076	0,000