A qualitative study on local circuit distribution firms in the haulage contractor industry

Linus Kvist, Sevak Rostomyan
**Abstract**

Haulage contractors are companies that are responsible for delivery of goods with use of trucks and vans. Previous research focus more on the haulage contractor industry in general. This study focuses on what challenges the haulage contractor industry is facing from the view of managers working in local area distribution in Sweden. We also examine what key tools and solutions are used to meet the challenges the industry is facing and what are the reasoning behind these actions.

We propose two research questions. The first question is what challenges the Swedish haulage contractor industry is facing. The second examine what strategies and tools are used by management to adapt to changes in the industry. The study is based on 5 interviews with management in haulage contractor firms and 2 interviews with representatives from industry organizations, for a total of 7 interviews. The interviews were qualitative and performed over phone and face-to-face. By analyzing interviews using thematic analysis we find that the ownership, age and size of a firm impact how it adapts to changes. The adaptation is among others in terms of investments in technologies and collaboration. Another finding is that the industry representatives perceive that customers do not understand the crucial role the haulage contractor industry plays in the economy.

Keywords:  
*Haulage contractor industry, change management, customer behavior, industry challenges.*
Foreword

We would like to thank our supervisor Peter Hultén, our supervisor, for his valuable support and guidance throughout the thesis process, without whom this thesis would not be possible. We would also like to thank our respondents who participated in this study for their valuable help. To you, we give our gratitude.

Linus Kvist                                                 Sevak Rostomyan
Definitions

Agency problems:
Problems that arise when a principal and agent have different interests.

ADR:
ADR is certification that allows a professional to transport dangerous goods and need to be certificated by Myndigheten för samhällsskydd och beredskap.

Cabotage:
Transportation conducted within the border of a country by companies that are registered in other countries.

Circuit distribution:
Distribution where the goods gathered from different companies at a central hub to be transported to its receivers.

Haulage contractor/Freight forwarder:
A company that is active within the transportation of goods and cargo.

Human capital:
The value of intellectual and intangible capital in an organization.

Investment in human capital:
The investment in the education and value of employees.

Local/Close area distribution:
Distribution within the same municipality or neighboring municipalities from where the transport originated.

Lobbying:
Lobbying are any attempt by individuals or private interest groups to influence the decisions of government.

Outreach:
Outreach in logistics, transportation and supply chain refers to activities serving to increase the collaboration across ecosystem to for efficiency gains.

Subprime mortgage/lending:
The practice of extending credit to borrowers with low incomes or poor, incomplete, or non-existent credit histories.

Technological disruption:
When technology significantly alters the way business or industries operate
Too big to fail:
Too big to fail are a concept in where a firm are so large and important for a country that the government is forced to protect it as any harm to the company will impact the country.

YKB:
YKB is a certification that is required for a professional to handle heavy trucks and cargo delivery with several driver licenses (Transportstyrelsen 1, n.d.).
# Table of contents

1 Introduction 1

1.1 Choice of subject 1

1.1.1 Choice of subject 1

1.1.2 Introduction to haulage industry challenges and research gap 1

1.3 Problematization 3

1.4 Purpose 5

1.5 Research question 5

1.6 Expected contributions 5

1.7 Delimitations 5

2 Scientific methodology 7

2.1 Authors’ Pre-existing Knowledge 7

2.2 Research characteristics 7

2.3 Literature search 8

3 Literature review 9

3.1 Drivers of technological change and industry challenges 9

3.1.1 Industry structure 9

3.1.2 Ownership structure and company size 9

3.1.3 Legislation 11

3.1.4 Customer behaviour 12

3.1.5 Technological developments 14

3.1.6 Other factors creating challenges in the industry - Reversed outsourcing, economic situation and price elasticity 15

3.1.7 Model summarising the Industry challenges 16

3.2 Internal developments to face industry challenges 18

3.2.1 Implementation of disruptive technologies - Their benefits and risks 18

3.2.2 Employee development 20

3.3 External developments to face industry challenges 21

3.3.1 Investments in alliances, start-ups, Joint ventures and M&As 21

3.3.2 Outsourcing and other forms of cooperation 23

3.4 Change Management - A catalyst for implementation of solutions 25

3.5 The thesis model based on literature review 28

4 Practical Methodology 31

4.1 Choice of respondents in industry 31

4.2 Sample characteristics 31
4.2.1 General information about the respondents 32
4.3 Interview guide 33
4.4 Treatment of gathered data 34
4.5 Analytical method 34
4.6 Ethical considerations 35

5 Empirical data - Answers from respondents 36
5.1 Industry challenges 36
  5.1.1 Industry structure - Competition, resources and their prices 36
  5.1.2 Ownership structure, company size and age 38
  5.1.3 Customer behaviour 38
  5.1.4 Technological development and legislation 39
  5.1.5 Human capital and related challenges 41
5.2 Internal developments to face industry challenges 42
  5.2.1 Investments in technology 42
  5.2.2 Employee development 43
5.3 External development to deal with industry challenges 43
  5.3.1 Investments in alliances and M&A 43
  5.3.2 Outsourcing & Outreach 44
5.4 Summary of empirical data 46

6 Analysis & Discussion 47
6.1 Industry challenges 48
  6.1.1 Ownership structure, company size and age 48
  6.1.2 Economic situation 51
  6.1.3 Legislation 52
  6.1.4 Customer behaviour 52
  6.1.5 Technological development 54
6.2 Internal developments to deal with challenges 55
  6.2.1 Investments in technologies 55
  6.2.2 Investment in employees 56
6.3 External developments to deal with challenges 56
  6.3.1 Investments in alliances, start-up projects, JVs and M&As 57
  6.3.2 Outsourcing and Outreach 58
6.4 Change Management - A catalyst for implementation of solutions 60

7 Conclusion 61
7.1 Answering the research questions:
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.2 The thesis model based on the results of this study</td>
<td>63</td>
</tr>
<tr>
<td>7.3 Practical and theoretical contributions</td>
<td>65</td>
</tr>
<tr>
<td>7.4 Research limitations</td>
<td>65</td>
</tr>
<tr>
<td>7.5 Ethical implications</td>
<td>66</td>
</tr>
<tr>
<td>7.6 Societal implications</td>
<td>67</td>
</tr>
<tr>
<td>7.7 Future research and improvements</td>
<td>68</td>
</tr>
<tr>
<td>7.8 Truth criteria - Reliability, Validity, Credibility and Dependability</td>
<td>69</td>
</tr>
<tr>
<td>References</td>
<td>70</td>
</tr>
<tr>
<td>Appendix</td>
<td>79</td>
</tr>
<tr>
<td>Interview guide:</td>
<td>79</td>
</tr>
<tr>
<td>Models and tables:</td>
<td>82</td>
</tr>
</tbody>
</table>
1 Introduction

The opening chapter describes and presents the problem background of this thesis by briefly introducing the choice of subject, the haulage industry and some of the factors causing problems in it. Afterwards the purpose of the study is discussed, and a problem formulation is followed. The chapter is concluded by a description of delimitations of the study and expected scientific and practical contributions to the field of Business Management.

1.1.1 Choice of subject
There are ongoing large transformations in the transportation industry which force companies active in transportation or managers related to transportation activities to understand that they need to change traditional ways of thinking. Subjects that are changing and need to be rethought are the management of operations, the technologies of logistics, strategies around their fleets regardless if that’s about haulage transport, ocean carriers or air freights, as well as carrier strategies. Transforming factors mentioned by the managers were technological advancements, economic factors, shifting warehouse points and the so called “Amazon effect” related to consumer preferences which basically is about customers requiring faster and more convenient deliveries (Millar, 2018, Other sources from other countries).

Given the ongoing technological advancements in different industries often creating market disruptions around the world, it was interesting to see what implications those changes have had for Swedish industries. One of the main topics of the discussions for the choice of the subject of this study was the Swedish transportation industry. That under the lights of recent pressures on that industry related to increasing general consumption of goods by the Swedish population. In the center of such discussions was often the state-owned company PostNord (Svt, n.d). Something was obvious - there were other factors affecting the industry besides the consumption. That because the consumption increase itself could be affected by for example technological advancements or increase in purchasing power of swedes making it easier and possible to consume more, thus increasing the pressure on the transportation industry to improve. These factors and reflections lead to some research to see what is going on in the industry, what were the main forces affecting it and what was more interesting what were the reactions of the companies to those forces.

1.1.2 Introduction to haulage industry challenges and research gap
One interesting description of the haulage industry is given by Maria Lindh from Biltrafikens arbetsgivarförbund (Svenskt näringsliv, 2019). To quote: “The haulage contractor industry is the blood flow of society. 8 of 10 delivery are made with trucks and almost everything that we come into contact with have sometimes been transported with a truck”. Starting with the above-mentioned quote emphasizing the importance of the haulage industry the authors of this thesis would like to present an introduction to the haulage industry challenges which will be concluded with the research gap identified during the process of the choice of the research subject.

According to Teixeira customer behaviour is the main factor leading to technological developments and disrupting different industries including the haulage industry thus creating a need for companies to take actions in order to not get in a disadvantageous situation (Teixeira, 2019). Customer behaviour in this case is about the desire of
customers to reduce their costs in terms of time, effort and money which small startups focus on and try to satisfy by doing old things better than current industry players. This study however focuses also on challenges in general and not only on the challenges that create large disruptions. Based on this perspective additional alternative views on drivers of industry challenges have been identified, considering customer behaviour as one among other drivers. Some of those are the industry characteristics in terms of among others factors and factor costs (Häggblom, 2015, pp. 47-50; Rementum research and management, 2018, pp. 2-4; Gabrielson et al, 2017, p.1) as well as ownership structure of industry companies and their size. Further the technological development (E-commerce, IT-systems, autonomous electric vehicles etc.) in the haulage industry and related industries is another challenge for haulage companies (Houghton, 2017, Riedle et al, 2018). Others are political and economic situation in a country leading to changes in environmental legislation with resulting developments and implementation of new technologies (Millar, 2018) or creating trends such as reversed outsourcing or companies leaving a country (Kirby, 2019).

Below, the industry structure and additional characteristics are presented. Those are also considered as challenging for Swedish transportation companies.

Trafa (2016) divides the Swedish transport sector into several distinct parts whose respective size is measure in ton-kilometer. The different sectors are divided into road traffic, shipping, railroad and aviation. These are then divided further into domestic and foreign. Among these different sectors, domestic road traffic deal with largest weight in goods followed by foreign shipping, with domestic aviation only making up a small part of the industry. Of domestic road traffic, 85-90% consist of transport using heavy trucks. Of these transports with heavy trucks 58% started and ended within the same municipality, with an additional 23% occurred within different municipalities in the same county. The percentage amount of cargo weight was 43% within the same municipality and 28% between municipalities in the same county respectively. In term of weight the largest group of goods are ore and additional products from mines quarries. In relative comparison, in 2014 Cabotage only made up approximately 1% of total transport in Sweden domestically according to Trafa (2016). There exist reasons to doubt the reliability of this data as another study by Sternberg et al (2015) shows that there exist methods that allow cabotage drivers to evade and not completely follow the rules regarding cabotage, such the number of trips and time active in the country.

The industry characteristics in terms of changes in demand and supply, service prices and cost composition, profitability and competition do not really follow the logical patterns as in other industries. There are happening a lot of changes in the haulage industry in Sweden (Karlsson 2017, Prop 2016:17/16, Transportstyrelsen, n.d; Svensk Handel, 2018; Einride, 2019) and around the world (Millar, 2018; Houghton, 2017) among others in terms of customer preferences and technological developments that create challenges for industry players. There is further increasingly high demand for haulage services and there is often not enough capacity for facing the demand (Bodensjö, 2018). The problem with capacity is connected to bottlenecks in terms of lack of skilled labour (Transportstyrelsen, 2019) and sometimes even in terms of longer waiting time for deliveries of ordered trucks by automotive companies (Direkt, 2010). The fierce competition is another problem (Gabrielson et al, 2017, pp.1-3). That is one of the factors that keeps the prices for the haulage industry low (Busso & Galiani, 2018) despite the high demand of the haulage services. These together with the capital- intensity of the industry (Rementum research and management, 2018) results in low profitability of the haulage companies. In other words, there is high demand, high competition and difficulties related to supply side as
well as difficulties related to haulage service princes and the profitability of the industry which continues to be at low levels. There can be other factors resulting in the prices and profitability of the haulage companies being low which this study may reveal during the research process.

Further a set of different tools for solving the problems caused by above mentioned factors and trends have been identified (Millar, 2018). Those are investments in new technologies for improvement of operational efficiency (Limbu et al, 2014; Leviäkangas, 2016; Meyer et al, 2013; Boehm & Hong, 2018, Table 1) and customer satisfaction (Macgillavry & Wilson, 2014; Tse et al, 2009), human resource developments (Natter, 2018), cross-industry cooperation in terms of alliances (Saeed, 2013), outsourcing (Judenberg, 1994), outreach (Millar, 2018) etc. The solutions of the problems themselves often rise challenges for some companies in the industry thus creating a need to understand how to overcome those.

During the choice of the subject there was identified that the above described challenges and their solutions often related to transportation industry in general, and there were not many studies describing those components from the perspective of the close area circuit distribution segment of Swedish haulage industry specifically, which can be considered to be a research gap. The research gap is especially clear when it comes to how companies active in that segment react to existing challenges from a managerial perspective.

The problems are in other words not universal for all segments of the industry, as described by Rementum research and management (2018) and therefore there is a need to view both the problems and their solutions from the perspective of a specific segment.

The assumption of the gap is thus based on the findings that show little specificity in the challenges and their solutions for close area segment of the haulage industry instead being mostly about the haulage industry in general and conducted on the global level or on country level other than Sweden. Understanding that transportation industry and the close area distribution segment of the industry specifically are one of the main pillars of modern economies to succeed in their race for development and improvement of the wellbeing of their citizens, it is important to make a thorough research and fill the gap.

The sources of the industry challenges and their solutions provided an overview of how to structure the thesis and how to formulate the research question. The lack of research around how haulage companies in the circuit distribution react to those problems and what are the effects of those actions outlined the suitable choice of the research method, namely that a more qualitative approach should be taken. In addition, some solutions had societal components further supporting the choice of the method.

1.3 Problematization

The term haulage contractor is not precisely defined and can be applied to a number of professions in a number of fields in the transport industry, and the same goes for freight forwarder. Since haulage contractor is such a broad term it can be equally applied to a small one-person delivery firm as to a conglomerate such as DHL and the likes. This also means that there exist a wide variety of conditions and market circumstances for different companies depending on what segment in the industry a firm is active in.

Further, the current market environment is rapidly changing as a result of technological innovation, political change with a developing legislation and a change in how haulage
contractors are owned and structured. In addition to these the industry is experiencing a shortage of qualified labour and at the same time firms in the industry are facing intense competition both from the local and international players (Gabrielsson et al, 2017, pp.1-3). Parallel to that there is an increasing demand for the haulage services because of more demanding and consumerist culture of modern societies but at the same time the industry is facing low profit margins which together with the lack of sufficient personnel, slows down the industry growth. High degree of competition in this situation often exacerbates possible problems a firm might get and can act as a catalyst for shading light on them. Bodensjö (2018) provides some insight in how haulage contractor firms see the situation and discusses some of the worries that they have. Bodensjö (2018) shows that a substantial number of firms have been forced to deny contracts due to the lack of labour and that they face diminishing revenue. Why does these happen, which are the main drivers behind and what steps do the industry players take to face the raised challenges and survive?

The haulage contractor industry in Sweden is characterized by a large number smaller family firms that are owned by single families, and a relatively small fraction of the industry is operated by a few large companies as described in SCB Industry key figures for firms in the category “Vägtransport av gods samt godshantering” for 2017 (SCB, 2017) and Eklund (2015, pp. 19- 22, 63-64). The same data presents additional key figures such as describing the financial results for firms in the industry and specifically profit margins that depending on the interpreter, could be considered as quite low (Eklund, 2015, p. 42). The margins are traditionally at low levels with low growth rates. The profitability in the industry in general has decreased, and that even more than in other industries (Bodensjö, 2018). This in combination with the large number of firms can imply a highly competitive industry.

Changes to technology is of profound importance to the industry and is expected to substantially impact it in the future. Miller (2018) discuss some important factors affecting the industry in a disruptive way. The main factors behind these are consumers and technological developments. Namely increased consumption and higher demands of customers together with increased automation and implementation of information technologies are the main factors that currently create challenges for the industry players, especially for those who do not react to these changes properly.

During the study several solutions to the above described challenges have been identified. Those in general terms are called internal and external developments that companies usually conduct. The internal ones are related to development of human capital and implementation of new technologies for operational efficiencies. The external developments include cooperation across and industry from several perspectives.

While what have been discussed previously - industry challenges and their solutions, are related to the haulage industry, they focus mainly on larger scale changes on global level or related to several countries and regions besides Sweden. We have so far been unable to find research that examines how Swedish haulage contractors closest to the customers view and react to this developments, or what understanding they have about how customer demand change and how they predict the current situation will impact the way they will act in the future. This especially when it comes to research around the haulage industry in Sweden.
1.4 Purpose

The purpose of this study is to explore how managers in the Swedish haulage contractor industry with operations in the close area circuit distribution adapt their management skills and practices to challenges in the industry environment.

1.5 Research question

Based on the purpose of this thesis the following research questions have been formulated:
- Which are the main challenges currently facing the Swedish local circuit haulage contractor industry according to managers?
- Which are the key tools and strategies to solve the problems caused by the challenges facing the industry and which are the rationales behind those?

1.6 Expected contributions

Practical contribution:
Haulage industry faces an uncertain future as technological development, changing customer demands and intensive competition put increasing pressure on the firms active in the industry (Sveriges åkeriföretag, 2017). Prior research covers multiple fields of the industry. Despite it, the authors have not been able to find research regarding to circuit distributors active in local distribution which has been identified as a gap in the research. They have further been unable to find research from management perspective on how management in these firms act when faced with technological disruptions. As such this study will contribute to further understanding of those actions. Firms can also use this study to examine how to improve profitability and resource usage of a company. Moreover, research in this field can help policymakers, investors, firms as well as organizations related to the industry, as this study can help understand the actions of these firms during technological change driven by various factors, and as a result take actions that create the desired results.

Theoretical contribution:
The theoretical contribution of this study is based on industry analysis. The contribution has less focus on pure theoretical contribution and more on how the information can be applied. The theoretical contribution is how this study can be used as a foundation in future research and increase understanding for the haulage contractor industry from a theoretical standpoint. It provides additional information on an industry with characteristics that can impact the viability of management theory.

By focus on a single industry this can help to update existing understanding of the industry and how management adapts to changes in the current environment and changing conditions. The study can complement existing theory by adapting it to the specific conditions of the haulage contractor industry. Through a literature review, a research gap in local circuit haulage contractor industry was identified. This study can therefore increase the understanding for management in this industry.

1.7 Delimitations

This study is limited to Swedish haulage contractors that are active in domestic close area circuit distribution and are in interrelation with each other and international haulage companies. It further includes trade unions that represent the Swedish haulage contractor
industry. The study covers the geographical area of Sweden but is based in data from Stockholm, Umeå, Trelleborg and Tomelilla.
2 Scientific methodology

*This chapter discuss the fundamental theoretical assumptions that will be used in this study.*

2.1 Authors´ Pre-existing Knowledge

As mentioned before the authors of this thesis are two students studying at Umeå University who are writing this paper as a degree project. They have different backgrounds both in education and experience from the field they are researching. Sevak is enrolled in Civilekonomprogrammet with a focus on management, namely business development and have no previous experience in the field of transport or the logistics industry and have not undertaken any specific courses in logistics. He however has sufficient knowledge from the fields of corporate governance, organizational behaviour, corporate strategy and finance. He further has personal connections in the industry. Linus are enrolled in International Business Program with a focus accounting and have previous courses in logistics and business culture. He has worked periodically for a haulage contractor with both administration and parcel delivery. He has personal connections in the industry. Thus, the authors have some existing knowledge about the industry and the subject. Due to previous experience in the industry, there is risk of bias from the authors. The authors have taken measures to limit their bias. As such, the risk is considered negligible.

2.2 Research characteristics

Bryman & Bell (2017, p.395-397) outline some of the differences and similarities between quantitative and qualitative research. Some are minor, such as a preference to use words compared to numbers. Other have larger impact on the context, such as they prefer either structured or unstructured research. It is important to keep in mind the similarities that exist between the two methods. These similarities can vary from practical aspects such as a common goal of attaining data to connecting the analysis to relevant literature or practical use of scientific questions.

It is assumed that the aspects such as ontology and epistemology are already known information to the reader and as such will not be discussed in detail. In short, the ontological assumption takes an interpretivist stance where reality is assumed to be subjective and are dependent on the individual. Epistemological assumptions are the philosophy of what knowledge is valid. This also follow the interpretivist stance the researcher is involved with the data through the interviews and as such are not able to maintain distance from respondents.

When conducting research, it is required to choose a preferred target population, sample method and sample size. The choice in these questions highly depend on the subject in question and the nature of the research. Some methods can produce different results, for example in-depth interviews will have difficult to achieve the same sample size as a questionnaire. Bryman & Bell (2017, p. 405-407) cover different sample methods that fit qualitative research. Qualitative research is generally built upon samples with respondent that provide more interpretative answers. One important point is that qualitative data is highly dependent on the context in which it takes place in and takes place during interpretivist assumptions. In this context answers are non-binary and need additional information to produce any data of value. Another common characteristic of qualitative data compared to quantitative data is the difference in reliability and validity. Qualitative data tend to be highly dependent on the context in which it is obtained in and
apply less over time. As an example, interviews provide in-depth information at the moment of the interviews, but the data is fully dependent on the context of the interview and will provide less value should the context change. The benefits of qualitative are that it allows for a study to gain more in-depth information that would be more difficult to obtain with other methods but in general deal with fewer respondents due to the work behind. Another example of qualitative data is focus groups that are similar to interviews but deal with groups of respondents at the same time instead of interviews singular.

Qualitative is in most situation opposed by quantitative methods. Quantitative data in general are objective and depend less on the context Collis & Hussey (2014, p. 130). A common example of qualitative data is data that can be examined in a statistical analysis. This most common in positivist studies, and although it can be used in qualitative studies, such data would need to be quantified.

Since this study depends on a very contextual data that is difficult to quantify, in this study will better work the qualitative approach.

Based on what is discussed above, the choice is made to perform a qualitative study. A qualitative study would enable for deeper knowledge and access to information that would be difficult to obtain and discuss with qualitative data. Another reason is that the study aims to examine data that are opinions and based on experience, something that can be difficult to extrapolate into numerical values.

2.3 Literature search

The searching process included using the Umeå University library database as a foundation and proceeded to supplement this through the use of Google search and Google scholar. Literature search started with broad initial searches with the combination and use of keywords such as “Transport”, “Technology” and “Market disruption”. Once decent grasp on the subject developed, searches became more specific with keywords such as “haulage contractor”, “freight forwarder” and “Circuit distribution”. These different terms were used to gain insight into previous research methodologies used to research transport and what characterized discussions and research methods.

Scientific articles are the most prolific among the sources that are used for this study as it provides scientific support for the thesis. For support mostly primary sources have been used, as it decreases that risk that previous data is misinterpreted, to avoid the wrong interpretations and to align it with other researchers. As some terms and explanations have been translated from Swedish into English, there is a risk that the meaning has been partly lost in translation.
3 Literature review

This chapter presents theories and studies that describe the main sources of challenges for the transportation industry and continues with the presentation of several common solutions and tools to face and solve those challenges.

Figure 1

Figure 1 presents the general structure of the literature review.

3.1 Drivers of technological change and industry challenges

3.1.1 Industry structure

The haulage industry is decentralized as the market share of large haulage companies is relatively small - only 25% of the revenue in the industry is generated by companies that have more than 100 employees indicating that the competition is high. In combination with cyclical demand in the haulage industry, a number of factors impact the industry. High capital intensity, stable cost structure with employees, fuel and depreciation of assets traditionally being the highest cost drivers presses the profitability of the haulage companies (Eklund, 2015, pp. 47-50; Rementum research and management 2018, pp. 2-4; Gabrielson et al, 2017, p.1). To solve the problem haulage companies have built relatively complex networks of small companies such as small road transporters, freight forwarders etc., to spread the costs inside them by cooperating with each other. This leads to even lower margins when there are a lot of hands on sharing the same tusk to reach the final customer (Rementum research and management 2018, pp. 2-4). Another characteristic of the industry that becomes highly problematic is the shortage of qualified labour (Transportstyrelsen, 2019).

3.1.2 Ownership structure and company size

Industry structure as described in the previous chapter and its characteristics create challenges for the industry players. Some of those characteristics such as ownership structure of haulage companies and company size as well as the challenges created by those are discussed below. There is also a discussion on how companies react to those challenges.

According to Thomsen & Conyon (2012), majority owners can decide over the company strategy and operations, including investment decisions. Often, such owners are families.
Managers in family owned companies usually are expected to behave more responsibly and in interest of the owners where the owners and the management usually are the same individuals reducing agency problems such as making investments in things that does not increase the shareholder value (Thomsen & Conyon, 2012, pp. 17-19, 127, 310). However, their investment and growth possibilities/capabilities in the Swedish haulage industry are limited as family owned companies are mostly small size companies who compete in a highly competitive market with low margins, as described by SCB data (SCB, 2017). The problem of low margins in the industry but on a global level is also emphasized by Choe et al (2015). The authors further stress that in order to survive in a long run, especially during economic crises, companies need to increase the profitability and that not only by working on the bottom line by increasing the company efficiency but also by differentiating their services and products. Higher profitability will mean growth in size and survival in tough times.

Another risk with family or majority ownership is tunneling which means that majority owners organize transactions on unfavorable conditions with other companies they own, thus taking money out of the company. Large shareholders can also have idiosyncratic inclinations which does not follow the principle of value maximization for the shareholders. They can decide to have family members as managers of the company despite better alternatives from outside or they may refuse to sell the company in case of a very good offer which minority shareholders would prefer (Thomsen & Conyon, 2012, p. 53). As the source states - “Failed succession, e.g. from a clever father to a stupid son, is the Achilles heel of family-owned companies.”.

Even if majority owners besides families can also be individuals and institutional owners such as governments, investment banks and other corporations and can have some similarities such as those mentioned in the previous paragraph their identity however differs substantially. They have generally different incentives and will affect the corporate governance and the company performance accordingly. Investment banks are often more interested in shareholder value maximization than for example governments which can have other objectives than the maximization of the shareholder value (Thomsen & Conyon, 2012, p. 53). An example of such company is the state-owned PostNord which has the responsibility or a so called social mandate for mail services in Denmark and Sweden despite the annual losses in that shrinking (-9% mail volumes 2017) branch of the business (PostNord, 2017, pp. 3, 7, 26). Family ownership is according to the Thomsen & Conyon (2012, p. 53) somewhere in between those two types of ownership.

As mentioned above not only the ownership structure but also the size of a company matters for how it behaves and responses to the environmental changes. The importance of size in the ability to adopt new technologies for increasing the effectiveness of companies is emphasized by Buonanno et al (2005). It shows that company size is more important than business complexity for implementation of new technologies. Large companies often do not implement for example ERP systems because of organizational reasons such as the difficulty of managing the integration of the processes and inconsistencies during the implementation process. The small companies do not implement such systems often because of financial and external reasons such as “the opportunity of the moment”.

The size of a company also matters when the company is considered as “Too big to fail” meaning it is too big and can affect the economy in case of going bankrupt or which has huge strategic importance for a country/countries and other stakeholders (Young, 2019). It is than expected that the state where the company is located or which owns the company will bailout it in case of financial distresses thus possibly leading the company to more
risk taking and irresponsible investments (Duchin, & Sosyura, 2014). Examples of bailouts happened in the banking industry in US during the 2008 financial crisis caused partly by high risk taking in the subprime mortgage market segment (Nolen, 2018, Duchin, & Sosyura, 2014). A kind of bailing out happened when the Swedish and Danish states covered the losses of PostNord generated by the Danish branch of the company as well as gave the company one extra day for delivering mails thus reducing the company's financial problems (Eriksson, 2017, PostNord, 2017, p. 4). It is however unclear whether the factum of the existence of a stable source of money as the tax-money affects the actions of PostNord leading to the above-mentioned financial distress if we do not count for the losses caused by the mandate of mail deliveries.

3.1.3 Legislation
In 2015 the Paris agreement with the goal to limit carbon emissions was decided upon by a substantial number of the world’s nations (Paris Agreement 2015). In Sweden, this agreement was accepted in 2016 with the enactment of (Prop 2016:17/16). According to this proposition, the goal of the agreement is to keep the global warming far below 2 degrees Celsius and actions will be taken to try to keep the change in temperature below 1,5 degrees, compared to pre-industrial levels (EU, n.d.). As a result of these goals the EU commission proposed ((1) European parliament, 2018), new vehicles are required to have 20% less emissions in 2025, relative to emissions in 2019. In addition, a proposition with the aspiration goal to have 35% less emissions (compared to 2019) until 2030, with the goal to be revised in 2022. The expected benefits from this proposition is lower emissions, an increase in BNP and creation of new work opportunities, less fuel costs for new vehicles and savings from cost of oil. In the initial stage these requirements will be applied on large trucks and lorries, which according to the paper make up to 70% of emissions from heavy vehicles. In 2022 the law will extend to encompass other vehicles such as small trucks and buses.

In amendment P8_TA-PROV (2018)0455 ((2) European parliament, 2018), The EU parliament accepted the commission's proposal with substantial amendments. In the amendments the parliament recognize that most freight operators are of small and medium size and as such it is important to create incentives to support more efficient vehicles.

An example of the implementation of technological changes in the transport industry forced by legislation, is the (European parliament) 165/2014 legal framework for implementation of tachographs and resting times for chauffeurs. A number of motivations for changes to the law has been provided. The law is an extension of (EG) 561/2006 which is the initial law concerning digital tachographs. One of the benefits with using the technology is that it’s connected to a satellite thus providing a cost-efficient way to determine a vehicle's position and make the task of supervision for regulators easy. A legislation based on this framework exists in Sweden requiring from haulage drivers and companies to have tachographs on their cars called “färdskrivare” (Transportstyrelsen, n.d). Millar (2018) shows some of the effects if tachographs installed in trucks operating in the US transportation industry. This system replaces the previous paper-based alternative which gave more freedom to drivers when reporting their driving hours. The decrease in the flexibility by that technology has resulted in increase of the transportation prices which for some companies can reach up to two times the price of transportation when working with the traditional paper-based alternative. The reason according to some executives is that trucks can sometimes get stuck in traffic, be on a bridge or be just a few hundred meters from a rest stop and then it isn't rational to stop. Another shortfall of this legislation that isn't mentioned by Millar (2018) can according to the thesis authors be the deficit of drivers that makes the ELDs inflating effects on the service prices even higher.
That because in this way the labour is not used maximally and that rises a need for additional drivers.

3.1.4 Customer behaviour

An interesting perspective about core sources of industry disruptions is provided by Harvard professor Thales Teixeira (Teixeira, 2019). By disrupting industries, the author means an effort of a new company to try to take over a fairly large share of the market from the larger established companies during a short time period. Based on many years of research he has come to the conclusion that it is the customer behaviour that initially drives disruptions in different industries around the world and not technologies or the mix of customer demands and technological development as it is the case with Houghton (2017). That are the customers who drive for example startups to focus on specific needs in the customer value chain and satisfy them better than larger companies do, thus disrupting the industry. In the core both larger companies and startups are however doing the same things and that is why according to the author the larger companies do not always get better at doing what they do even if they acquire such startups together with their technology. In other words, Teixeira (2019) finds that the main reason of disruptions in the industries are customers in terms of changes in what they need, what they want and how they behave. That change has created a large wave of customers moving from larger retail chains towards startups and online-shops. Customer behaviour according to Teixeira (2019) is dependent on three currencies that customers pay with for products and services and want to reduce those payments as much as possible. Those are time, effort and money. As long as customers want to find a better dial they strive after reducing these costs. For example, if a company such as Birchbox sends beauty products home to the customer to test at home in a convenient environment the desire of convenience of the customer is the disrupting factor here and not the company’s idea sending the product home to make the testing process convenient for you. They base their actions on customer’s desire of convenience, thus customer’s desire is the driving factor behind companies’ actions.

Before continuing Teixeira’s (2019) view on customer behaviour and its impact on development of new technology and disrupting industries it is also worth to mention that customer behaviour itself can be affected by different factors leading customers to different perceptions of what convinces, or a good price mean to them. Customer behaviour is according to Muniady et al. (2014) dependent on the economic situation and personality. The economic situation affects the customer behaviour significantly. In economic crises customers’ perceptions of risk connected to their money is high thus they start spending less in contrast to a better economic situation. Personality as a driver of customer behaviour in this case is in terms of buying based on cognitive patterns specific to each consumer that drive its behaviour as well as in terms of how products or brands reflect one’s self-image. The view of Muniady et al (2014) on economy as a driver of customer behaviour is in line with Teixeira’s (2018) view on customers desire to minimize among others their monetary costs when deciding what to buy. The personality part is however a different perspective which cannot really be explained for example by Teixeira’s (2018) convenience factor of customer behaviour.

Personality can thus be considered as a separate additional factor driving how companies develop their technologies and products to satisfy customer desires connected to personality.

Attitudes of customers from different generations are also factors that drive change as seen during last decades, resulting in challenges and opportunities for the business (Angus & Westbrook, 2019). Customers from the group of last generations want more control over
their choices as a reaction to the increased uncertainty and turmoil around them. They in contrast to the previous generations expect to get high speed and low-cost deliveries of consumer goods as well as desire to get detailed and real time information about the status of their orders, their location and delivery details. Such expectations push companies to create new partnerships and invest in technologies (Houghton, 2017).

There are also other trends connected to attitudes and values that effect customer behaviour and the way they buy which changes the way business is done and the amount of services that need to be provided parallel to shopping by the customer which in its turn affects the haulage industry as a result. One of them is that Customers want to get more control over their stress levels caused by internet and therefore search after ways that can lower that effect. They further are according to the study more aware of the impact they have on the planet by their consumption and therefore start shifting towards healthier and more environmentally friendly lifestyles. Further customers are more price aware as they increasingly rely on their peers when doing shopping decisions (Angus & Westbrook, 2019). Changes in customer behaviour are also emphasized by Choe (2015) and Millar (2018). The latter adds that previously transported loads passed through three to four hands before reaching the final customers, but the increased demands of speed and convenience of deliveries means that the loads need to pass through almost twice as many hands through a net of warehouses and third-party logistic providers.

Growing e-comerse is one of the main forces driving technological change in industries such as consumer goods and transportation which also has many connections to the above described changes in customer preferences in terms of convenience, lifestyles, attitudes of new generations towards using online shopping platforms instead of physical ones etc. (Houghton, 2017; Angus & Westbrook, 2019, Teixeira 2019). Online shopping is also about efficient use of time which is a part of a so-called efficiency-driven lifestyles when customers want to save their time and instead spend on different aspects of their everyday lives as described by Angus & Westbrook (2019).

E-commerce makes up a large proportion of sales (51% in 2016) which is increasingly done through mobile phones. The online shopping through such different channels pushes retailers to focus on increasing the customer experience when buying through them, if they want to stay competitive and not lose customers. That further increases the pressure on improving the supply chain and shipping. This approach is called omni-channel logistics (Houghton, 2017).

In order to gain additional understanding on how e-commerce is changing it is important to compare it to the retail market and physical stores. This important since in the end, both demand transportation. Svensk Handel (2018) provide comprehensive information on this shift. It shows that retail have lost market share compared to e-commerce for a long time and as a result have led to decreasing number of firms involved in retail. This is reflected in the market shares of revenue among retail, with the largest share belonging to ICA (17%) (Svensk Handel, 2018, p. 11). It further shows that in larger sectors of retail e-commerce growth is lower. The market share of e-commerce in term of category vary significantly, from insignificant to dominating. In the future, as the study suggests, an increasing number of deliveries will be home deliveries, food in particular.

To return to Teixeira (2019) and the authors discussion of drivers of change and technological developments he suggests that customer behaviour drives development of technologies that disrupt industries but until now really gamechanger technologies created by startups are according to him have been very few, one of them being mobile phones.
The rest are mostly hype generated by PR agents and media to give the technology companies a momentum.

According to Teixeira (2019), calling Uber instead of taxi, renting an Airbnb instead of a hotel room, buying a book on Amazon by just reading a good review or comment about it, or by previewing it in the convenience of your home are small changes of behaviour of millions of individual customers with the desire to reduce those three costs that become the force disrupting those industries.

Teixeira (2019) has further found that customers who disrupt in one industry they do similarly in other industries which they are interested in and buy from. The research has shown that customers who use Uber also tend to use and buy via the Amazon and Amazon app, in contrast to those who do not use Uber or Amazon. Similarly, those who tend to use these two services also have higher chance of using Airbnb. Those using all the above-mentioned services tend even more to purchase Birchbox, Trove and Venmo products or services. Because these are completely different industries people driving their business in one of them are mostly focused on that one industry (90-97% of the time according to IBM research) and do not see change waves in and from others.

Teixeira (2019) concludes that there are many industries and that he has summarized seven of them in his book that can be used for search of change waves and thus act as indicators whether there are new waves coming to your own industry. The transportation industry is one of them.

To conclude the above presented information there can be seen other factors driving the technological developments and industry disruptions around the world other than the three costs of customers described by Teixeira (2018) but what is similar for all such factors is that they are related to customers and that the customers are the ones that are influenced by those factors to make purchases in the way they do, which in its turn drives change in industries where the customers make their consumer decisions.

3.1.5 Technological developments
Technological developments are one of the main sources for technological change and industry challenges (Millar, 2018). As mentioned earlier, technologies are disruptive for companies that do not implement them as their competitors or do that not effectively. Those who technologies that do the same tasks much better, disrupt the industry and get the larger companies’ market shares. Some of disruptive technologies and their implications are described below.

Transport companies try to solve problems of rising transportation costs connected to among other factors the driver deficit by developing electrical autonomous cars and automating the industry. An example is Tesla Semi trucks. The Swedish company Einride has developed an autonomous electrical track which has been the first of its kind to be used on the public roads of Sweden by the logistic company Schenker (Einride, 2019) Examples of IT technologies for automation of the industry currently being developed by startups are systems for management of fleets, transportation, Marketplaces for shippers and carriers to better utilize transport capacities, Virtual forwarders, platforms for tenders etc. (Riedle et al, 2018). Such technologies must be included in the medium- and long-term planning, as stated by Millar (2018) and Houghton (2017). However, some of the executives in the survey from Millar (2018) agreed that the total automation will take many years. Despite these when it comes to the existing trucks there are already a lot of improvements and automation especially related to safety measures such as special
technologies that slow down the car or inform the driver about risks connected to the weather in advance, or radars, cameras and sensors for the environment of the car etc.

Another disruptive force covers the technologies in the back-end operations. The main technologies that according to the survey of Millar (2018) can make the early adopters competitive are artificial intelligence, blockchain technologies, machine learning and Internet of Things. The industry increasingly relies on computing based strategic decision making, resource planning as well as real time decision making related choices of routes or trucks based on real time data gathered from trucks, warehouses and other segments of the value chain. The best-informed companies will make the most success in their decision making and activities resulting in better performance.

Despite making companies more flexible to changes in the environment, cloud based, and real-time control mechanisms of supply chain processes are also used in integrating different parts of the business processes to improve the company overall and not only some parts of it and this is another trend discussed by Millar (2018).

Innovation in supply chain going on in the transportation industry is another important factor driving technological change. Increasing customer experience in the trade channels, described in the previous chapter rises another trend that is called digital supply chain. That includes increased utilization of IoT technologies and data collected from different segments of supply chain and analyzed to get increased understanding of how to improve the service and be more efficient in operations (Millar, 2018).

3.1.6 Other factors creating challenges in the industry - Reversed outsourcing, economic situation and price elasticity

Swedish manufacturing companies are increasingly relocating their operation to Sweden from abroad (Karlsson, 2017). The drivers of these can be very different, starting from the political factors (Kirby, 2019) finished with the desire to be close to the market companies serve (Government of the UK, 2018, pp. 124-125; Daily Caller, 2019; Juneja, n.d.). Another indicator of the trend of relocations can be the increased investments in industrial enterprises in Sweden which has surpassed the predictions of the SCB (2018). What is more interesting for this study is that such relocations are one of the factors creating increased demands for transportation services as the relocated manufacturing companies also often have the need to transport their products and this logical assumption cannot be interpreted otherwise. The increased demands for transportation services created among others by such relocations create high demand for heavy vehicles. That however creates bottlenecks in the heavy vehicle industry which in its turn results in longer waiting time for getting the ordered vehicles (Direkt, 2010) which means the haulage companies also get bottlenecks in their operations and have to refuse many orders (Bodensjö, 2018). Increased demands for transportation services and vehicles also means increased demands for drivers and as mentioned in previous chapters there is already a deficit of drivers in the haulage industry (Transportstyrelsen, 2019). That in its turn means the deficit will continue to increase if different factors continue fueling the trend of relocation of companies. Such causal effects have also been observed in US which have put high pressure on the haulage industry and is one of the drivers moving the industry towards increased implementation of technological developments for increasing its efficiency (Millar, 2018, pp. 6-7). The above described trends create large challenges for the haulage industry and related industries but they can however also be driving factors for investing in new technologies for productivity improvements and cost cuttings or differentiation of
the service to increase the margins as it happens in US where there is similar industry structure and trends.

The industry has other characteristics that impact it. One such is the cyclical nature of the industry with booms in activity based in the situation of the general economy. An example of changes in the economic cycle influencing the transport industry is presented by Moschovou & Tyrinopoulos (2018). This study examines the impact of the economic recession in Greece on the transport industry, including the local haulage industry. What it shows is that the freight industry was severely impacted by the recession and its activity decreased by up to 40%. Another example of how the contractor industry follows the general economy show how the amount goods transport is closely tied to BNP during periods of growth. (SIKA, 2008, p. 16). The economic crisis of 2008 greatly impacted the Swedish haulage contractor industry with increasing numbers of bankruptcies and increasing pressure on firms. (SvD, 2008). What this show is that the business cycle of an economy has profound impact on haulage contractor industry, a pattern that is applicable across time and nations.

This situation can possibly be explained by the theory of elasticity of demand (Sydsäter & Hammond, 2012, p. 229-231). Elasticity of demand as equation explain the relationship between changes in price and changes to demand. An example of this is how 1% increase in price lead to 1% decrease to demand. Other conditions exist that are less linear. The two most extreme points are perfect elastic goods, and perfectly inelastic goods. Inelastic goods are good that are not impacted by changes in price. Example of this are crucial medications that required for a patient to live. The opposite of this is fully elastic goods where minor changes to price will have a relatively larger impact on demand. An example of this is generic budget goods.

There are numerous of metrics that can be used to measure the elasticity of demand for transport. They vary greatly depending on the type of goods and the methods of transport as customer have different demands based on these variations. Beuthe et al (2014) present how elasticity vary based on a number of factors and show how a difference in what kind of goods are transported have a noteworthy impact on the elasticity, such agriculture goods or miscellaneous goods. This study show that road transport is very elastic in general. This is relevant as changes in prices of haulage contractor services will have greater negative impact on demand for firms in the industry relative to the change in price.

To summarize this information, this show that the industry is sensitive to changes in price and is severely impacted by changes in the economy in general. This is relevant in the current climate for a reason. Currently Swedish economy, while still in a grow stage (Konjunkturinstitutet, 2019), is slowing down which potentially can lead to challenges for the haulage industry if it does not take action earlier (Konjunkturinstitutet, n.d).

3.1.7 Model summarising the Industry challenges

The above described chapters describe different factors in the environment of a company. That environment can also be divided into different layers based on the level of influence that a company have on those factors. Thus, it is logical to structure these different challenges in a model in a way that shows that logic.

The closest environment to a company is the company's organizational environment itself. Thus, the ownership structure and company size which are directly related to the company
and challenges created by them are under direct influence of the management of a company, can be categorized under the “Organizational challenges”.

The challenges that are related to the haulage industry (which surrounds a haulage company) but are not under direct control of haulage companies and can be relatively more difficult to influence in comparison to challenges at organizational level, are organized under the “Microenvironmental challenges”. Those are industry structure, customer behaviour and technological developments related to the haulage industry.

Similarly the factors presented under the “Macroenvironmental challenges” can be considered as mostly outside of a company control or influence zone which means the company can just try to defend itself from such challenges but cannot directly affect them as they are too big and influential than companies can be. That can be about consumer trends or economic crises at global or country level that companies just need to deal with and take action accordingly.

A closer look can show that both the micro and macro environmental challenges have similar components presented in the model. That because some of the factors can have different implications at different levels thus also the company influence on them can be different. An example is the customer behaviour. Customer behaviour of the closest customers can be influenced by marketing or by advocacy activities. Customer behaviour in terms of global trends can be difficult to influence and companies will need to adapt to them as described above. Legislation is another one that can be influenced locally through trade unions, but which can be almost impossible to influence for example at EU level.

Furthermore, almost all the challenges in the literature review are presented in an order that follows the same logic of distance from a company in terms of control or influence the company has on those factors as in the model. That even despite the repetition of some factors in both micro and macro levels. An exception is the industry structure which is placed in the beginning of the chapter as it fits more as an opening subchapter where there is presented some characteristics of the industry before going into the presentation of other sources of challenges.

The following model represents only the challenges and sources of challenges in the haulage industry which conditionally are called “Challenges”. It will be complemented with additional components after the measures taken by companies to face the challenges are presented in the coming chapters.
3.2 Internal developments to face industry challenges

3.2.1 Implementation of disruptive technologies - Their benefits and risks

It is important to understand that the disruptive technologies described in the problem background are disruptive for companies that do not implement them and thus risk to get into a disadvantageous situation. The technologies described as partly responsible for the problems that companies face, are also the solutions for most of the problems. Thus, that is critical to describe the benefits they contribute to the industry in order to broaden the understanding whether companies should invest in new technologies and which of them they should focus more efforts on. For finding out which benefits enabled by the technologies should be presented, the Millar’s (2018) suggestions of benefits have been served as a start point. They are based on interviews from four hundred C-suit managers.
responsible for transportation, logistics and supply chain operations in different industries, thus making the chosen benefits reliable. Those are visibility/accuracy, workforce satisfaction and productivity as well as customer satisfaction. There exist other categories, but these have been considered to be the most relevant for this study.

It is obvious that the benefits can also be reduced if technology is implemented and managed in a wrong way by not considering some factors connected to the existing workforce and the technology itself. Thus, the potential negative aspects of implementation of new technologies as well as the topic of change management will also be covered in the next chapters.

Visibility/Accuracy:
For a haulage contractor it is important to keep track of the goods they are responsible for and since customers increasingly demand control and information on where their products are. Changes in technology create possibilities for more detailed tracking of product and would allow tracking that is both more difficult to remove and easier to integrate into the supply chain of customers. This is what Boehm & Hong (2018) proposes that with the development of blockchain technology, it will allow greater accuracy when tracking goods during transport and would make it more difficult to counterfeit the digital signature of delivery tracking systems, as well as provide greater protection for the digital keys companies use when conducting business. Actions this would enable for a shipping company is an improved ability to “describe shipping status” and to “Inquire product history” Boehm & Hong (2018, Table 1). This system would have some negative aspect. Before the system can be implemented it require a complete infrastructure present in every aspect of the supply chain, which mean that every customer that use this system need to invest in tools, software and workers able to use this, and haulage contractors would need to both use it but also explain for less able customers. This would create short-term costs and reliance on third parties to manage the software.

Technology as discussed above can provide considerable benefits for a firm in tracking deliveries and providing additional visibility on their operations to customers. The question is what those technologies can have for implications for management. Meyer et al (2013) examine how this additional visibility and tracking in practice impact actual control over operations and what its implications are. The result of the study is that while investments in tracking increase, it does provide sufficient evidence that operational control by management lead to higher productivity and lower risk in operations. This is attributed to systems that help to react to unforeseen events and for the technology that supports the management to understand cargo treatment.

Workforce Satisfaction and productivity:
A study by Limbu et al (2014) provide insight on how change in technology in a firm can impact workforce satisfactions for a firm. The study examines satisfactions of salesforce in India and found that investment in technology improve productivity as well as job satisfaction. This spread to have an indirect positive impact on administrative tasks (work not directly related to a primary task)

A second example is provided by Leviäkangas (2016). This study finds that digitalization and increasing technological have a weak impact of productivity in the industry sector compared to other sectors. While it shows a general correlation between technology and productivity on an international scale, this relationship is weak compared to other factors. This difference is more pronounced when compared to other parts of the Finnish economy
that have been affected by digitalization. Reasons behind this difference are multiple. One is that despite the skilled labour of the country, firms have been unable to implement technology efficiently due inability to incorporate it efficiently into operation.

Millar (2018) give some insight in this subject equal technology with tools. They find that worker satisfactions improve then when provided the optimal tools for a task. Technology is one method to gain such optimal tools.

Customer Satisfaction:
Customer satisfaction can come from different actions a firm take and what customers demand from a service and can change by the direct actions of the firm and not solely by changes to technology. Macgillavry & Wilson (2014) discuss what customers consider important when dealing with logistics firms and what they request to improve more. The most important aspect of a haulage contractor is the quality of the service that are offered but what is requested to be improved is the ease by which they do business. Macgillavry & Wilson (2014, p. 10) present what aspect can be improved. This includes the use of IT and new technologies that are used to provide additional insight into the systems and process of the firm. Further state that the negative impact from procedures that change internal processes with the goal to improve customer satisfaction need to involve employees, involve third parties and to look at the transaction from the view of the customer.

Tse et al (2009) propose the use of artificial intelligence (AI) to improve the logistics of a firm and as a result improve the customer satisfaction. It achieves this by using automation for problem-solving procedures. It focus on the technical structure of the AI and as such provide more details on how to analyze AI in order to understand how to use it to improve customer satisfaction, and how by using AI to increase the agility of a supply chain and use this advantage to improve customer satisfaction.

Furthermore, Millar (2018, p.10) states that the use of technologies such as AI Machine learning will allow transport companies to better understand their customers and their needs and act proactively to satisfy their needs instead for traditionally being reactive.

3.2.2 Employee development
Human capital is defined by Encyclopædia Britannica (2019) as “intangible collective resources possessed by individuals and groups within a given population”. This are things such as skills of employees, education and other assets that are controlled by the employees. Natter (2018) discuss some of the benefits of investing in employees and human capital. The benefits that are generated by investing in employees are multiple. An example of this is investing in education for employees with the goal of increasing their productivity, and to increase workers loyalty towards the company. Should the education support their professional career, it will further increase their motivation. The article further states that this can also increase happiness of employees which itself increase productivity even more. The article highlights that investing in employees can come with considerable lost investment in case the employees choose to leave to company. If the investment is involved in competitive industry it is recommended to tie demands or certain lengths of employment into a contract.

Investments in employees and initiatives taken towards increasing the employee satisfaction can also be considered as employee development. Employees are satisfied when they enjoy their work, have acceptable payment, get promoted, have access to supervision by higher level managers and when they have good relationship with their co-
workers etc. So, job satisfaction is not only related to salary. These factors create a good working atmosphere for employees and can lead to better job performance, to organizational citizenship behaviour, to customer satisfaction, reduced absenteeism and employee turnover, as well as reduced risks of purposefully harming the company when dissatisfied. Employee satisfaction leads also to increased profits for companies (Robbins & Judge, 2014, pp.39-42). The measures taken to increase the employee satisfaction will also contribute to attracting and keeping other productive employees which is crucial for example for the haulage transport industry both when it comes to track drivers and administrative personnel.

3.3 External developments to face industry challenges

Besides collaboration in form of simple contracting and outsourcing for facing challenges there are also other collaboration forms that require much more investments and commitment such as building strategic alliances and investing in Joint Ventures and start-up projects in order to get synergies in terms of greater efficiencies in operations or use them as a source for innovative technologies that will result in competitive advantage. There are also methods of solving the problems by acting by your own and taking all the burden of investments and risks on yourself. One such method is M&A. These methods of doing business and using them as shields during difficult times are common in almost all industries thus it should be considered for the haulage industry as well.

3.3.1 Investments in alliances, start-ups, Joint ventures and M&As

Saeed (2013) analyses the actions of different contractors within the transportation industry that use different vehicles for transportation within the same supply chain. The author further analysis possible different alliances between these different kinds of transport companies. Those are divided into three categories: small firms with trucks, large firms using large trucks and firms using ships and that ship goods over land.

Saeed (2013) present several benefits that arise from forming alliances between these kinds of companies. These benefits include things such as improved economies of scale, improved economies of scope, easier to reach critical mass for required amount of goods and higher flexibility in delivering to customers. The findings conclude that price of service is higher for trucking firms compared to shipping but that despite this trucking still have a competitive advantage over shipping derived from higher versatility, lower waiting times and closer delivery to the destination. In collaborations, the benefits depend on the alliance. One advantage that can come is higher profits as a result of increased market power that come from the collaboration. Between a small trucking firm and a larger firm, the benefits are more limited and mostly come from increased flexibility. The benefits are greater when between a ship firm and a larger trucking firm. These advantages are a result of the different firms making use of the weaknesses of each other, such as using ship for cheaper long transport while using the flexibility of trucks for shorter deliveries. It also allows for a greater range of value-adding services and improved quality of service.
Another type of alliance occurs when large companies’ investments in start-up companies or start-up projects with the goal to get future gains that will give competitive advantage to the investing company. Large companies increasingly cooperate with smaller ones which are often startups that develop strategically important innovative technologies that could benefit the larger company in the longer run. Such cooperation is often in form of an acquisition of a proportion of the startups’ shares thus making sure it has cash to operate and innovate. Another way is organizing start-up projects where new start-up ideas compete for the investment of the large company. The result of such cooperation if succeeded is often total acquisition by the larger company to get full access and control over the technology the startups have developed which can contribute to the competitive advantage of the larger one. An example of such larger transportation and logistics company investing in start-up projects is DHL. It has launched a “Startup Lab” with the purpose to bring entrepreneurs together to shape the logistics industry. The company is especially interested in topics which in their words is as follows “…containerization, future of work, last-mile delivery and digitalization of our operations using emerging technologies such as blockchain, IoT and robotics” (DHL, n.d.). Another one is Schenker cooperating with startups to challenge what the company already has and to develop new business models (DB Schenker, n.d.).

Just having a strategic alliance around specific interest areas with and/or without owning a proportion of the partners shares can often be not enough. There can be high transaction costs in terms of risking to lose strategic knowledge, difficulties in contracting all the terms and conditions so that the alliance will work properly or unequal commitment of parties. To overcome such transaction costs companies can decide to start a Joint Venture (JV) - a totally new company separate from both companies but contributing to both of sides. The purpose of Joint Ventures often is to have a stronger integration, contribution and risk sharing by two or more cooperating parties in case they find other types of cooperation such as simple contracting relationship or total integration via acquisition as risky or not having enough value. Joint venture is a stronger way of cooperation than contracting. In that form of cooperation companies usually contribute with distinct resources which are problematic to contract over. All parties contribute with their resources, human capital and technologies to form a new joint company that will serve both parties interests such as acting as a supplier of products or services, getting market access, or acting as a learning platform where both sides contribute with complementary technologies and develop a new product which if acting separately couldn't have been possible to do. JV: s also makes it possible to increase the scale of sells for both parties. Contributors usually have enough incentives to make sure the venture operates properly as they have much more to lose than if they had a simple cooperation contract between each other. So, the risk that one of the partners will act opportunistically if given the opportunity is much lower (Hennart,1991).

Another way of facing market challenges is the market expansion and/or diversification of the products and services which can be done by Mergers and Acquisitions (M&A). Collis (2014, p. 235-245) describes this method as one of market entry modes for companies that plan to go international. Expansion through M&A in new markets or product groups can however be done in a regional level also, including in the same country. These assumptions can be considered realistic and thus the description of this method by Collis (2014, pp. 235-245) is relevant for this thesis. It is further presented below.

To overcome risks and disadvantages of contractual relationships of alliances or Joint Ventures companies often use M&As. In that way a company gains full control of another company, the company’s resources, expertise and customer bank and do not bother itself
with the lack of full control, possible decreased interest of the partner to invest its resources into the joint business etc. M&As can lead to easier expansion, economies of scale and increase in productivity which often means competitive advantage. There are however some drawbacks connected to this method. Companies often have large differences in corporate culture, in the way they operate, the long-established power relationships etc., which oppose the integration process. That can lead to decreased efficiency and lost human capital which means financial loses and competitive disadvantage (Collis, 2014, p. 235-245). A well-known example of companies initiating a $35 billion merger and then disjointing after almost ten years without any noteworthy success was the merger of Daimler and Chrysler which actually was an acquisition of Chrysler by Daimler. The cultural differences lead to unsuccessful integration, trust problems and unrealized synergy gains (Watkins, 2007). This is among others a question of change management which is further discussed by Golpayegani (2017) in the corresponding chapter.

3.3.2 Outsourcing and other forms of cooperation
Collaboration in terms of outsourcing of some of operations is used to cut down the destructions and to focus more on the core business. Other forms of collaborations are leasing and outreach activities (Millar, 2018, pp. 11-12) further described under corresponding chapters below.

Supply chain management & Logistics:
The outsourced activities inside the haulage industry include logistics and supply chain management (Millar, 2018, p. 11). Supply chain management is defined by NC state university (n.d.) as “active management of supply chain activities to maximize customer value and achieve a sustainable competitive advantage”. According to the source, it consists of two parts, physical- and Information flows. Physical flows consist of movement of physical goods and material. Information flows are what make up the control mechanism of the supply chain and give it the ability to cooperate internally.

Haulage contractors rarely describe their own supply chain and instead treat as competitive factor in the market. An example of this is Schenker (n.d.) who use structure of supply chains to promote the superiority of their service and what their service can add to customers’ existing supply chains.

Logistics have changed over time and third-party companies have increasingly been given more responsibility for the task. This is motivated by greater flexibility and specialization level of such companies which generate greater efficiency for the outsourcer. (Hilletoft & Hilmola. 2010)

Maintenance:
Outsourcing maintenance can have several benefits for a firm as discussed by Judenberg (1994). The benefits might vary depending on the company in question. Some include lower costs of maintenance, the ability to more quickly adapt to changes in the environment as a result of a more fluent cost structure and improved morale for employees. As such they no longer need to deal with the less pleasant work associated with maintenance and as such can focus on more attractive tasks and allow management to focus on other aspects of the firm.

System maintenance is one of the types of maintenance. It includes activities such as fixing problems that make a system unable to properly operate or perform task incorrectly as well as “implementing changes and improvement to the system (Judenberg, 1994).
the case of trucking industry maintenance can besides maintenance of internal and external systems also mean maintenance of trucks and other physical assets.

**Leasing - Owning compared to leasing:**
In order to gain an understanding for how investment decisions are motivated by companies in the industry and the incentives other firms have to use their own fleet instead of a haulage contractor. It is of interest to outline possible incentives for making investments in a firm private fleet in the first place, compared to the alternative of leasing from external actors and firms. Farris & Pohlen (2008) outline advantages and disadvantages from maintaining and owning a private fleet compared to using a leased one and reasons behind these factors. Some of the advantages are not relevant for our subject while some provide insight in the actions of owners from a value-creating perspective. One such advantage is the that the owner maintains full control over vehicles and as such can customize it depending on current demands and financial situation, and lower general transportation costs. The disadvantage of owning their own fleet is greater overhead costs, a possible lack of experienced management, risk for less efficient usage of vehicles, full liability and initial capital requirements. One decisive factor when a company decides on a fleet is if it will create economy of scale.

According to Millar (2018, p. 12) benefits of leasing are the relatively lower costs of capital and fewer issues connected to the fleet maintenance. Other important benefits are the decrease in human resource issues, the access to modern fleet and technologies as well as possibility to get expertise in procurement activities and improved management in terms of among others record keeping and compliance.

**Outreach activities - Increased intra- and inter-industry cooperation for future gains:**
Outreach activities are about increased collaboration between different actors in the value chain of the industry despite their positions in it. For example, suppliers can actively communicate and work with intermediate or end-customers, with providers of technology etc. The purpose of outreach can in other words be defined as forging closer connections with those who have similar needs and interests in order to have increased productivity gains (Millar, 2018, p. 12). In other words, it is more a relationship for future gains and does not necessarily bring direct and immediate gains to the company practicing outreach.

Outreach or closer communication with suppliers can be understood both from the perspective of communicating to improve the processes or conditions of supply of services and products from third parties but also from the perspective of supply of labour, education for labour etc. Millar (2018). Outreach activities for such purposes are discussed by Babloyan (2018, p. 98-100) based on a survey presenting the labour market conditions in different industries. Parallels can be drawn with the transportation industry. Transport companies can for example communicate and build strategic relationships with schools educating logistics or drivers etc. or they can reach out to different training or practice programs, career centers and employment agencies to make it easier for them to get access to new workforce through such connections, when needed.

There can be different reasons that companies will not be willing to integrate such activities in their squadron of tools for solving their problems. One such reason can be communication costs with above mentioned organizations or projects. Such costs are difficulties to communicate, the lack of willingness from one of the parts to communicate or to do it effectively, the mismatch between the values or approaches to education that the parties share or the unprofessional and diffuse way of cooperation of one party leading the other to refuse to cooperate at a high level. These factors can lead to overspent time
and energy on ineffective actions. To solve the problem of communication costs with such organizations, companies may only use for ex less time consuming and straightforward methods such as simple advertisements in the news, webpages, social media, or gathering employee data via other organizations, friends and colleagues. However, they are often open and willing to receive help from such organizations, specifically career and alumni centers if that is organized in a proactive way and does not require from the employer additional energy and resources (Babloyan, 2018, p. 98-100).

**Advocacy and Lobbying:**
Other forms of outreach are advocacy and lobbying as they aim to create relations with and educate and by that also influence legislative bodies and other stakeholders in their decision making in favor of an individual's or group's interests (Ground Solutions Network, n.d.; Encyclopedia Britannica, n.d.). Possible advocacy and lobbying activities by companies and trade unions in the haulage industry and in the related industries theoretically should/could be related mostly to environmental policies or education of legislators or other interest groups around the needs and challenges of the industry, in order to find solutions for those. Logically the industry should try to defend itself from sudden disruptions caused by legislations by trying to stop environmental initiatives or at least trying to slow down rapid changes to gain as much time for adaptation as possible which is also shown by Gabbatiss (2018) but in more general terms. The article describes namely the lobbying spending of large polluters who spend 10 times more on lobbying than environmentally friendly groups thus showing the difference of influencing power of different stakeholder groups. Haulage industry is one of the main pollutants of the environment as it is the case with Sweden (Karlsson, 2019) thus that is normal to see them, and other transportation industries counteract environmentally friendly initiatives by legislatures that create challenges for them. This is the case for example in US (Gabbatiss, 2018). However, at the regional level, especially in the European Union the lobbying activities does not seem to benefit the car producer and transportation industries as the environmental policies become more and more ambitious. For example, on 27 Mars, 2019 the EU parliament voted for 31% decrease of emissions from vans in year 2030 in comparison to the 2021 years level of emissions (Dagens Industri, 2019). However, the lobbying pressure on the legislative bodies from the industry representative groups have according to Dagens Industri (2019) been significant.

### 3.4 Change Management - A catalyst for implementation of solutions

Golpayegani (2017) states that despite the changing environment people often refuse to go through a changing process and prefer the status quo where they feel themselves comfortable and do not see it as necessary. They are often afraid of possible failures, uncertainties that the change can bring, the disruption of their comfort-zone and their inability to face the change from the psychological perspective. Change however is a necessity when people or companies set goals. And sometimes we just have to change even if we do not have any specific goals as the environment requires that. In the business context companies need to adapt to both the internal and external environmental changes in all levels of the company. New trends in the industries usually force companies to change their strategy accordingly. That results in changes in the organizational structure which itself affects and disrupts processes/operations and personnel. The personnel feel their comfort-zone be under risk thus pushing them to resist the changes. There are different types of resistance; active, passive, compliance and enthusiastically supportive. The participants are active in their resistance when they show it emotionally by becoming less enthusiastic in their job tasks thus becoming less productive. The passive form of resistance happens when employees do not show it to the management but instead quietly
look up other jobs. The compliance is the form of resistance which means that employees do not resist but rather need help in the change process because of difficulties it brings. The last form is about people who actively take part in the change process by contributing to it. Management teams responsible for changes need such people as they are those who help to overcome the resistance that other employees show.

Robbins & Judge (2017, pp. 645-646) presents similar views related to resistance to change by summarizing findings from several scholars. Based on the findings the study divides the sources of resistance into two categories - individual and organizational sources. From the individual perspective, Audia & Brion (2007, 255-269) show that employees egos are an important resisting factor for change. Namely change is something that threatens the human ego and people usually try to find counterarguments for change even if they are shown data that supports their need for change. There are habits that employees have established over time and they have difficulties to cope with changing them. Resistance to change is also expressed in form of increased absenteeism and sick time or even quitting the job. The source to that is the negative attitude towards change and the desire to run/hide from it by staying at home because they do not feel themselves secure in a changing environment. Such actions mean the company loses forces for its operations and for driving the change (Fugate et al., 2008, pp. 1-36).

Change resistance can also come from management in the company in case the change initiatives are proposed by lower level employees. That in case the management is focused on immediate productivity and overall company performance and is not open for new, creative ideas suggested by the employees. They can further feel their salary threatened when it is directly based on the company performance. Change also can generate fear over the unmown in general. Employees and managers can show resistance to change also by choosing to which information to here or to react to in order to safeguard the perceptions they have created around themselves from being challenged (Sijbom et al., 2015, 279-296).

From the organizational perspective the sources of change resistance are among others from the mechanisms that have been implemented in the company and in working groups during their lifetimes. That's about the rules of the game, factors such as organizational culture, written and unwritten rules and group norms that the members of the organization follow. When something challenges that order those factors start slowing down the process of change by inertia even if the individual employees have no problem with change. An organization is usually a system composed of various interdependent subsystems and when changes are being focused on just some organizational subsystems and not all of them those few changes have almost no effect under the pressure of the larger system and this is the other resistance factor described by Robbins & Judge (2017, p. 646). Additional changes related to how things should be done can be a threat to groups specialized in specific areas in the organization thus creating resistance to change. Also, changes in the authority of decision-making in an organization can harm the relationships of employees from the perspective of power.

Resistance however is not always bad as mentioned earlier in the literature review. According to Golpayegani (2017) resistance is needed for the company to improve as there cannot be a successful change process and implementation without resistance. Even if it means a nonverbal communication it still can give the management a valuable insight into how intense the change is, how fast it happens and how they should implement that.
An example of resistance to change is connected to keyboards we type on, which is called QWERTY (Golpayegani, 2017). When an alternative keyboard was developed by August Dvorak potentially increasing the typing speed twice it didn't get popular as people such as typists and others working with the keyboard showed their resistance because they had become skilled in QWERTY and didn't want to lose that competitive advantage. They further didn't need to type faster as they wanted to avoid typing mistakes thus the slower alternative was better for them and a change wasn't necessary from their perspective. Another resistance was from the side of the manufacturers who find it costly to make the change in production, also considering the time needed for people learning to use the new keyboard which would mean low initial sells.

Skills of change management are necessary to overcome resistance. For a successful change to happen it is according to Golpayegani (2017) necessary to listen to your employees, in the first place those who show resistance. That will allow the management to see things from the perspective of the employees and lower level managers and understand how to adjust and better implement the change. That will make the implementation of change more successful in the long run. When it comes to speed of the implementation of change or in other words new ways of how things are done it should be done gradually without any sudden and quick actions as that can lead to failed implementation and problems. The most vital components of change are active communication with and inclusion of the employees to the change process thus making them a part of the solution instead of giving them the solution. The change that is guided from the top and backed from below is a successful change. The sense of greater participation in the change process can lead to backing up the change instead of opposing it. Another important factor for a manager to make people to believe in his plans and promise of change is the image he has in the organization. You need to be trusted to be able to lead a change. Trust can be gained by a historic record of keeping your promises. You also need to prepare for arguing for the technical aspects when opening a discussion for change. When you are facing resistance it's important to understand why that happens, which are the main driving factors behind that. Having an open mind in such cases is critical. And last but not least it's crucial to show the plan under a positive light. Important aspects to consider are communication and inclusion. They are further interconnected in the change process. In case of failing in timely communication with the employees about change plans management can lose their reputation and trust in the eyes of the employees. That for example when employees learn about the plans for change from the outside of the company before the management would have time to discuss that with them by including them in the planning process. That further will result in more damaged relationships inside the company. Employees, especially those directly affected should be informed about large-scale changes early in the development process of the plan. That will make it possible to reflect on the critic and adjust the plan synchronously (Golpayegani, 2017).

Resistance is also a positive phenomenon in case it becomes a reason for constructive debates in the company thus showing that the employees are not ignorant to and are actually engaged in the change process making it possible for the managers driving the change to describe it. They also get chance to understand the concerns with it and make some modifications to make it more acceptable for employees (Ford et al., 2008, 362-372).

Robbins and Judge (2017) on the other side warns that change isn't necessarily a positive thing. In case the change is too intensive, especially implemented in a short period of time that can manifest in terms of vague and bed decisions as well as in miscalculations of the effects and costs of the changes. Bad decisions and miscalculations of the effects can lead
to pressure on personnel with resulting negative consequences such as absenteeism and quitting the job as mentioned earlier thus making the company vulnerable during the process of changes.

To summary Change management can be considered as a catalyst for implementation of solutions or in other words a necessary factor that will increase the success of implementation of changes in companies. The lack of it or failed change management can lead to new challenges that the failed implementation of new phenomena will bring to the company. That for example in terms of worsened atmosphere in the company and lost capital because of unproductivity of the workforce caused by difficulties created by for example new unwanted systems. This means that change management itself is not really a source of challenges because it can either be used or not when implementing something. It is rather as already mention a catalyst which if used properly can generate better results but the non-implementation of it will not generate bad results because those bad results will be generated by the new things implemented. To make it clear, an example follows. Consider implementation of a new IT system. It can be implemented with or without a planned change management. If done without change management, it can either be accepted well or not. If it is not accepted well than it may create challenges as described above. If a well-planned change management is conducted parallelly to the implementation of the system, it will increase the possibility of having a successful implementation of the system and as already mentioned none-implementation of change management will not directly cause a problem itself.

Additional perspectives on Change management in model form:
There exist a number of change management models, none of them apply universally. As such, a few of those models will be presented with the full knowledge that there might be other models that provide different result.

One such model is Kotter's eight step model as presented in Peterson et al (2014, p. 57-59). This model presents how the management in an organization should act in order to ensure a smooth transition during a period of change. Example of the steps are, among others: management must create a realistic vision, identify agents that can enact this change and make sure that the organization can handle continuous momentum in change.

A second model used to explain change in organizations is quite similar but clearer in exactly what steps are included. This is presented by Gazley & Kissman (2015, p. 77) This model is divided into four steps: management identifies a problem, goals and plans to reach these goals are developed. The impact of change will need to be evaluated and finally a clear strategy must be stated and followed through.

3.5 The thesis model based on literature review
The purpose of the study is to find out challenges in the Swedish haulage industry and what is done to meet these challenges, by using theories presented in the literature review. Based on the literature review, Figure 3 have been constructed. The model presents the current challenges identified in the haulage industry and possible actions taken by the industry actors to adapt themselves to the situation. It consists of two main components, industry challenges and solutions to them.

The challenges are divided after the relation of the challenges to the different levels of company environment, for example the “Ownership structure and company size” is on the organizational level. The structure following that logic also means the structure
corresponds to the level of control or influence companies have on those challenges. The specific positions of the challenges in the model, including those repeated in categories micro and macro environments, are discussed in the chapter “3.1.7 Model summarizing the Industry challenges”. In general terms some of the challenges can take forms that fit more than one level and thus the control or influence level of companies on the same category of challenge can be both high and low depending on how to interpret that category of challenge.

The solutions are divided into two main categories, internal developments, and external developments and collaboration. The components are further divided into subcategories which are covered in the model. Those can be implemented parallelly or separately and in different levels depending on how effective the measure can influence the challenge. It is logical that it is not practical to show the relations between specific challenges and solutions in the model. They are described under the corresponding chapters related to solutions in the literature review.

There have further been identified a factor that influences the components of the model. That is the change management. It namely determines how successful the implementation of a new solution to problems will be and failing in change management can result in even more difficulties. For example, if implementation of a new system makes some employers unwilling to accept that change can start creating negative atmosphere in the workplace which is problematic for the company in many ways. Thus, change management is a necessary component that acts as a catalyst and implementation of solutions should in other words go through it to be successful.

The model acts as a framework and guideline for the rest of the study. The questionnaire, the analysis and discussion will for the most part be structured according to the model.

The study aims to find challenges and solutions currently relevant to the haulage industry. It is important to accentuate that given the current rapidly changing environment there is a risk that the research haven't had time to capture many vital factors. The purpose with the current study is therefore to give a picture that covers at least the most relevant factors in the current situation of the industry. That means the study will need to have an explorative approach to make it possible to find unexpected factors. The study will therefore be attentive about most of the factors identified during the study process even if some of them may not have a coverage in the current research.
Figure 3: Initial model based on the Literature review.
4 Practical Methodology

This chapter will present methods used for examining and gathering the data from a practical view.

4.1 Choice of respondents in industry

In order to get deeper insight into the industry and greater amount of variation and different perspectives, it have been decided to include respondents that are active in firms and organizations that are active outside of the strict limitation of haulage contractors. This include groups that might offer additional levels of insight such as industry organizations and respondents with more technical skills. This is based on several reasons that was discovered when investigating the theoretical background. One reasons is that the industry is one that requires limited education and theoretical background and as such might not fully comprehend the questions that are asked to them as those questions will be formulated by individuals that have more of a theoretical background and as a result there exist a gap in knowledge between the interviewer and the Respondent.

4.2 Sample characteristics

The sample have a few characteristics that are important to mention about the nature of the sample.

The respondents and data in the study is based on targeted respondents. The Respondent have been consciously contacted based on the perceived traits of them and what they can contribute to the field of research and the study. No act of randomization has been attempted that would lead to a more general answer.

The reasons for this are access to respondents, as it was decided to use a variation of sources from different backgrounds in order to get a broader understanding and fundamental sample for the study.

The interviews and Respondent come from various places in Sweden but are focused on the area of Umeå, Trelleborg, Tomelilla and Stockholm. The larger organizations that represent the industry are situated in the city of Stockholm but since they are organizations that represent companies on a national level, Stockholm as an area is not considered to be a part of the population of this study.

The respondents in Trelleborg and Tomelilla are all active in the haulage contractor industry as owners of vehicle operating firms in an area that have closer ties to surrounding nations as a result of being the southern port of Sweden with proximity to several large trading partners such as Denmark and Germany. The respondents in Umeå are more diverse and include respondents with tasks different from regular haulage contractors, such as being involved with more technical aspects. These different backgrounds provide a greater variation of opinions than would otherwise be assumed. This also mean that due to the small sample population, this study only applies to the area of Umeå, Trelleborg, Tomelilla and Stockholm.

Data related to respondents’ identity considering also their anonymity is given below:
Table 1

4.2.1 General information about the respondents
The pool of respondents consists of both companies and industry organizations. The pool of companies is represented by one large (>50 employees) and three smaller (<50) companies. All companies are limited corporations, three of them owned by families. The pool of organizations consists of two large (>100) trade unions.

Respondent 1: CEO/Owner
Respondent 1 is the owner and CEO of a haulage contractor firm located in the south parts of Skåne that have been active for more than 80 years. The company consists of 26 employees (2017) and acts as a subcontractor to Schenker DB. The firm is active in local circuit distribution with occasional longer deliveries. A majority of the vehicle fleet consists of trucks with a few vans used for parcel delivery.

He has long experience from the transport sector and have been in his current company for more than 25 years. His role in the company is varied but generally consist of most of that the firm is active in. This include investments made in the firm, contracting and negotiating with customers as well as everything vital for the firm.

The company was founded in early 1900s and have since its founding been owned and operated by the same family. The firm had between 20-50 employees.

Respondent 2: Chief distribution area (distributionsområdeschef)
Respondent 2 is the top manager of a distribution area in one of larger (>100) postal delivery firms in Sweden that have been active for more than 100 years. The company within its transportation branch operates within both close area and long area distribution. The company's fleet consists mostly of larger trucks and parcel vans. Respondent 2 has worked in the company in more than 25 years and is well informed about the situation both in the environment around the company and the atmosphere inside it.

Respondent 3: CEO/Owner
Respondent 3 is single owner and CEO of a Stockholm based small haulage contractor that have been active for less than 5 years. The company is a subcontractor to a larger company and the main service is transportation of construction waste in local close area distribution. He is responsible for all activities and decisions in the company, including

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Role</th>
<th>Company age (year)</th>
<th>Time (minutes)</th>
<th>Location of firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent 1</td>
<td>Owner/CEO</td>
<td>&lt;100</td>
<td>24</td>
<td>Trelleborg</td>
</tr>
<tr>
<td>Respondent 2</td>
<td>Chief distribution area chief</td>
<td>&gt;100</td>
<td>57</td>
<td>Sverige</td>
</tr>
<tr>
<td>Respondent 3</td>
<td>Owner/CEO</td>
<td>&lt;5</td>
<td>47</td>
<td>Stockholm</td>
</tr>
<tr>
<td>Respondent 4</td>
<td>Representative</td>
<td></td>
<td>110</td>
<td>Umeå</td>
</tr>
<tr>
<td>Respondent 5</td>
<td>Personnel</td>
<td>&lt;70</td>
<td>15</td>
<td>Trelleborg</td>
</tr>
<tr>
<td>Respondent 6</td>
<td>Owner/representative</td>
<td></td>
<td>30</td>
<td>Stockholm</td>
</tr>
<tr>
<td>Respondent 7</td>
<td>Owner</td>
<td>&lt;5</td>
<td>20</td>
<td>Tomelilla</td>
</tr>
</tbody>
</table>
strategic decisions related to new investments. He has been in the industry just for a few years.

**Respondent 4: Trade union representative**
Respondent 4 is a large (>100) trade association that represent the interest of haulage contractor firms in Sweden. This Respondent represent a northern branch of the association and is responsible for providing information and support to firms in northern Sweden. The individual that was interviewed have experience from the industry and have been active in both forestry transport as well as local distribution. The Respondent was perceived to be knowledgeable in his field of expertise

**Respondent 5: CEO**
Respondent 5 represent a firm that is situated in Trelleborg and is an independent haulage contractor with a service record of almost 70 years, and act separately from other firms in the industry. The firm is active on the international market and are active in Sweden, Germany and the Netherlands, among others. The service the firm offer and the goods it transports are varied but the more prevalent customers are active in bulk and raw material goods, with customers in the recycling industry to the food industry. The firm have in addition specialized itself towards goods related to environmental transports, for example scrap.

The company was founded more than 60 years ago and have since then been owned and operated by its founding family and currently employs between 20-50 employees.

**Respondent 6: Trade union representative**
Respondent 6 is an owner of a haulage contractor company in the central region of Sweden. The company acts further as local representative for companies in a trade union. The union members operate below a larger transport firm in Sweden. The company that the respondent represents is during other circumstances a family owned company that in addition to delivery and transport, offer education to get certificates such as YKB as well as helps other businessman in the field with personal development. The organization is cooperation body used by all firms active in domestic transport in Sweden that are bonded to another, larger firm. The goal of the organization is to represent its members when doing business with the larger company. It has between 100-200 members spread across Sweden. The individual who was interviewed for this study is the CEO of a haulage at the same time as they are a respondent for the trade union

**Respondent 7: Owner**
Respondent 7 is the owner of young one-man firm (less than 5 years old) in the area of Tomelilla. The company act as a subcontractor to a larger firm that operates trucks with varying destination. The firm is specialized in full transport between larger customers. The owner is responsible for all operating activities of the firm and use family for administrative tasks.

### 4.3 Interview guide
The interview guide has been structured based on the subjects brought up in the theoretical framework and is based on how the questions and possible answers will contribute to the study. As the questions can be interpreted as quite broad in scope, they do not refer to any specific part of the framework or a specific theory. The interview is instead structured as to provide a stable flow of information and to allow the Respondent to respond based on their knowledge in the specific fields. It is further important to note that the guides
intention is to be used as a guide, should the Respondent not be willing or able to respond to some questions, these will be passed over.

The initial questions regarding background aim to allow for the Respondent to reflect on their general thoughts on the subject and for the interviewers to gain some understanding of the respondents in order to make room for further subjects and structure of the general discussion.

What follows are questions regarding technology, both in specific terms and in more general, that then proceed to discuss investment decisions of the Respondent. The goal of this is to gain insight in how the Respondent view and according to changes to technology in the industry and how they adapt their behaviour as well how see how technology impacts investment decisions.

After technology, the questions shift to ownership structure and cooperation. This questions how the Respondent view cooperation with other firms in the industry and if this impact their choices. It also aims to answer the question whether they see ownership-structure as having an impact on the actions of a firm engage with transport.

Finally, the interview cover outreach and how the firm reach out to customers. It is important to note that the respondents might not understand certain words or concepts due to their background. Therefore, terms and questions are rephrased should it be required to reach mutual understanding.

The questions presented in the interview guide is posed with the intent of being used in the context of a semi-structured interview. While quite specific, the guide still leaves room for interpretation for respondents to provide responses outside the specific scope of a posed question.

4.4 Treatment of gathered data

The data that is gathered need to be treated properly in order to avoid wrongful interpretations and to allow for clear reasoning when dealing with the gathered data. The study takes a interpretivist approach and as a result use many methods related to a this approach. This includes assuming a subjective stance from the researcher, a qualitative study and other similar characteristics that is associated with interpretivism. Collis & Hussey (2014, p. 59-72).

The interviews were done through two methods, face-to-face and over phone. Some was not recorded fully and as a result some of the interviews rely on the direct memories of the research, which create a risk for faulty data. This have not been seen as harmful enough to impact the value of the data received from the respondents. After the interviews the information was written down and transcribed into empirical data used for analysis. As an additional security the respondent are reported anonymously, and actions have been taken to limit exposure of the respondents. This can make following up on the study more difficult but is considered to be worth it in this study.

4.5 Analytical method

This study analyses empirical data by using grounded theory and thematic analysis methodology as described Bryman & Bell (2017, p. 542-559). Grounded theory is theory that is derived from gathered and is focused on developing a theory. Thematic analysis converts derived data into themes that serve to structure and provide a foundation for
analysis. What this mean in practice is answers provided when gathering data is analyzed with the following method: answers provided by respondent are simplified into data that are simpler to understand and measure, such as positive/negative opinions. Afterwards this simplified data is divided into its general themes and how it relates to the model of the study. Once this have been done the data will be compared to each other and existing theories in order to gain understanding of possible differences and similarities. This are then discussed in this context before everything reach a conclusion.

4.6 Ethical considerations

Diener and Crandall (1978, cited by Bryman et al, 2011, p. 156) present an oversight over the different ethical considerations that a researcher has to take into consideration when conducting a study. Not all are relevant for this study therefore those of greater importance will be provided greater attention. These include Informed consent, Anonymity, Privacy, Confidentiality, Deception-Honesty and Transparency and finally Misrepresentation. (Collis & Hussey 2014, p. 31-32).

Informed consent means the researcher is responsible for that the participant is fully aware of the research and what obligations participating in the study will include. The researcher is further required to mediate the perceived cost and benefits and to ensure a mutually beneficial exchange. Anonymity is defined as “the protection of anonymity of individuals or organizations”. As such the researchers is responsible for ensuring that participants can remain anonymous when participating. Confidentiality is the obligation that some information is not allowed to be spread or shared with other sources. Honesty and transparency are in many ways related to the other ethical dilemmas as it concerns actions that might be interpreted as an attempt of deception. Deception in this situation is actions such as lying to the Respondent or perform actions that are meant to mislead to Respondent.

Misrepresentation is a problem that exist when the research findings is used to misleading results that do not represent the study. This occur through several means. For example, the finding of the research can be interpreted by the researcher so that the findings do not reflect the true reality the participants perceive. It is also when a researcher purposely reports the research findings falsely (Collis & Hussey 2014, p. 31-32).

Another possible risk is that of misrepresentation.

In order to clarify that ethical consideration have been made, these are some examples: Participation is voluntary and neither respondents nor interviewers receive any kind of compensation. Participants are guaranteed anonymity, but their answers become public information as a result of from Umeå university. Percussions have taken to properly refer to original authors to previous research mentioned in this thesis and avoid derogatory or harmful words.

By following these examples, the study aims to provide security in its ethical value.
5 Empirical data - Answers from respondents

This chapter will be structured similarly to the interview guide. It will start by presenting the Respondent and will proceed to discuss the answers of the respondents together with the related subject.

The interviews provided large variations in opinions between the different respondents and allow for a wide spectrum of experiences to be presented in the material. The data is not clearly divided according to the two major areas of the questionnaire - the challenges and solutions, but rather they are presented together in order to complement each other.

5.1 Industry challenges

5.1.1 Industry structure - Competition, resources and their prices

On the state of competition in the haulage contractor industry, the response is universal among the respondents in that competition is fierce to the point where it greatly impacts firms, and that this is reflecting on all levels of activity. The respondents share opinions on how the intensive competition serves to minimize margins to the point where even relatively small changes in price and volume is the difference between loss and profit. Respondent 6 considers this as their single largest problem for firms to contend with and provide practical examples of this, which make it easier to understand. The two examples provided are as follows. According to Respondent 6, for a vehicle with 50 pallets (1 pallet = 0.4 loading meters) if 2-3 of these are not filled, the vehicles is unprofitable, so all pallets need to be fully loaded. The second example from the same respondent is, if a vehicle drives between two cities a single trip with an empty cargo would mean the truck needs to work a full month afterwards with back and forth deliveries with full cargo to cover the losses. Respondents 3 and 7 add however that even if you have a small company you can still have good profit and growth possibilities if you are good at doing business. They meant that it largely depends on you as a person and as a businessman and not only the industry. Respondent 3 adds further that some segments of the industry are more profitable than others.

On the question on how growth of larger international competitors such as Amazon would affect the competition in the Swedish market, Respondent 4 admits that local companies in Sweden will have substantial difficulties in competing with such firms and that firms will have to adapt to these companies by cooperating with them and simply hoping that they are not interested in less populated and more rural parts of Sweden which the Swedish
companies could serve in cooperation with such large companies. According to the respondent companies like Amazon are currently more interested in larger, more important markets, such as Asia.

A point of contention that is brought up is that customers focus to minimize prices and at the same time they lack understanding of the industry, which according to respondent 6 make it difficult to negotiate prices since many customers do not understand what they are negotiating around. Additional perspective to this is shown by respondent 2 & 4 who put this in the context of an industry that have undergone high growth corresponding with a lack of capacity and labour, and despite these continues to have lower prices and small margins. Respondent 4 considering this question describes the haulage contractor industry as “an industry that breaks the laws of economy”. In addition to this, respondents often stressed that they as a result of these factors often have difficulty to perform large-scale changes as low prices and margins creates lack of resources which hinders them to think or plan in a long-term perspective.

Except for Respondent 5 & 7, the remaining respondents have observed a lack of labour and have difficulties in finding qualified workers and predict that this will continue for the foreseeable future. Respondents 1 & 6 speculate on the various possible reasons behind this and their opinion align on a few points. Respondent 1 speculates that the problem is multifaceted and depends on many factors that are hard to measure. One of those is the general discussion, that they mean tend to paint the industry as one without a future for young people and not worth getting the education for. Another is the cost of getting the required certificates, which respondent 7 considers to be quite large for young people who do not get it through their education in high school where it is paid by the state. Respondent 1 further discusses that politicians have not made the decisions needed to help the situation and instead serve to make it worse though the current discussion about climate. Respondent 1 also criticizes how technological development is presented as something that will soon take over the whole haulage contractor industry, while in reality it will take longer time and will have a more limited impact on certain parts of the industry, such as private delivery, which is not communicated clearly. As a result, that makes it even more difficult to entice people to work in the industry as they can think there is not going to be a job market for them after 5-10 years which further can intensify the lack of labour.

Respondent 6 provides additional insight and mention that the lack of chauffeurs is rampant across Europe, to the point that illegal activities that according to the respondent was previously widespread have diminished due to this lack of workers. The respondent argues that the simplest method to increase the number of drivers is by investing in vocational education and other activities to make students interested.

Another interesting point of information is one presented by Respondent 1 related to information on new entrants into the industry. The observation pertain to the importance of experience when entering the industry, as they observed that historically, new entrants have typically been individuals with previous experience in the industry and have used that to navigate their actions in the beginning as they tried to find a sustainable business model. Example of this is specifics regarding to vehicles, according to taste, meaning the experienced entrants know what they want and what is needed to operate efficiently. The respondent observes that this have been slowly shifting over the years with increasing number of “bureaucrats” entering without previous experience and knowledge about the general culture and norms of the industry, although the respondent does not speculate why this happens.
5.1.2 Ownership structure, company size and age

The opinions on the general ownership structure of firms in the haulage contractor industry contain variation but can be considered relatively universal. In terms of types of ownership, the industry is dominated by small family firms and several larger players with one of them being the state owned PostNord. All respondents agree that the relatively small size of firms do have an impact on the ability of firms to perform certain actions and how they view the future and future actions. Both Respondent 1 and 4 see an ongoing consolidation of firms, both in terms of building networks but also in terms of mergers and acquisitions. M&A lead to fewer but larger firms than previously. The respondents see this as an ongoing process similar to what takes place in other industries. Respondent 3 & 6 agree that the small size of firms limit the resources they have available and possibility to access to.

Another point that is brought up by respondent 4 is that it currently does not exist any large companies that can be considered pure haulage contractors, since when firms grow, they seek to diversify and transition from being a haulage contractor into a forwarding agent.

Respondent 1, 5 and 6 have negative opinions on the presence of state-owned firms, such as Postnord, with the exception of respondents 2, 3 and 4 who have not noticed a difference. A theme in the criticism is the idea that state-owned firms do not operate on equal grounds as other companies and receive unfair support which creates unfair competition that private firms cannot compete with, and that state-owned firms are allowed to behave in such a way that would be considered unacceptable for other companies. Respondent 6 states that they do not have any problems with state-owned firms that are active in industries that are of great benefit of many parties such as when it is used to apply pressure on dominant companies that could otherwise harm the society at large. But in the current state of the transport industry, the presence of a large state-owned company will only serve to exacerbate existing problems and make the situation worse for every actor involved in the industry. Respondent 2 and 3 did not see a noteworthy impact. One major difference between state-owned and private firms is predictable uncertainty (due to elections), how it has additional tasks in the form of social mandates, and how state-ownership make the company undergo considerable scrutiny and face harsher criticism in media because of higher expectations from the society.

5.1.3 Customer behaviour

The respondents have different opinions on what challenges the industry faces depending what aspect of the industry is discussed. When it comes to changing behaviour and demands from customers, it's important to define the customer first as there are differences between private and corporate customers. In the case of Respondent 3 and 4, they provide insight in changes from the side of both private individuals and corporations as customers while respondents 2 and 5 has just corporate customers.

According to the respondents their customers increasingly demand more individualized deliveries with shorter delivery time and closer to the individual, with fewer middlemen in between. When it comes to corporate customers, the demands are different. In contrast to individuals, firms have higher demands on components on the vehicles that are used and other components specific to the transport vehicle, as well as do pose demands for external technologies such as route planning and transport optimization as well as access to systems for tracking the deliveries etc. An example of this brought up by Respondent 1, 2 and 3 who specifically mentioned the differences between engines (Euro 3-6) as
substantial in terms of environmental impact and as such is required by clients. Respondent 2 states further that there is also increased demands on engines with specific types of fuel such as engines working with gas or electricity. Respondent 3 further mentions tires as an example of this, since not all tires are allowed in every environment and therefore must be adapted to the terrain the vehicle is used in. If the companies can satisfy these demands they are more competitive than their competitors and they get the orders as the Respondent 2 and 3 state.

Another noteworthy perspective states that corporate customers pressure them to get their products fast, at the lowest possible price and highest convenient way. What this means is that demands of individual customers are reflected in the demands of their corporate customers thus showing that individual customers are mostly the initial drivers of their challenges.

Respondent 6 further discusses that it’s not only about what we sell or the customer demand. An important factor on the demand side is the increasingly centralized and specialized procurement and purchasing departments that wasn’t there before which make the purchasing process more systematic. That according to the Respondent 6 means that you often negotiate with much larger customers than before which affects the way companies in the haulage industry do business.

5.1.4 Technological development and legislation
The respondents’ discussions on technological challenges their industry is facing are divided into long and short run as well as into large and small scale. Some of the respondents are focused in short run and small-scale challenges. Respondent 1 and 3 provide few answers that are mostly focused on what is required at this specific moment relating to factors of smaller scale with no additional information for future complications. Those are mostly related to daily operations and problems such as having the right vehicles to get more orders or maintenance of the trucks and their financing. However, Respondent 1 touches the topic of the fuel and fuel infrastructure with a few words. They namely comment about the discussions that diesel consumption is planned to be decreased and stress that politicians can’t just force that without providing right infrastructure and resources for that. Respondent 5 does not seem to be interested in the technological development in the field and state that the company just follows the requirements of the customers and legislation and not do more than that. That includes the use of tachographs obliged by legislation, the effects of which the respondent does not describe. He further adds that something they have noticed is that the drivers have got more convenience in their environment during the last years, including the environment inside the truck cabins. Respondent 1, however describes the effects of the tachograph on the industry by saying that it increases the control of the government and creates equal conditions for the competition as well as creates better working conditions for the employees which is good but it increases the need for additional drivers because a driver cannot drive longer than nine hours and longer tasks will require changes of the driver. That is problematic when there is a lack of labour in the market. The prices of your service also increase when you must have two or more extra driver changes which in the end is paid by the customer.

Further, respondents 2 and 4 discuss more strategically important, large scale and long-term changes occurring in the industry. Such are technological development in fuel consumption and fuel infrastructure as particularly critical. They point out the many facets of these developments, both in terms of legislation, infrastructure and competition. They discuss conflicts between technological development and the goals of politicians and how that puts pressure on technological development in the industry. Namely the political
goals create uncertainty around whether they are feasible and realistic and how firms in the industry will be able to adapt to the goals, considering the current state of the industry and the ability to invest in new technologies. Respondent 2 prefers however politicians to decide what will be the rules of the game so that there are at least some guidelines to follow even if they can be difficult to follow. That according to the respondent because it becomes more common that customers demand that the haulage companies use better fuel types in their cars. Customers increasingly require that you use biogas, hydrogen, electric power etc. However, there is a lack of infrastructure to meet those requirements. Customers can have many different requirements and that complicates the business for the haulage companies and the state should interfere and decide what we really want to accomplish when it comes to environmental goals, which fuel should we mostly invest in - whether the future is the electricity, gas or diesel or maybe we will start using more rail freight. What Respondent 2 means is that the haulage industry basically needs to have some guidelines to relate to because when you invest in a truck you expect that it will serve at least 6-10 years and that the divergence between the legislation and customer demands creates challenges for the haulage companies.

The pressure further intensifies by the speed of the development of technologies. According to Respondent 2 when investing in new technologies it's important to assess what is going to be required in the future so that a company in no way locks itself into a technology that is not scalable or developable. If a company sees a specific need it starts searching after tools and systems that will satisfy the need. Companies need to know which tools or systems they should choose or who should deliver those technologies in a situation when the technological development is exploding. It’s according to him a huge problem for large companies at the moment as technologies are constantly developing - currently at a very high speed. What is good today maybe isn't as good next year - so a question is than if it’s developable. In a such situation it's vital to find a right partner that you can feel secure with, which can develop your tools, a supplier that can help and support to go forward. There is however always a risk that you do not get anything out of such cooperation.

According to Respondent 2, the driving factor in implementing technologies is usually to get simplicity, a support to the employees in all situations. That will result in minimizing the costs connected to quality shortfalls and increase the company productivity. This causal relationship shows the importance of the choice of the technologies and their suppliers which under such uncertain situations is a challenge. The company of Respondent 2 tries to solve this challenge of uncertainty by investing in research teams that allow the company to systematically assess the changes, challenges and needs as well as suppliers of technologies and make research-based orders from them.

Another future challenge discussed by the respondents is the development of self-driving cars, IoT and AI systems. Here Respondent 2, 4 and 6 provide their knowledge and opinions on different aspects of automation in the industry and its impacts. Respondent 4 thinks that we can expect self-driving vehicles to be set into use within industries and closed systems, however broader implementation of totally automatized and self-driving vehicles will take a considerable long time because it still requires someone to be present and accept the delivery. Further, Respondent 4 stresses that the society itself needs to get used to the thought of existence of totally automated vehicles in the streets and overcome the mental barrier or skepticism towards such technologies. Respondent 6 in his turn thinks that the technologies and legislation in the industry is changing gradually and in small steps and there are no large changes. According to him the changes relate mostly to new and little bit better motors, some better computer systems on vehicles etc. imposed by
legislation. He points out that technology is something that everybody discusses but there are few who put them into use. Automatization and self-driving cars are hot topics in the haulage industry, but it will take some time until they are implemented. New technologies have however been implemented more in warehouse activities than inside the companies other operations such as transportation part. He further thinks that both legislation and technological changes can also often happen suddenly with a lack of long-term perspective thus making it difficult for larger companies to make future development plans.

When it comes to implementation of new technologies Respondent 2 considers the effect of the age of a company on the difficulty of implementation, in terms of costs and complexity, as significant. Younger companies do not have as much problems with adapting to changes and implementing new technologies and building IT platforms as the older companies do. The older ones often have old internal IT platforms with a lot of often unstructured data as well as with technologies which are much more difficult to develop, fresh up or replace, especially if companies are large the costs for change are than large too.

Both international companies operating in Sweden and local companies are according to Respondent 2 basically the same in their operations - they get orders, process the information available and make deliveries. International larger companies are, however, often technologically more advanced than the local ones when it comes to some details of the value chain. That can be the logistics, transportation, order processing and other kinds of information processing technologies etc. Some international companies or local startups maybe are not as large as for example the company of Respondent 2 but according to him those companies are more specialized in some segments. An example is the so called “Last mile delivery” segment where companies operating in the segment have technologies that are more advanced in terms of IT systems for sorting, analyzing and making use of data as well as have technologies that are adapted to the short-range fast deliveries inside metropolitan areas. Other systems can make prognoses of transportation routes and minimize the risks of taking problematic routes at problematic times etc. Those in the segment also provide more advanced services to their customers than the company of Respondent 2, according to him. Those are for example real time trucking of the transported goods or access to exact position of the truck etc. Respondent 2 states that their company works on both IoT and AI systems for getting similar capabilities but based on how your IT platform is built it takes different time periods to implement. Their company is namely large and have old systems and it’s very difficult and costly to implement those technologies in all branches. The logistics branch for example is highly technological with both IoT and AI systems being important parts of their warehouse management, but the transportation chain on the other side is not developed technologically to the same level. That for example when it comes to technologies that allow to sort and plan the orders and make it possible for an employee to look how the routes look in the next morning and plan whether they will need to remove some orders or have less or more personnel that day. According to the Respondent 2 their company is not a trendsetter in those fields as the international competitors or local specialized ones are, but they are moving in that direction.

5.1.5 Human capital and related challenges

Human capital is described by the respondents from the perspectives of initial investment, continuous investment and corporate culture. Respondent 1 & 4 believe that the industry will never require higher levels of competence, higher education and more theoretical knowledge when compared to other industries since the role of employees have been
relatively unchanged for a considerable time. What they value is fundamentals, basic knowledge and to fulfil specific demands such as YKB and ADR. In addition to this, respondent 4 predicts that drivers will require more technical knowledge and education and as result a change to the role that the worker must fulfil. He argues that compared to today, where education has a focus on mechanical skills that teaches students how to fiddle with engine, in the future engines will be complex to the point that these skills lack value. In a longer perspective the role is predicted to change to more of a technical operator that can use the software of the vehicle.

According to Respondent 2 when implementing new technologies and getting education for using them according to required changes, that creates some challenges. For example, some employees start protesting by not following the new guidelines. That can happen because they are not used to using those new technologies or do not want to lose their previous specialization. According to Respondent 2 if the management is unable to persuade the employee to participate in the new processes by using the new technology then they sometimes have to take that up with the employee in more strict way by giving him either a choice to stay and do as required or leave the company. Also as previously mentioned, Respondent 2 thinks the size of the company with its many employees is one of the main reasons why some changes are difficult to implement and such conflicts with employees can happen.

5.2 Internal developments to face industry challenges

5.2.1 Investments in technology

Respondents from small companies and organizations such a respondent 5, 6 and 7 stated that small companies in the industry base their investments mostly on customer demands and legislation. If customers demand certain tires or other vehicle characteristics than the haulage contractors tend to follow those requirements as the competition is fierce and they may lose customers otherwise. This picture of high bargaining power of customers was described among others by Respondent 3, showing how it defines what technologies the small companies should have. Small companies however are not interested in additional technology beyond what is required. By growing companies can start investing in for example administrative IT systems but not in more advanced ones.

The exception are according to Respondent 2 the small startups active in the “Last mile distribution” where they invest much in small electric transport vehicles, container technologies or warehouses systems specialized for small city warehouses, short distances and narrow city center streets in for example old streets in Gamla Stan in Stockholm. They further invest in technologies that allow their customers to truck their deliveries in real time and get additional information about them. Such startups have according to the Respondent 2 taken over their market share in central regions of the city.

Larger companies make investments both based on the above-mentioned requirements but also based on the future predictions of technological developments and vision related to the future of the industry or the company itself as well as based on the investments of
competitors. The company of Respondent 2 makes investments based on for example on which direction the technological development is moving so it does not invest in not scalable and developable technologies. The larger international competitors are often highly technologically developed. The company however does not invest in own platforms or departments for development of technologies as technologies are developing fast and that is better if specialists work with that outside of the company.

5.2.2 Employee development
All the respondents except Respondent 5 agree in the opinion that the haulage industry is experiencing a lack of skilled labour in the form chauffeurs, and it is a problem that have been persistent for a number of years. Continuous investments in employees are discussed by all respondent, for example respondent 5. According to respondent 5 are seen by some as an advantage when recruiting new employees something that have increased with increased competition for skilled employees. They further answer that continuous investments are worth it even if the worker does not stay, as it can be seen as another method to attract workers. The company of Respondent 2 as an example provides education for both management and regular personal when need arise and specific tasks require it. The other respondents provide similar, short answers on how they continuously invest in employees depending on current legal and customer requirements. When it comes to future investments in employees, Respondent 3 considers it to be worth to cover the employee education costs in case there are good opportunities for company expansion and there is lack of qualified employees.

According to Respondent 2 respondent leadership and corporate culture are important for human capital. He explains that close leadership in their company and an attractive corporate culture are important factors for the human capital of the company. These often compensate for relatively lower salaries that the company have in comparison to most of the competitors. The feeling of belonging with access to superiors and co-workers and clear expectations in the job tasks and length increase the number of loyal and even returning employees. Another point is that investments in technologies can also be considered as investments in employees as the motivation to implement for example internal IT systems or other technologies are often to simplify the job of the employees.

5.3 External development to deal with industry challenges

5.3.1 Investments in alliances and M&A
The respondents have touched the topic of external investments in for example partnerships or M&A only on the surface level without going into much detail. Respondent 1 and 4 see an increasing popularity of alliances and M&As in the Swedish haulage industry, resulting in creation of small company networks or larger companies which benefit related parties. Companies forming alliances or networks gain according to the respondents’ different benefits such as increased geographic reach and better services for their customers as well as economies of scale and scope. The respondents representing smaller companies such as 1 and 5 described further that they collaborate with larger companies. Respondent 2 added that larger companies often give their orders to smaller
ones in order to not spend time and resources on small scale activities. The larger companies are more focused on large orders and need help from the smaller contractors for deliveries in rural areas which gives flexibility to the larger companies. Several of the respondents further note that the haulage contractor industry is currently experiencing a period of substantial growth and increase in contracts but also say that this further worsen the lack of labour that inflict companies. That lead the larger companies to cooperate with the smaller ones.

As several of the respondents represent trade unions which work for cooperation in the industry, that alone supports the factor of cooperation as an important part of the industry through various means.

Some of the respondents either represent firms that are parts of an organization, or directly represent an organization that seek to facilitate cooperation. Respondent 4 notes that this development is relatively recent, that previously you were much more of lone wolf, in comparison today people tend to see each other as a combination of colleges and competition. This is done among others by selling services to each other. Examples of this is to rent out remaining space on vehicles to other firms. Existing firms have in addition to this been forced to engage in an unusual behaviour in order to be more efficient such as making use of pilotage which means a company’s loaded vehicle is taken over by another local company in the delivery destination. Firms have increased the use of third-party actors to take care of administration. According to the respondent it has further led to the formation of distribution centrals or networks where multiple haulage contractors cooperate.

5.3.2 Outsourcing & Outreach

Respondent 6 gives another point. According to him cooperation and outsourcing can be viewed from the perspective of the size of the firm, where larger firms tend to act more independently while smaller use cooperation to ensure that they can find work. The respondents have not discussed outsourcing in much detail except for Respondent 2. He mainly discusses the importance of finding a proper partner, a supplier of technologies in the current fast-changing environment. That means the company outsources technological development. According to Respondent 2 it's better to have specialized external companies to work on that field and other non-core activities and focus on the core business instead. However he emphasized that larger companies when outsourcing some important activities should have at least a specialized research team inside their companies that will professionally analyze the needs of the company and based on that will understand which suppliers it needs, where to find them and finally professionally define the tasks they will get. That will minimize potential risks connected to outsourcing. The respondents from smaller firms and haulage contractor such as Respondent 1 & 5 took an aggressive stance when this subject was brought up and when inquired further associated the term outsourcing with negative events such as loss of employment etc. Respondent 5 in particular brought up foreign workers outside of Swedish legislation as a particularly contentious point of subject and refused to outsource to any such companies.

When it comes to cooperation in terms of leasing, several respondents mentioned it to be prevalent in the industry, with several benefits of it. Respondent 2 and 3 puts the benefits in economic terms. They point out that when making the choice to purchase or to lease, the difference in total costs is of negligible value. However, according to them when purchasing for example a truck that affects the cash flow of the company and it often have to take a loan in order to finance the purchase. Leasing in contrast does not require initial capital, does not affect the cash flow except the monthly disbursements which are similar
to monthly payments of a loan for making the same purchase as well as allows for greater flexibility. As the short-term costs and cash disbursements are lower and the total cost are usually at the same level, leasing has often an advantage over purchasing. When it comes to flexibility companies are according to Respondent 4 more flexible in choosing between orders and are not dependent on the customer demand at the same level as when owning the trucks. Leasing is another mean for companies to obtain extra income from other firms by leasing their own vehicles and cargo space to them, depending on the current situation.

Actions used for outreach are few and only a few of the respondents have provided examples of that. It has mostly been about reaching out to new customers and building relations with them. In the case of Respondent 1, they use several methods. The first is through connections and orders from their partner company to gain new customers. The second is to use its status as an old and well-known company in the local area to its advantage when reaching out to potential customers. According to the respondent this have also led to customers reaching out to the firms. This can be contrasted by the company of Respondent 2 that despite its prevalent presence across Sweden shows weak performance when networking with for example local competitors and trying to build relationships. However, Respondent 2 tries to create and maintain relationships with other local companies on behalf of the company in his region of responsibility and tries to persuade them to create business projects together with the purpose to create gains for all parties.

Outreach in terms of lobbying is practiced partly by the trade unions present in the respondent sample. They however prefer lobbying not directly to politicians but rather direct their actions towards the corporations and direct or indirect individual customers who benefit from the services of haulage industry. The purpose is to teach those groups about the importance of haulage industry for the whole economy and through that increase the negotiation power of their members when negotiating around prices of their orders for example. According to Respondent 4 they have conducted tests with actors from different industries by speculating around the question how long they will survive in case the haulage industry kissed its operations. The average number of days were seven days and their operations would be almost totally disrupted. This finding is used to show both politicians and the above-mentioned actors the importance of haulage industry and make them understand that the traditional view of transport industry as a buffer zone where everything must be cheap should be changed. The customers require cheap, on-time and fast deliveries so they themselves will be able to have larger margins and shorter lead-times in their operations (as their customers also require fast deliveries or accessibility of products and services). Relatively higher prices than today would however mean to have a healthy transport industry and not to put such an important industry under a constant pressure and risks, thus guaranteeing the own survival of both corporations and the economy from that perspective. One other purpose of such actions is to make politicians support the industry in various ways such as subsidizing more costs for educating drivers than the state currently does.
5.4 Summary of empirical data

<table>
<thead>
<tr>
<th>Topic</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer behaviour</td>
<td>More individualized, distinction between private and corporate customer demand. More centralised ordering.</td>
</tr>
<tr>
<td>Technological development and legislation.</td>
<td>Expected major technological change in the long run. Short-run impact is exaggerated. Technology help somewhat to mitigate the lack of drivers.</td>
</tr>
<tr>
<td>Industry structure</td>
<td>Intense competition. Very low profit margins. Severe lack of skilled truck drivers. Lack of customer understanding for the industry put pressure on firms in the industry.</td>
</tr>
<tr>
<td>Internal development</td>
<td>Investment decisions of small firms depend on customer demand while larger firms despite that also have future perspectives as base for investments. Continuous investments in employees are conducted for retention and for keeping their knowledge and skills up to date.</td>
</tr>
<tr>
<td>External development</td>
<td>Small firms cooperate more with each other compared to larger firms. Mainly outsource administrative systems. Marketing is limited and they rely more on reputation and connections, compared to larger firms who have less focus on local connections.</td>
</tr>
<tr>
<td>Company structure, size and age</td>
<td>Ongoing consolidation in the industry. As firms grow, they tend to diversify their services and change from transporters into distributors. State-ownership of firms is seen as negative in the current market that additional pressure in an already competitive market.</td>
</tr>
</tbody>
</table>

Table 2

The table 2 summarizes the information that was obtained from the interviews. They contain simplified data and the present the most important points in the different subjects.
6 Analysis & Discussion

In the following chapter, the gathered data will be analyzed together with the theoretic data from the literature review. The analysis will be conducted mostly based on the same structure as the theoretical model presented in the previous chapters. That will include data outside of the model that could be relevant for the thesis to analyze. For the convenience of the reader the initial model (Figure 3) based on the literature review is also shown below.

Figure 5

Figure 5 presents the general structure of the chapter “6.Analysis and Discussion”.

---

**Diagram Description**

- **Haulage industry challenges**
  - Organizational challenges
    - Ownership structure and company size
  - Microenvironmental challenges
    - Industry structure
    - Customer behaviour
    - Technological developments
    - Legislation
  - Macroenvironmental challenges
    - Legislation
    - Customer behaviour
    - Technological developments
    - Reversed outsourcing
    - Economic situation
    - Price elasticity of demand

- **Measures to face the challenges**
  - **Internal Developments**
    - Implementation of disruptive technologies
    - Employee development
  - **External developments**
    - Investments in alliances, start-ups, Joint ventures and M&As
    - Outsourcing and other forms of cooperation

**Change management**

---
To remind of the research questions:
- *Which are the main challenges currently facing the Swedish local circuit haulage contractor industry according to managers?*
- *Which are the key tools and strategies to solve the problems caused by the challenges facing the industry and which are the rationales behind those?*

### 6.1 Industry challenges

#### 6.1.1 Ownership structure, company size and age

Ownership and company size are important determinants of how companies will perform. Several of the respondents can be considered as wholly owned family companies as they are owned by just one individual. Respondents representing organizations stated further that their members are also mostly smaller family-owned haulage companies which corresponds to SCB (n.d.) data. The respondents further stress that smaller size of companies reduces the investment possibilities given the low margins. Choe et al (2015) suggests that high margins are necessary for growth of companies which can reduce the negative effects of problems in crisis times which repeats from time to time. The study suggests that in order to minimize the risks of low margins and low growth companies need to increase the margins not only by increasing the company efficiencies but also by differentiating the products and services. In other words, they suggest developing specific capabilities for specific segments thus increasing the margins which will strengthen the growth of the company. This importance of differentiation for the growth and survival is also emphasized by Brink (2014) which suggests even stronger way of differentiation – a vertical integration into the value chain by for example starting to sell services such as logistics services or drive vehicles that provides services such as a crane truck. An example the article gives is the company Götene kyltransporter which besides being a haulage company has started producing and delivering cheese to the dairy company Arla.

Family ownership is characterized by Thomsen & Conyon (2012, pp. 17-19, 127, 310) as a type of ownership that allows maximal reduction of agency costs such as managers acting against the interests of the majority owner etc. because in this case owners often are the managers. From this perspective the Swedish haulage industry is in a good position as the majority of Swedish haulage companies are family owned and thus are not challenged by agency problems. The full control also makes it possible to freely decide over investments. However, family ownership also often means that the family has all its money invested in that company thus reducing the possibility of risky investments because families are than risk-avert trying not to put under risk their only company and all resources they have. Given these and the fact that the Swedish haulage industry is characterized by low margins (SCB, n.d.) thus generating relatively small cash flows that could be reinvested, it can be speculated that these factors together slow down the growth process of family firms. This as a result reduces the benefits of having total control over family/majority owned companies, as mentioned above. The theory and the speculation are however not supported by the empirical data as the respondents have not discussed the theoretic connection between family/majority ownership and low margins on the one side and growth possibility on the other side. The speculation about the relation of those three factors is however realistic as people usually are risk-avert, especially when they have all...
their money on one project and when their living is dependent on that project. Also given that family firms in the haulage industry have low margins they would not risk making investments if not in the necessary things that would generate money without much risks of not being able to pay back for example loans invested in the company.

Further, Respondent 2 also emphasized that company size determines the difficulties of implementation of changes in terms of cost and time. The respondent gives the example of their company which because of its size creates huge challenges when implementing new systems. This corresponds to findings of Buonanno et al (2005). The study points out the importance of size of companies on the difficulty of implementation of different technologies such as IT systems. Company size is according to the study even more important than the complexity of a company structure. For large companies the difficulty is more of organizational character such as difficulty to integrate a system. For small companies it is more about the costs of implementation. It is both costly to make large changes in large companies and time consuming in a large scale and changes in a smaller scale at the departmental level do not have significant positive effects on the company in total.

Respondent 2 also mentioned the importance of the age of a company when implementing change. He means namely that an old and large company usually means old systems with a lot of old data that are difficult to adapt to new IT systems and make use of them. Also being old means for the respondent having long established traditions, processes and relationships which can be difficult to change if structural changes are being implemented. That because employees are used to old systems and the old ways things are done and do not want to lose their specializations, thus leading them to resist change. These resistance factors such as long established realities in companies and other organizational and individual resistances are described by among others Robbins and Judge (2017, pp. 645-646) but which are not directly viewed as results of the age of the company but rather factors connected to the company culture and rules, and still describe the same phenomenon. Culture and rules and in other words how things are done and what is the atmosphere of the company are all factors that are created over the time, thus being an old company would mean that these factors are already well established becoming a resistance factor for change in case change is needed. It is another thing when change in itself is incorporated in the company culture and it is normal for the employees to change as they have a mindset free of boundaries as a result of that culture or because there have been employed only people with such mindset.

However, the risks of challenges created by the age and culture are according to the thesis authors more problematic for larger companies than the smaller ones. Given that the largest proportion of the industry companies are relatively small the problems of age and culture do not threat the Swedish haulage industry when going through changes. Small companies are usually more flexible in implementing changes, given there is sources for finance for those investments. Those few larger and older companies however will probably need some help dealing with the challenges raised in the process, especially if the company is state-owned. An alternative for example for the PostNord could be to change the ownership, which in this case would mean that the state sells off the company to make it privately owned or owned by investment companies which could make large structural changes in it by removing for example those branches of the business that are unprofitable such as mail deliveries. Such activities could free capital for the company to invest in the operations and make the changes happen faster. Becoming a company free from the idea that tax money could bail it out in case of trouble, could probably also lead it to become more competitive. In other words, the state ownership is not in the company's
interests in this specific case given the urgent need of the company to fresh-up its operations and increase its margins. That is needed as there is an increasing competition from larger and often technologically more advanced international companies and some smaller local and international startups taking market shares in some specific segments.

Respondents 1 and 4 stated further that there is a trend of consolidation of small family owned companies into larger formations. According to Thomsen & Conyon (2012) it is however common that family owners show idiosyncratic behaviour and prefer often to keep a business and to forward the ownership and management to their children instead of selling it at a good price or giving the control to a more clever manager when there are such opportunities. Respondents did not mention such phenomena happening in the haulage industry. Given the empirical data a speculation will then be that there is a tendency of family owners to abandon such idiosyncratic behaviour mentioned in the theory (in case such behaviors are common in reality), and give the companies higher chances to survive by forming alliances, mergers or allowing other companies to acquire them.

Further, Respondent 4 brings up the importance of differentiation for companies when they grow. According to him it is usually the natural way of transformation of growing companies in the haulage industry. Larger companies often have several businesses and are no longer clearly haulage companies thus further decreasing the risks connected to operating in the highly competitive haulage industry. Larger companies can therefore be considered as more competitive as they spread their risks. This corresponds to the ideas of Brink (2014) who emphasize not only horizontal but also vertical integration into the value chain.

When it comes to the importance of ownership for the overall market when the owners of some larger companies are institutional owners, some of the respondents consider it as not relevant for them as their size does not make them too vulnerable to the actions of larger companies owned by for example a state. That is also explained among others by the differences of segments served by the larger and smaller companies. Namely the larger companies according to Respondent 2 are more interested in large orders from larger partners so the smaller order segment and especially those in the suburb areas or in small city or village areas long from the large cities can be served by the smaller companies. Such orders are often given by larger competitors who do not want themselves to take those orders.

There are however some discussions that a larger state-owned company can get privileged conditions by the state and thus get competitive advantage over others. According to Respondent 2 that can usually be the case when one looks at state-owned companies but in reality, such companies usually have more press on themselves than other privately-owned ones. That because the society usually have greater expectations from them and requires that their tax money is spent well. According to Thomsen & Conyon (2012, p. 53) institutional owners differ in their identity and thus have different incentives, priorities and goals. For example, owner value maximization is not always a priority for a state-owned company as they have other responsibilities against the society besides the wealth creation. PostNord is a company which have the main responsibility for delivering mails in Sweden and Denmark despite the fact that it is a shrinking business where the company has large losses annually (PostNord, 2017, pp. 3, 7, 26).

To summary the points related to ownership structure, company size and age those can be considered as factors creating both challenges and solutions to some challenges with
opportunities available only to a specific size or age of company. For example, if a company is owned by a state, a family or an institutional owner it gets different problems and opportunities. Or if it is large it usually has much more resources to invest in different initiatives than smaller ones. Being small and young company have its benefits in terms of flexibility and speed which means solutions in case of availability of resources will be much easier and faster to implement than in large companies. Being an old and large company has on the other side an intensifying effect on challenges and a braking effect on implementing solutions to company challenges.

Based on this chapter the components ownership structure, company size and age can be used in the final model as factors that are not only challenges but rather factors that have effect on the company both from the perspective of challenges and their intensity, the choice of solutions to challenges as well as have a substantial roll for the success of implementation of those solutions. Thus, these factors belong to the same category of catalysts as change management.

6.1.2 Economic situation
The respondents’ views on the current situation of the economy are given indirectly through a description of the situation of the industry instead of stating that the economy is booming. Their answers are similar and describe that the haulage industry has high demand and companies sometime have difficulties with meeting the capacity demanded. Further they mention that there is a lot of activities and change in the industry. These are indicators showing that the economy is booming. Besides the difficulties created by the economic situation such as lack of capacity there is also the problem connected to the profit margins which are low despite the positive economic situation. That can be more problematic in case an economic recession. The respondents provide little discussion on future economic development or their actions in the event of a recessions.

The simultaneous situation of high demand and pressured margins can be seen in the light of the theory of price elasticity (Sydsäter & Hammond, 2012, p. 229-231). The low margins despite the demand could suggest that not only is price the main method of competition, a lack of diversity in answers on price margins suggest limited ability to demand a higher price. This can be interpreted as an industry market with very elastic demand for services, a state that would mean that this economic situation cannot be expected to change within the observable future. Given that the prices are low already during the current growth period of the economy that is predictable that the price elastic customers will require even lower prices for transport services in case of recession. This also corresponds to findings of Muniady et al (2014) discussed in the “3.1.4 Customer behavior” stating that economic situation in a country affects customer behaviour.

Another factor that is related to the economic situation of the industry is the perceived lack of qualified labour which is one of the recurring problems in the empirical data that according to the respondents, limits firms. The data show that not only have this lack of drivers been a problem for a time, it is a problem that is predicted to persist for the foreseeable future. In an economic recession the problem can however become less intense as many companies go bankrupt during recessions and the supply of labour increase. This is manipulation which however is not discussed by the respondents of this thesis. The respondents rely on institutions such as educational facilities, to provide the workforce, such as education. In accordance with Natter (2018) firms instead invest in employees to improve employee retention and as such try to minimize the possible harm from lack of labour.
6.1.3 Legislation
This cover both how legislation impact the industry as well as how the respondents perceive legislation. The respondents view is that politicians lack understanding for the industry despite passing legislation that will significantly impact it. One example of such is when they push for alternative fuel and technology in vehicles at a point when infrastructure and existing technology are not able to support the industry to an acceptable degree. But at the same time some positive developments are mentioned at higher legislative bodies that are expected to have positive effects, such as diminish unfair competition between firms in different EU member countries. In general, this hints a different view on the state of change in fuel sources, which could lead to politicians being misdirected and ineffective. The respondents also find other aspects of the legal system be impractical. The best example of this is the maximum time a driver is allowed to work that does not take circumstance into consideration and could benefit in being more flexible. The industry is also critical to the lack of initiatives to solve the current and predicted lack of labour available. This further hint a difference in priorities between the lawmakers and the industry which can cause exponential problems should no effort be made to reconcile these differences.

Our literature review presents a different picture. European Parliament (1,2; 2018) have proposed a number of resolutions affecting the haulage contractor industry for long period of time, with continuous revisions and changes before laws are passed. This match what the empirical data showed in the case of EU legislation. As seen in “Regeringens proposition 2016/17:16: Godkännande av klimatavtalet från Paris” Swedish legislator have advanced environmental laws of the years, although was not given this positive response in the industry and as such can be considered to carry a negative opinion.

Our results are therefore consistent in their knowledge of (European Parliament, n.d.) and can be considered to have a favorable opinion in the capability of legislation on this level. In addition, our showed that a negative opinion in the work and capability of Swedish legislation and as result are seen to have a pessimistic view on future work from Swedish lawmakers.

6.1.4 Customer behaviour
Most of the respondents describe the customer behaviour as changing phenomenon with increased demands in terms of speed, cost and convenience of deliveries. They consider it as a component that creates market disruptions together with technological developments. That correspond with the theories of Millar (2018) and Houghton (2017) and partly by Teixeira (2019).

Houghton (2017) shows difference between individual and corporate customers. According to the study corporations in addition for cost convenience and speed also often require environmentally friendly processes and vehicles in their deliveries. This can be find as a practical view on the customer identity and demand characteristics which is a common theme among managers, which however is strongly contradicted by Teixeira (2019) which accentuates that the main drivers of change and industry disruptions are the costs of individual customers and not corporations or technologies -costs in terms of “currencies” money, time and effort used to pay for the products or services they need. This also partly have been discussed by the respondents as mentioned above but not in such a deep level as Teixeira (2019). According to the study those companies that offer the least costly products in terms of those three “currencies” get the customers. Companies such as Uber, AirBnb have managed to cut one or all three of those costs more than the market leaders in the traditional forms of those businesses, thus resulting in disruptions in
their markets. What is not covered by Teixeira (2019) is that not all customers are price elastic or in other words consider price when buying. They however still will require convenience and speed thus making this theory relevant for the description of the customer behaviour.

Muniady et al (2014) describes the economic situation and personality as factors driving customer behaviour. Customers buy more in a good economic situation which automatically means increased demands for transportation services. The customer behaviour based on the economic situation can be explained by Teixeira as it is related to customers desire to minimize their monetary costs. In case of personality it is however difficult to explain by the same theory. The respondents describe the increased needs of customers in terms of speed and convenience as a challenge for the industry but not in terms of customers personality as that is maybe more a question of marketologs etc. However, it cannot be excluded from the list of factors driving change as worldwide brands try to give the customers a variety of products so the customers can find the one that fits them most and thus generate more sales. Thus, this can be considered as one of the driving factors behind increased consumption besides increased e-commerce.

The above-mentioned views show that the driver of change is customer behaviour which leads to development of technology to satisfy it. Technology pushes the customer to choose to use it as by doing that they reduce their “costs”. This in its turn means disruption of the old realities of the traditional business in different industries including the transport industry. Respondent 2 touches this point when he discusses the smaller startups that operate in the “last-mile” segment of the transportation industry. He namely thinks that those companies take that segment of the market and do it better than the larger players do, thus taking market shares from them which means a disruption of the market.

Respondent 2 also discussed the previous point from the perspective of their corporate customers. They namely also usually have individual customers who put pressure on them with their demands related to speed, cost and conventions and to satisfy the requirements of their customers they put the same pressure on the transportation services. Thus, Respondent 2 shows that even with the corporate customers one mostly meets the individual customers demands, which however in addition have some requirements related to environment etc. If one thinks deeper so even the environmental demands of corporations can be viewed through the lens of those three “currencies” of individual customers. Environmental requirements of corporations can be considered as ways to satisfy their customers in terms of convenience or comfort of the environment they live in.

Houghton (2017) develops further the topic of technologies, customer demands and environment by stating that for example better technology such as better e-commerce platforms instead of retail that lead to increased consumption require more middlemen and more transport per single good compared to retail and as a result, each delivery will have a larger environmental footprint. This can be considered as contradiction to the demands of environmentally friendly deliveries that corporations providing those online platforms often have. This contradicts the example related to the theory of Teixeira (2019) given by the authors of this thesis that corporations by requirements of environmentally friendly deliveries desire to increase the comfort of customer related to its environment. However, this study finds that the actual environmental problems related to increased consumption are not always easy to notice by the customers and their attention is more on the announcements of the company about its requirements of environmentally friendly deliveries rather than the actual impact that their consumption creates. In other words, the
ability of corporations to affect the perception of its customers and make them think that their costs are reduced plays a significant role in such cases.

Further, Teixeira (2019) opposes the view that there are a lot of technological innovations in the industries especially created by startups that disrupt them. He namely thinks that there are just professionals out there working on intensive marketing of technology sector to make it a hot topic and give the industry a momentum. Similar opinions have respondents of some of smaller companies. They think it will take much longer until really disruptive technological changes happen. Teixeira (2019) suggests that really disruptive technologies are very few. However, he thinks that those which come and make such disruptions are disruptive because they have managed to reduce the costs of their customers.

Teixeira (2019) continues by emphasizes that disruptive effects come also from other industries and not because it is technologies themselves that spread in different industries but rather because of users of such technologies that tend to use similar technologies in other industries also. Such small decisions of millions of individuals create the disruptive effect of one and later several industries. Therefore, the author suggests companies to keep track not only on their own industry but the neighboring or completely different industries as well because their customers use products of other industries according to the same principle of reducing their three costs.

The authors consider this view of customer behaviour as the main fundamental source for technological development and industry disruptions as the theory that have the strongest arguments, and because the empirical data generally discusses the same thing although not as deeply and that because of the lack of knowledge about such research based theories. Teixeira (2019) have more of a philosophical approach to the question which cannot be seen in discussions of company managers so often. That especially among the managers in smaller companies who are more focused on everyday operations of their companies and do not have time to analyze their industries, to not say to have to keep track of other industries. This however largely depends also on the personality of the managers as curious managers may find time for educating themselves over industry changes and find time for thinking long term.

To summary this chapter and the theory the customer behaviour in terms of the desire of the customer to minimize his costs is the driving factor behind technological development and industry disruptions which are conducted by companies which are often startups. Technological developments and reduction of those three costs in their turn lead customers to shift their demands and require that level of reduction of their costs from other companies too which with many such customers turn into a wave of change in the industry. It often moves to other industries thus disrupting them too. Thus, Teixeira (2019) explains both the changes in industries and changes in customer behaviour.

6.1.5 Technological development
The respondents’ view on technological change in the industry seem to depend on their time-horizon and how they estimate future development. The respondent answers vary. Some respondents, especially the smaller ones mention that they change their technology according to customer and regulator demands. Others, mostly the larger ones have a longer perspective and stress that they agree with the thought that technology will radically change the industry and those who are related to it, but they believe this change will occur over a long period and far slower than many believe. This give important pieces of information. First, small haulage contractors do not follow the technological
developments and try to be at the forefront. Instead they focus on what is required now.
Second, while technology is expected to change the industry, the industry does not expect it to be a shock of the magnitude many think it to be, at least in the short term. Millar (2018) shows both similarities and differences in these points. The study argues that electric cars and automation of transport will fully replace the current system. At the same time, it argues that this will take a considerable time.

This shows that this study is mostly consistent with Millar (2018) as it agrees that technological development will change how the industry operates. However, some of our observations differ from Millar (2018) shown in two points. First: while we agree that technological development will change the industry in time, the difference in degree of this impact is noteworthy. According to our study the impact of change will be far less severe and widespread. Second: While Millar (2018) discusses how beneficial this change will be for companies, those benefits are only noteworthy if a company is able to take long-term technological change into consideration and have resources for it, which based on the empirical data small haulage contractors are unable to do. In conclusion, small haulage contractor in general invest in technology if customers demand and will avoid it if this is not the case.

6.2 Internal developments to deal with challenges

6.2.1 Investments in technologies

Our study shows that investments in technologies is not something that is actively decided on when it is about small haulage contractors. According to the study small haulage contractors invest in technology when customers demand it, or legal development require upgrades to existing technology. Small firms in the sample do not seem to invest in technologies if these prerequisites are not fulfilled. Investments of small haulage companies are in the most part related to vehicles, such as more efficient engines or changes to the flatbed. This can mean that small haulage contractors mostly rely on customer demand to determine the time of and what kind technology firms invest in.

There are however small companies that invest a lot in other types of technologies than the rest of the industries small companies. They are startups serving the “Last mile distribution” segment. They invest a lot in equipment specially developed for small spaces like small and expensive warehouses in city centers, short distances and flexible transportation. The larger transportation company of Respondent 2 is mostly out of that segment because of the startups who are more specialized in that segment and are not distracted by other businesses or challenges like the company of Respondent 2.

Larger companies have a different perspective on investments. Their size brings them different challenges not relevant for small companies, and availability of capital allows them to make investments among others in technologies but that more by taking own initiatives instead of following mostly customer demands or regulation as the smaller companies do. They according to Respondent 2 have among other predictions of what the company is going to require in the future and competition as drivers of initiatives to invest in technologies to become stronger against company challenges. According to Respondent 2 it is increasingly important for companies to know where they are heading and what they need to invest in, as technology develops at a high rate. The solution according to
him is to have specialized purchasing centers inside large companies that analyze the company's needs and also finds suppliers specialized on the technologies they need and give highly specific orders. This will according to him reduce risks such as investing in technologies that will not be possible to scale up and develop in the near future or the risk of giving wrong orders to wrong companies. Competition is also a strong driver for the respondent’s company to make investments in technologies for not getting competitive disadvantage.

Further the company of Respondent 2 invests in artificial intelligence and Internet of things to increase its competitive advantage. That will allow the company to compete with the international actors who already have large investments in those fields and get the benefits of these technologies. This however is done only in some departments of the company and not in all of them. That because the company is large and old thus making it too costly to implement such technologies in all parts of it. The company also invests in advancements of administrative IT systems which will make the operations more efficient and also increase the employee satisfaction.

6.2.2 Investment in employees
In our data we observe different approaches to investing in employees. The firm generally offer further education in existing employee skills and other aspects that are required. They state that they in addition to this see investing in employees as a way to retain workers and increase the firm attractiveness on the labour market. Otherwise they invest in their employees depending on customer and legal requirements. This could be interpreted that firms see investing in employee as more than a simple investment and might use it as an active tool to be used to improve the firms standing in the labour market. Our observations correspond to findings of Natter (2018) who describes very similar information with few noteworthy differences, such as increased morale and higher employee retention. Our observation is therefore consistent with that reported by Natter (2018).

In the context of above described investments in employees and retention rate Respondent 2 has another point. If we consider the employee salary as an investment in employees that according to the respondent is not so high in their company in relation to their competitors but despite that the employees retention rate is low and those that leave the company tend to return after they work in other companies. That according to him related to the company culture that shows investments in employees do not need to be about money only. This corresponds to the findings of Robbins & Judge (2014, pp.39-42).

6.3 External developments to deal with challenges
The study has provided little additional information regarding external investments in consolidation and cooperation as the respondents did not show an interest in answering those questions. Available answers regarding to external investments in terms of consolidation and differentiation will be provided below. As such simple collaboration and coalitions will be considered as more important as the study provided more information on the subject.

The study shows that firms in the haulage contractor industry face small margins and
intense competition (Bodensjö, 2018). As a result, collaboration between firms lead to some of the benefits presented by Saeed (2013). These includes economics of scale, improved economics of scopes and greater flexibility when serving customers.

6.3.1 Investments in alliances, start-up projects, JVs and M&As

Several respondent state that there is an ongoing consolidation in the industry among the smaller companies. That according to respondents 1 and 4 happens among others through formation of distribution centrals or networks of small companies which are types of alliances. Consolidation also happens in terms of mergers and acquisitions described below.

The respondents consider alliances very helpful for small companies cooperating with each other and for large ones operating with small companies in rural areas or when they have small orders that they cannot deliver by themselves. These corresponds to Saeed (2013) which states that alliances create many benefits for companies including improved economies of scale and scope, more flexible services to the customers etc. Alliances also increase the market power of their members and often make them more profitable. He also states that there are different kinds of alliances and the one where small company cooperate with larger ones there the benefits are limited and are more in terms of flexibility.

M&A have according to Respondent 4 become more common during last years and companies become fewer and larger. This helps them to gain more resources and market share as well as gain access to new services and technologies. Through differentiations of business and through increased market share companies increase their competitive power and minimize risks connected to having investments in only one segment of the business. This mostly corresponds to findings of Collis & Hussey (2014, p. 235-245) who presents several of benefits of for example acquisitions such as gaining full control over the company, its resources, customer bank which often leads to easier expansion, economies of scale and increase in productivity. This alternative is according to the author used to overcome possible problems connected to simple contractual relations in alliances or JV: s. Such risks are connected to the lack of full control of the partner company, low motivation of the partner to put energy, time and money into the partnership etc. These last additional benefits of M&A have not been discussed by the respondents. The respondents have not discussed the possible challenges of the mode either, probably because of the lack of personal experience in M&A integration processes. According to Collis & Hussey (2014, p. 235-245) the drawbacks of M&A is the integration problems of the companies. This is an interesting point from the perspective of change management, size and age of companies discussed by Respondent 2. The respondent suggests that size and age are important determinants of successful change. He however discusses those points from the perspective of implementation of new technologies or restructuring the company. M&A is also a form of change that creates challenges for a company such as integration of different business systems, cultures, norms etc. and depending on the size and age of the company these challenges can either be easy as with smaller and young companies or difficult as with larger and much older ones. The difficulties of integration can according to Collis & Hussey (2014, p. 235-245) damage among others the company efficiency, result in loss of human capital and lead the company to financial loses and competitive disadvantage. Given that most of the companies in the Swedish haulage industry are small they can be considered to have relatively easy challenges of integration after mergers and acquisitions.
The other methods of expansion and development such as joint ventures or investments in startups for getting access to new technologies or knowledge for future gains haven't been discussed by the respondents. These methods are considered by the literature as important alternatives for cooperation if the cooperating parties see increased need of deeper cooperation instead of having simple alliance relations but do not see necessity of merging their companies. Despite the above described potential benefits of these factors they will be excluded from the final model.

The theoretic background does not cover which method of expansion or development is the most common in the haulage industry. However, given that some of the respondents think there is a tendency to consolidate and differentiate that already means that likelihood of those different methods being used when expanding, is high. It is however a question of speculation. For example, given that the large companies serve only a small proportion of the market and that logically it is the larger companies that can invest in startups for future gains, a logical conclusion can be that those types of investments are not so common in the Swedish haulage industry. International competitors such as DHL and DB Schenker have however invested in start-up projects which probably depends on their size, availability of resources and long terms expansion goals.

Further based on the empirical data there are both growing number of small companies active in networks and there is a tendency among the industry companies to merge by creating fewer and larger companies. As both types are common among small companies an assumption here is that there are sure companies that use a combination of both of these types which can be a method for faster expansion as both give additional possibilities of economies of scale and scope as well as will give them increased negotiation power with the customers and suppliers. However as larger the companies will become, the more challenges they will get in terms of among others integration problems.

6.3.2 Outsourcing and Outreach

Respondent 2 represents a large and old company which faces various challenges, one of them being competition with technologically more advanced companies. He considers outsourcing to be a vital part of their activities, especially when it comes to outsourcing of internal IT systems. He thinks that those are better to be developed and implemented by specialists instead of having an IT department in one's own company which is not an IT company in the core. This corresponds with findings of Millar (2018), according to whom outsourcing is an important method for companies to survive when there are a lot of changes in the environment. The author states that by outsourcing non-core activities which can change faster over time because of technological developments in the industry they can focus on their core business instead and let the specialists take care of the rest.

Respondent 2 stresses however the risk of unsuccessful partnerships with outsourcing companies. According to him it is also important that you are good at defining what IT systems or IoT technologies the company want if it wants to be successful in ordering, implementation and usage of such systems. Knowing what you want also according to him ease to find the right partners. Often this part is overlooked by companies. What the Respondent 2 means is that instead of having indoor IT departments for delivering such systems a company should have a specialised department for analysing the company's demands and making right orders. This part is not covered in the theory, but it is an important point made by the respondent and can be considered as equally important for other larger companies also.
Outsourcing of maintenance and administrative services and systems are also accepted tools by the rest of the respondents when there is a need to concentrate on the core business. The empirical data shows that cost is considered as one of the most important aspects when deciding whether to outsource, a point that is also mentioned by Judenberg (1994). In summary, the theories covered in this study support the empirical data that outsourcing of administrative systems and other IT systems is increasing value. Those are common in the industry and provide additional benefits.

When it comes to outsourcing of logistics respondents mostly have a very negative view on this and do not think that outsourcing physical labour creates additional value and is seen as alternative by small firms in the haulage contractor industry. This corresponds to Hilletoft & Hilmola (2010) who state that outsourcing provide greater efficiencies for logistics.

Further, respondents agree with the point that outsourcing in terms of leasing is also an important tool for not affecting the company financials too much and think that leasing is gaining more popularity among the industry players because that possibility. This corresponds to findings of Millar (2018) and Farris & Pohlen (2008). The theory on the other hand describes several other advantages of leasing such as possibility for always having up to date fleet, better maintenance of the fleet etc., which however were not relevant for the Swedish haulage industry as deduced from the empirical data.

**Outreach:**
According to our respondents, small haulage contractor firms rarely use or even consider outreach in order to make new contacts and instead rely on existing contacts and the reputation of the company to gain future orders or other gains. In addition to this it was pointed out that it could be difficult for people in such firms to understand the meaning of outreach. Outreach activities used were among other relationships with education services and the like to contact new labour, although this can be argued to be outside of the scope of such firms. This is partly related to the study from Babloyan (2018, p. 98-100) where there are discussed examples of outreach activities such as reaching out to existing local institutions and organizations such as those providing education services in order to create relationships for getting future benefits. Examples of benefits are recruitment of workers and increased presence in the local environment via those organizations. This can be used by small firms to gain access to labour and contacts with little investment. They can reach this by providing among other internships to schools. This would allow the firm to make contact with and evaluate students before they enter the labour market. The study shows however that companies are ready to engage in such activities only if those do not require much effort. That because there are alternatives that require less effort and cost such as using the social media or advertisement for recruiting labour.

Some of the data pointed to difficulty to maintain local outreach for larger firms. They turn their focus to larger, less local targets. This mean that outreach is of little importance to small haulage contractors related to relations with larger companies.

Outreach in terms of lobbying/ advocacy were also among the topics discussed by the respondents. While companies in the industry do use lobbying in order represent their interests in the political sphere, they also use more direct means to impact the population and businesses that the haulage industry sells services to, such as spreading information about the industry and its importance that can help haulage companies in price negotiations with their customers or which can indirectly lead to politicians creating for example more subsidised education for drivers. Note that this is done by organisations that
represent smaller firms and not the companies themselves. Dagens Industri (2019) writes however that stricter environmental legislation shows that the industry's lobbying is inefficient, especially on the regional level. As a result, our observations and this observation agree with each other as the firms do not focus on lobbying on political level and instead prefer advocacy direct to the population since it is more efficient than targeting politicians.

6.4 Change Management - A catalyst for implementation of solutions

As the observations of the study have among others covered questions related to implementation of solutions and challenges connected to them the authors assume therefore that systematic change management is something that must be considered in order to succeed in processes of change.

Our observations show that change happens differently between small and larger firms. Small firms change depending on customers’ demands and larger organisations present a longer horizon when they discuss change. These are two different situations that could be treated differently but we can see that both small and large companies have similarities in the fundamental problems which is about managing people in the organizations. This is consistent with Gazley & Kissman (2015, p. 77) and Peterson et al (2014, p. 57-59) as their models can be seen to apply to the situations the respondents discuss. This do not mean that they are a perfect fit, but the steps can be applied in general to both small and larger organisations. Our empirical data therefore align with Gazley & Kissman (2015, p. 77) and Peterson et al (2014, p. 57-59) to a satisfying degree. Large and old companies however have problems not only connected to people but also for example to integrations of old data and old IT systems with new ones and which require management to complete successfully. The study however does not cover that as it is more a question of another subject.
7 Conclusion

In this chapter the purpose and problem formulation of the thesis will be answered by the help of results from this study and a final revised model of the challenges and solutions related to the haulage industry will be presented. Afterwards a discussion over the theoretical and practical contribution of the thesis will be conducted. Limitations that have affected the research process will be presented. The chapter will be concluded by recommendations for companies and for further research.

7.1 Answering the research questions:

The purpose of this study was to investigate how companies involved in the haulage contractor industry who specialize close area distribution view the current state of industry and examine how these firms adapt changes in the industry. To answer the chosen purpose, two research question established:

- Which are the main challenges currently facing the haulage contractor industry according to managers?
- Which are the key tools and strategies to solve the problems caused by the challenges facing the industry and which are the rationales behind those?

Literature that was used to provide underlying theory was focused on different factors that can impact firm’s decision making such as how customer behaviour affect firms and how companies react to change. The literature that was used as foundation for study also consisted of topics concerning technology, investment decisions and legal frameworks. In order to conduct the study, an interview guide was created with the goal of to:

- Gain understanding and knowledge of the actions in management from small haulage contractor.
- Understand what are the deciding factors that determine management's decisions and the methods they use to enact their decisions.

The model was constructed with several variables: The dependent variable industry challenges. Changes as a result of changing customer behaviour is a challenge. Two factors impact possible solutions, Internal investment and External investment & Collaboration. These major subjects contain several subcategories, for example legislation, investment in employees, technological disruption etc.

To answer, the research questions a qualitative study was performed with data obtained through interviews with respondents. The information was then transcribed and categorised using grounded theory before being structured according to thematic analysis. The sample consists of 7 observations, spread across the target population. The effect was measured by analysing how a number of factors impact the haulage contractor industry. It was then analysed how External development and Internal development lead to solutions for industry challenges that come from developments in the industry. This was then interpreted whether a subject had an impact, had a partial impact or if it had no impact on industry challenges.

As for the results there are a number of findings in the analysis:

Challenges:
Small firms are in a state where they have limited access to resources which in turn impact how they view the future. Local circuit area haulage contractors as a result of this have a limited horizon for future predictions and invest that could the firm in the market. The economic situation of the industry with intense competition and elastic demand among customer ensure that this situation is not expected to change in the foreseeable future. This study has identified and put into context a number of factors that impact change in the industry and factors that impact how this change is seen by management. This study has found sufficient evidence to be able to identify major categories that can be used to classify challenges and solutions and change in the haulage contractor industry. These is information that have been obtained and apply on firms that are involved in local circuit haulage contractor. It has been found that change management as tool can be used by firms to adapt to previously mentioned changes in the industry.

The study has identified the importance of customer behaviour to determine the actions of firms. It has been identified as one of the main drivers in determining future actions of firms, small firms in particular. Technological development and legislation are predicted to have a relatively limited impact on the industry in the short-run but are expected to have a substantial and transformative impact in the long-run. Small firms’ main drivers are customer demand and legislation. This can be compared to large who in addition to customer demand and legislation are driven by competition and long-term investment.

Additional findings:

In terms of external development, firms have responded to development in the industry by different means. Smaller firms have increased cooperation with other firms make greater use existing channels such as networking and local brand knowledge to maintain their standing in the market. A good example of this cooperation can be found in two of this study's respondents. Outsourcing of less important work are also taking place, such as administrative systems, that are not relevant for the core business. Technological development in the industry also proceed slower and with less impact than was previously believed and its impact will be less than was previously thought.

Another finding of interest is the negative opinion management have of legislators in the industry and doubt their ability in balancing policy that benefits both the haulage contractor industry and environmental demands simultaneously. This is in addition to the perceived failure of legislators to the respond to the current lack of drivers and financial support to redeem this situation. Another finding was that management in the industry find that customers lack understanding for the work they perform and are unable to grasp the value of their services and how vital the industry are operational activities and the economy as a whole.

Solutions:

The study has identified Ownership, size and age as critical factors for haulage contractors in a period of change. It impacts every other factor an encompass some differences that exist between firms. Older firms are in general more resistant to change due to inertia from existing systems and its impact on procedures. Size is a impactful variable as smaller firms not only cooperate more with other, smaller firms, they also focus more on the short-term demands from customers to base their decisions on. Large firms on the other side are more independent and have more market power, resulting in larger firms being able to focus on problems outside of direct customer demand, such future technologies. Ownership structure relates to the question of whether state ownership impact the actions
of a firm and the industry at large. The conclusion on this point is that it exists a consensus that believe that state ownership provides leeway for actions that would not be considered acceptable for private firms.

Small firms are found to only implement relatively few of the suggestions put forward in this study, compared to larger firms. In response to the intensive competition and low margins that characterize the haulage contractor industry, small firms turn to networking, alliances and collaboration to reach profitability.

7.2 The thesis model based on the results of this study

Below is the final revised model that in comparison to model 3 has several changes. First, there are no longer the components “investments in startups and joint ventures”. That because based on the empirical data they do not seem to be common in the Swedish haulage industry in comparison to for example US. There are although examples of international companies such as Schenker and DHL active in Sweden which have initiatives related to startups, but it is unclear whether those initiatives have been implemented in Sweden.

Further a new component called “age” have been added the “ownership structure and company size” as the study showed that it is an important factor that can create problems for companies in terms of old culture, systems etc.

There is further another new component in the model where you once more can find the “ownership structure, company size and age”. This time those are presented as factors that impact all other components of the model. They impact by changing the level of intensity of challenges and/or by supporting or breaking the implementation of solutions or change management. The rest of the components of the model being initially based on the literature review, have been supported by the empirical findings.
When going through the above mentioned model based on theoretic and empirical data a question still remains - What do this study add to existing research? Our contributions to existing research, when taking these findings into consideration are:

- **Take age as a controllable variable when changing a company, despite its size.**
- **The industry representatives perceive that customers and legislators do not understand the industry situation and crucial role it plays for the economy. That leads the customers to still have the traditional expectation of the industry being as a buffer zone for their cost cutting and politicians to not support it enough in terms of education subsidies or pressure it by heavy environmental requirements.**

*Figure 6: The final model*
The components “investments in startups and joint ventures” presented in the initial model have been found to not be common in the Swedish haulage industry.

7.3 Practical and theoretical contributions

Considering the results mentioned previously, what does this study contribute with to existing literature in a practical sense? The study has identified a number of differences between existing theory and its practical implications for firms. Change in the industry occur more gradually then was previously thought. Small- and large firms have different views and act differently when facing change. As a result of this change management can be quite different to between small- and large firms as some of the components in the change management are not so relevant for small companies.

The practical contribution of this study is an increased understanding for the haulage contractor industry from the theoretical field. This understanding can allow policymakers and researcher to reflect on their actions, so it provides a better fit for the industry.

This could allow for research to bridge the possible gap between the fields and create a better situation for all. It can also be easy to forget that a functioning system of transport is not a God-given right, as such it is important to improve the current situation before it becomes unsustainable given the current challenges.

The findings in this study are not revolutionary and simply meant to increase the understanding for the Swedish haulage contractor industry and to show how changing customer demands change it, and what the industry can do to adapt to this change.

7.4 Research limitations

In order to increase trustworthiness and provide a critical discussion on the study, this chapter will present the most critical limitation to this study.

**Choice of respondents:**
This study only consist of 7 respondents, respondents who were purposefully chosen because of their inherent characteristics, such as background. This have been done without randomization and with full voluntary participation from the respondents. This risk to create participation bias which mean that the data risk being skewed. Considering that the goal of this study was to gain information about the industry, such a possible bias is too small to have any noteworthy impact on the value of the information. The larger problem is the sample size which can be considered as small. While the number of small firms can be considered as small, it makes up the majority of the sample with resulting numerous repetitions of information received. The organizations represent other firms, mostly smaller, and provide insight in how larger groups of firms view and act in the industry. The largest flaw in the sample is the very small number of larger firms (1) considering its prevalence in the analysis. Even though that respondent provided a substantial amount of valuable information and was one of the most informed respondents around the industry in the sample, this is still a flaw in the sample that have to be taken into consideration when the study is viewed in other contexts.

The second limitation is the lack of pre-existing knowledge among the respondents. When gathering empirical data, it was discovered that many terms used in the study were not known to the respondents. The stated reasons behind were among others, that they were too academical, not relevant to the subject or the respondent did not understand what the
words meant. This is a possibility for improvement. However, the respondents were provided with additional explanations and examples to help them understand the meanings of the terms. Despite these efforts it creates the risk for cognitive bias. This can result in respondents providing wrong information based on misunderstanding.

7.5 Ethical implications

The current situation of the haulage industry in terms high demand and high competition are not perceived by this study as a situation where it will be common that some of the sides such as the customers or the suppliers of haulage services will try to take advantage of the other side as bargaining power of both sides seems to be balanced. That because despite high competition companies still can find other customers if their customer refuses their offers and similarly the customers can find new suppliers relatively easy if they do not get what they are looking after. This can be one of the reasons why the prices do not increase. The traditionally low prices should not be perceived as if customers take advantage from the company's situation because as already said in the beginning of this sentence it can be more related to the tradition of having low prices in the industry which creates expectations that it is normal and that it will continue to be at the same level even in the future.

Actors that can benefit from the situation of high demand are the truck manufacturers, banks giving loans to companies for buying trucks, the legislators and governments as there are generated more workplaces during them being on their positions etc. Furthermore, logically the truck drivers are one of the largest beneficiaries in the situation as their services are high in demand and they can require hi salaries in case they are not members of trade unions which can agree with trade unions of haulage companies over a specific maximum level of salary. That could be risky for the survival of haulage companies as the driver salaries traditionally being one of their largest costs increased even more. That given the already low margins of haulage services could result in many companies going bankrupt which would create problems in a situation of high demand. However, that could be a reason for increasing the prices of haulage companies. That would impact the profitability of other industries using transport services, especially those which are transport intensive. The companies which would go bankrupt would also affect banks which have given loans for financing their operations and assets. This could probably be solved by for example government subsidies for the employee salaries or increased subsidies for education of more drivers which would balance the supply and demand of drivers by decreasing the currently potentially high bargaining power of drivers.

Increased demand for haulage services leads to increased number of trucks on the roads which means increased pollution which is bad for the legislators as they have environmental goals to reach and bad for the people breathing the polluted air. Companies, especially the smaller ones are perceived to act reactivity related to implementation of environmentally friendly technologies in their trucks or in other operations. They rarely take own initiatives to invest in sustainability and mostly follow what the legislators and customers demand in terms of sustainability which can be considered as unethical behaviour towards their stakeholders such as the nature, people etc. The small companies however have often financial limitations when it comes to such investments which can partly explain why they do not take such initiatives which also can reduce the possibility of the existence of an unethical attitude towards the stakeholders.
In this above described context can be considered even the initial customers of related industries that order haulage services for delivering their products. Their consumption is one of the largest driving factors of different developments in the haulage industry, including increased demand for transportation services, technological developments in form of among others e-commerce platforms for making their buying process more convenient thus leading them to consume more etc. The company’s behaviour in this regard also has components of unethical behaviour but before coming to that let us continue with the consumers. Given the current increasing consumption around the world it would be logical to assume that consumers behave increasingly unethically. They however can also be considered as actors that lack knowledge about how through what kind of processes their products reach them and what impacts those processes has on the environment or people and animals leaving in that environment. In contrast that is however common nowadays to hear about customers that are aware of their impact on the environment and try to create and follow sustainable trends such as consuming less, reusing more and taking care about the nature in different ways etc. Then a question is why does the consumption continue to increase? One reason can be demographic change. The increasing consumption and increasing number of trucks however seem to give stronger arguments for the first two alternatives, namely that either consumers are unaware of their actions or they act unethically by not caring about the effects of their consumption. It is difficult to believe that people are unaware of such negative effects in the current environment where advanced technologies allow constant, quick and easy access to information from every point of the world and related to everything. It is difficult to make a conclusion in this question.

The companies that develop systems or run a lot of advertising pushing their customers to consume as much as possible can be unethical. It is unethical if we do not count the fact that they act according the rules of the game which are provided by capitalistic systems of most of the modern societies. Similar unethical behaviour could have been identified among the bankers during the financial crisis of 2008 after which some of them had blamed the rules of the game for their greed.

Thus, many fundamental changes in how the society works would be required if governments want to make the consumers, businesses and other actors act as ethical as possible. So, it is mostly a question of the system of the society which however is difficult to change.

7.6 Societal implications

Given the increased pressure on the haulage industry from the demand side and the difficulty to find new qualified drivers and sometimes even bottlenecks in deliveries of new vehicles from automotive producers parallelly with low margins would logically result in increased prices for the haulage services. The problem is that the prices do not increase significantly among others because of the traditionally low-price expectations of the customers from the haulage companies which creates a vacuum situation leading in many cases to refusal of orders. Even if prices in some cases can increase the capacity of facing the demand can be problematic and still lead to refusal of orders. Refused orders also mean difficulties for related industries in terms of costs connected to time spent on searching new transporters, lost orders and customers because their customers can refuse to accept other delivery dates or move to other companies providing faster and better deliveries of their products etc. In such cases companies try to cooperate to solve the problems but then such services are less profitable as there are more hands sharing the profit and it can be expensive for the customer.
Further, when companies are not profitable and pressures as those described above continue and grow over time companies not capable of overcoming them can get bankrupt increasing the unemployment and decreasing tax flows.

Being unprofitable also can result in lost opportunities such as buying new trucks for a possible large order as banks do not easily give loans to unprofitable companies. This can result in lost opportunities for automotive companies also as they will not sell as much as the economy demands because of such financial problems. This will lead to lost potential employment of new workers and lost potential taxes that could be paid if all truck demand were actually satisfied.

In general, the whole economy loses and becomes less efficient and agile when the transportation sector gets bottlenecks.

The Implementation of technologies that increase the efficiency of companies internal and external activities or by changing the attitudes towards the transportation sector can improve the situation. Change in attitudes can relate both politicians to increase state subventions for driver education or customers for increasing the service prices which can lead to improved profitability, smaller bottlenecks for both the haulage industry and the related industries and healthier economy.

Since developments in the industry are likely to have far reaching effects on society – there is a need for further studies.

7.7 Future research and improvements

This study provides opportunity for additional research in a related subject. One alternative is a practical study on how government organizations can incentivize change in the haulage contractor industry. This would allow the government to examine how it can better impact firms in the industry, limit negative impact from government mandates and develop better practices for future dealings the industry.

A second possible research area is to study how certain industries react to change under pressure. This is especially relevant for low-skill industries such as construction or similar areas. This could be similar to this study, where they try to identify difference between the theory and the perceived reality of firms active in the field.

A third possibility is to replicate this research but with a larger number of respondents from a larger population. This would allow for additional insight into the haulage contractor industry and could provide with more thorough analysis with a more in-depth discussion.

As this study has touch the point of sustainability related to high consumption and increased transportation, discussed among other points from the perspective of ethics it would therefore be interesting to study those points separately in the context of Sweden as cultural differences in countries can have implications on ethics, sustainability and consumption. So, this is another are of study that is recommended by this study.
7.8 Truth criteria - Reliability, Validity, Credibility and Dependability

In social sciences, there are four fundamental truth criteria to take into consideration, according to Bryman et al (2011, pp.90-91) and Collis & Hussey (2014, p. 172). Those are Validity, Reliability, Credibility and Dependability.

Validity estimate the connection between gathered data and drawn conclusions: In order for a study to have high validity, any conclusions should correspond to the gathered data and the sample. To put it in simple, do the study examine what it is supposed to examine and can if it can be applied to the population.

The sample and empirical data have been specifically chosen to provide insight into the population. Although it can be argued that the sample is too small for practical application, based on the attributes of the sample it is considered to be sufficient. As a result, validity is considered acceptably high.

Reliability discuss if the result of the study could be replicated in future similar studies. Reliability in this study is seen as low for several reasons. For once, the sample is small with provide inherent limitations to its applicability. Second, the respondents are anonymous so future research will not be able to follow or ascertain the information present in this study. This study also makes use of qualitative data that, despite efforts to present the data and reasoning objectively, is ultimately up to the interpretation of the researcher. For these reasons stated, despite effort to increase reliability, it is to be considered low.

Credibility is the question of whether a subject been identified and described. Credibility can be considered low but acceptable for several reasons. Many criteria include using a variety of methods to examine a subject such a using different methods to gather data, collecting data over different periods of time and if a researcher have been involved with a subject for noticeable span of time. This study does not fulfil criteria. It fulfils it on one point, using different sources to examine the subject. The reason this acceptable is because the inherent limitations of this study. It does not have the time to examine the subject for a long period of time. As such, multiple sources are the only criteria that this study this study is able to fulfil from a practical standpoint.

Dependability is the question if research is systematic and well documented. This considered fulfilled as the data substantial and the study at large is modelled and follow that model and structure throughout the study. The research follows a consistent pattern throughout the study. Efforts are made to document actions that impact the study. It is difficult to evaluate if the data gathering is systematic considering the nature of unstructured interviews. Considering these points, dependability can be considered high for this kind of study.
References


Choe, T., Rosenberger, S., Woolfolk, J (2015). Rethinking profitable growth in the transportation industry. When efficiency is no longer enough. Deloitte. [Publication]


EUROPAPARLAMENTETS OCH RÅDETS FÖRORDNING (EG) nr 561/2006 (2006, Mars 15). Om harmonisering av viss sociallagstiftning på vägtransportområdet och om ändring av rådets förordningar (EEG) nr 3821/85 och (EG) nr 2135/98 samt om upphävande av rådets förordning (EEG) nr 3820/85. Available via:


Myers, S. C., Majluf, N. S (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221. [https://doi.org/10.1016/0304-405X(84)90023-0](https://doi.org/10.1016/0304-405X(84)90023-0)


SCB (n.d). SCB:s branschnyckeltal. SCB
Available via: https://www.scb.se/vara-tjanster/branschnyckeltal/
[Retrieved 2019-04-04]

Available via: https://www.scb.se/hitta-statistik/statistik-efter-
amne/naringsverksamhet/naringslivets-
investeringsar/investeringsenkaten/pong/statistiknyhet/investeringsenkaten-februari-20182/
[Retrieved 2019-06-10]

[Retrieved 2019-04-04]


[Retrieved 2019-05-17]

[Retrieved April 30, 2019]


Sveriges åkeriföretag (2016). Fakta om åkerinäringen. Sveriges åkeriföretag
[Retrieved 2019-05-18]

Available via: https://www.svt.se/nyheter/amne/Poststrulet
[Retrieved 2019-04-04]

Available via: https://knowledge.wharton.upenn.edu/article/what-drives-disruption/
[Retrieved 2019-05-13]


### Appendix

**Interview guide:**

<table>
<thead>
<tr>
<th>Teman</th>
<th>Frågor</th>
<th>Syfte</th>
</tr>
</thead>
</table>
| **Situationen i åkeribranschen** | 1. Hur ser branschen ut just nu?  
2. Vilka utmaningarna möter ni i åkeribranschen när det gäller:  
- köpvanor av modern köpare;  
- teknologisk utveckling;  
- lagstiftning;  
- konkurrens;  
- resurstillgänglighet och deras priser  
- Företagstorlek;  
- Ägarstruktur? | 1. Inledande frågor för att starta diskussionen och få en insyn i hur den intervjuade ser på situationen i branschen, först med generella och sedan i mer specifika termer;  
1.1 Huruvida för exempel:  
- köpvanor har ändrat sina köpvanor;  
- teknologisk utveckling har skapat obalans i industrin;  
- lagstiftning skapat osund konkurrens  
- om det finns brist på arbetskraft och andra resurser;  
- om företagstorleken skapar problem för implementering av nya teknologier och konkurrensförmåga;  
- om ägarstrukturen (statlig/institutionell vs privat/familjeägd) påverkar företagens ageranden;  
2. Att få den intervjuade att diskutera företagets nuvarande situation gentemot situationen i branschen. |
| **Hur företag möter utmaningar i åkeribranschen när det gäller investeringar i nya teknologier** | 5. Hur ser ni på den teknologiska utvecklingen i branschen?  
6. Hur har ni anpassat er till den teknologiska utvecklingen?  
Mer specifikt vad använder ni för typ av tekniska lösningar på ert företag när det gäller:  
- hantering av lager,  
- lastbils utrymme,  
- logistik,  
- transportering,  
- personal  
- eller göra prognoser etc?  
7. Vad tycker ni om till exempel hur färdskrivare bidrar till eller sänker er produktivitet, flexibilitet, kostnader? Hur tycker ni detta system fungerar | Syftet med dessa frågor är:  
1. Att se om Respondenten är informerad om teknologiska utvecklingen i åkeribranschen och i relaterade industrier;  
2. Att ta reda på hur framstående är företaget teknologiskt i jämförelse till andra inom åkeribranschen och stödjande industrier;  
3. Att se huruvida företaget samarbetar teknologiskt för att effektivisera verksamheten för alla parter;  
4. Att se huruvida företaget investerar intensivt i nya teknologier och vilka är motiveringarna bakom investeringsbeslut;  
5. Att se huruvida det finns några hinder för dessa investeringar så |
| Herr/Herrinn | generellt i jämförelse till tidigare system?  
8. Hur avgör ni hur ni investerar i teknologier? Vad är viktigt när ni investerar?  
9. Tycker ni att företaget får konkurrensfördel givet implementering av nya teknologier eller kan det verka tvärtom?  
10. Vad är utmaningen med att investera i teknologier för eft företag? Skulle ni ha investerat i ny teknik om ni hade möjlighet? (om ej investerat)  
11. Även om ni inte har investerat i nya teknologier eller inte är intresserade av att göra det i framtiden har ni blivit kontaktade av andra företag i branschen för samarbete med krav av att implementera visa specifika teknologier för att göra samarbetet enklare och effektivt?  
| Svar | som brist på finansiering, komplexitet av implementering av nya system baserat exempelvis på storlek av företaget och/eller brist på kunskap, erfarenhet och beredskap av personalen eller rädda från management eller anställda att föröra redan existerande maktrelationer eller inkomstkällor pga för exempel automatisering;  
6. För att se om företagen ser de möjliga negativa aspekterna med implementering av nya teknologier eller inte.  
7. Att se om det finns press från industrin att investera i nya teknologier.  
| 12. Investerar ni i personal och i så fall hur eller i vilka områden (exempelvis utbildning för förare och/eller managers)? Hur tycker ni företagets anställda är rustade för branschens utmaningar? Vad avgör om du bestämmer dig för att utbilda personal?  
| 1. Att se om företaget investerar i sin personal för att hantera problemet gällande brist på arbetskraft samt ta reda på andra faktorer som är avgörande för beslut att investera i personalstyrkan.  
| 13. Samarbetar ni med konkurrenter eller andra aktörer i branschen som levererar logistiktjänster, supply chain management och/eller transporttjänster, som en alternativ till att investera i nya teknologier i sitt eget företag? I så fall vilka av dessa områden har ni samarbetat runt och hur har det gått till? Har ni någonsin investerat i olika projekt med era partners?  
14. Har ni någonsin delat med er av era tillgångar eller teknologier såsom bilar,  
| Om man istället bestämmer sig att använda sig av partnerskap istället för att fokusera mer på investeringar i teknologiskt utveckling i så fall är syftet med denna fråga att förstå: 1. Hur denna partnerskap/samarbete yttar sig, om det gäller delning av vissa tjänster, eller leasing av bilar, outsourcing av logistik eller supply chain management eller om man investerar kanske i gemensamma distributionsterminal för att effektivisera verksamheten och huruvida anser man de vara lönsamma;  
| 15. Hur företag möter utmaningar i äkeribranschen när det gäller investeringar i personal?  
16. Investerar ni i personal och i så fall hur eller i vilka områden (exempelvis utbildning för förare och/eller managers)? Hur tycker ni företagets anställda är rustade för branschens utmaningar? Vad avgör om du bestämmer dig för att utbilda personal?  
| 1. Att se om företaget investerar i sin personal för att hantera problemet gällande brist på arbetskraft samt ta reda på andra faktorer som är avgörande för beslut att investera i personalstyrkan.  
| 17. Samarbetar ni med konkurrenter eller andra aktörer i branschen som levererar logistiktjänster, supply chain management och/eller transporttjänster, som en alternativ till att investera i nya teknologier i sitt eget företag? I så fall vilka av dessa områden har ni samarbetat runt och hur har det gått till? Har ni någonsin investerat i olika projekt med era partners?  
18. Har ni någonsin delat med er av era tillgångar eller teknologier såsom bilar,  
| Om man istället bestämmer sig att använda sig av partnerskap istället för att fokusera mer på investeringar i teknologiskt utveckling i så fall är syftet med denna fråga att förstå: 1. Hur denna partnerskap/samarbete yttar sig, om det gäller delning av vissa tjänster, eller leasing av bilar, outsourcing av logistik eller supply chain management eller om man investerar kanske i gemensamma distributionsterminal för att effektivisera verksamheten och huruvida anser man de vara lönsamma;  
| 19. Hur företag möter utmaningar i äkeribranschen från perspektiv av samarbete  
| |

| Vad tycker ni om dessa (Specifika) frågor om vi antar | Ifall frågorna inte är relevanta för små företag | Syftet med en sådan formulering av frågan är att se huruvida småföretag har koll på de stora utmaningar för företaget. | Ifall frågorna inte är relevanta för små företag | Syftet med en sådan formulering av frågan är att se huruvida småföretag har koll på de stora utmaningar för företaget. |
**Models and tables:**

Figure 1: Model summarizing the Industry challenges

![Image of the model summarizing the Industry challenges]

- **Macroenvironmental challenges**
  - Legislation
  - Customer behaviour
  - Technological developments
  - Reversed outsourcing
  - Economic situation
  - Price elasticity of demand

- **Microenvironmental challenges**
  - Industry structure
  - Customer behaviour
  - Technological developments
  - Legislation

- **Organizational challenges**
  - Ownership structure and company size

**Color indicators of the categories of challenges in the model above:**

- Challenges under the company control
- Challenges difficult to influence
- Challenges mostly outside of the company control

Figure 2: The initial model based on the literature review
Figure 3: The final model
Table 1:

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Role</th>
<th>Company age (year)</th>
<th>Time (minutes)</th>
<th>Location of firm</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent 1</td>
<td>Owner/CEO</td>
<td>&lt;100</td>
<td>24</td>
<td>Trelleborg</td>
<td>Phone</td>
</tr>
<tr>
<td>Respondent 2</td>
<td>Chief distribution area chief</td>
<td>&gt;100</td>
<td>57</td>
<td>Sverige</td>
<td>Face-to-face</td>
</tr>
<tr>
<td>Respondent 3</td>
<td>Owner/CEO</td>
<td>&lt;5</td>
<td>47</td>
<td>Stockholm</td>
<td>Phone</td>
</tr>
<tr>
<td>Respondent 4</td>
<td>Representative</td>
<td></td>
<td>110</td>
<td>Umeå</td>
<td>Face-to-face</td>
</tr>
<tr>
<td>Respondent</td>
<td>Personnel</td>
<td>&lt;70</td>
<td>15</td>
<td>Trelleborg</td>
<td>Phone</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------</td>
<td>-----</td>
<td>----</td>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td>Respondent 5</td>
<td>Personnel</td>
<td>&lt;70</td>
<td>15</td>
<td>Trelleborg</td>
<td>Phone</td>
</tr>
<tr>
<td>Respondent 6</td>
<td>Owner/represe ntative</td>
<td>30</td>
<td>Stockholm</td>
<td>Phone</td>
<td></td>
</tr>
<tr>
<td>Respondent 7</td>
<td>Owner</td>
<td>&lt;5</td>
<td>20</td>
<td>Tomelilla</td>
<td>Phone</td>
</tr>
</tbody>
</table>