Customers' selection criteria for third-party logistics providers

Setting the framework for conducting an empirical research

Kunders selektionskriterier for tredje parts logistik udbydere

Opsætning af rammebetingelserne for at foretage en empirisk undersøgelse

Master's Thesis

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Sammenfatning

Markedet for tredje parts logistik udbydere (3PL) udvikler sig i takt med den stigende efterspørgsel fra kunder efter mere differentierede og komplekse logistik løsninger. De ønsker igennem tilpassede outsourcing logistik løsninger at opfylde markedets efterspørgsel efter at blive mere konkurrencedygtige, for derigennem at opnå forbedringer i kvalitet, effektivitet og omkostningsbesparelser takket være kapaciteten hos den valgte 3PL.

Det er derfor vigtigt præcist at undersøge, hvilke selektionskriterier der findes for valget af 3PL-udbyder fra kundernes perspektiv for, at kunne tilbyde en opdateret forretningsmodel og positionerings strategi for 3PL, der tilpasser 3PL´s tilbud til kundernes efterspørgsel.
Formålet med dette speciale er at udvikle rammen til at undersøge den ovenfor nævnte problemstilling.

Baseret på den teoretiske ramme for *3PL factory* versus *3PL lernstatt* og teorien om *triple bottom line,* er to hypoteser blevet opstillet, der søger at afdække til hvilken grad udvælgelseskriteriet for valget af 3PL kan splittes op i en ren factory-type (standardized) eller i en ren lernnstatt-type (innovative and customized), og om bæredygtigheds kriteriet har en indvirkning overhovedet.
Fokus for dette speciale er at udvikle en ramme til at gennemføre en empirisk kvantitativ europæisk undersøgelse. For at gøre dette udviklede forskeren et spørgeskema-værktøj, som har været pre-testet af brugere af 3PL. Respondenterne udfyldte online-spørgeskemaet og sendte derefter feedback omkring strukturen og forståligheden af spørgeskemaet via email. Yderligere relevant feedback blev indhentet gennem andre kanaler.

Det vigtigste udbytte af dette speciale, er udviklingen af den forbedrede version af spørgeskemaet, der er blevet modificeret i forhold til den modtagende feedback. Dette vil muliggøre færdiggørelsen af forskningsprocessen.
Det empiriske resultat, med forbehold for dets begrænsninger, har indikeret en brugertendens mod at vælge en hybrid form af 3PL ved at have begge kapaciteter til at producere standardiserede og customized services. CSR er vigtigt, men ikke et afgørende kriterium i udvælgelsen af 3PL.

Begrænsningen ved forskningen relaterer sig til det lille antal respondenter, der pre-testede spørgeskemaet og til det faktum, at forskningen ikke blev udført i hele sin proces.

På trods af det, ligger den oprindelige værdi af forskningen i det faktum, at der er blevet skabt et nyt originalt spørgeskema-værktøj, som kan bruges til at opsamle nye opdaterede empiriske data omkring emnet om tilpasning af kunders udvælgelseskriterier ift 3PL og 3PL positionering. Det vil bidrage til at skabe ny viden og til at studere både kunders perspektiv og 3PL's positionering. Det kan udvides til et studie af de relative spørgsmål i forbindelse med markedsføring positionering strategier.

List of Figures and Tables

Figures

Tables

Table of Contents

1 Introduction

Over the last three decades the market for third party logistics providers (3PL) has markedly changed. What drove the changes has to be found in the increasing globalization, in the requests for more customized solutions to fulfill the complexity of the market´s demand, the consciousness of the advantages derived from supply chain integration and thereby the complexity of the outsourced logistics services (Hertz & Alfredsson, 2003), (Andersson & Norrman, 2002).

As a consequence of those changes, third party logistics providers need to understand the complexity of the new value-adding outsourced services in order to better meet and suit their customers´ requests (Andersson & Norrman, 2002).

What emerges from literature is that even if cost saving is still an important value-adding mechanism to the customer as well as one influent criterion for purchasing 3PL, often it is not the most important cause for outsourcing. Value-adding mechanisms to the customer as flexibility and the possibility to concentrate on core competences, quality improvement and innovation gained through the expertise and stimulus of the logistics providers, become more and more important cause for outsourcing 3PL services, being strategic tools for competitive advantage (Andersson & Norrman, 2002); (Anderson, Coltman, Devinney, & Keating, 2011); (Prockl, Pflaum, & Kotzab, 2012); (Skjoett-Larsen, 2000).

Thereby it is essential to 3PL providers and their right positioning on the market segment they want to serve, to take strategic positioning choices, reflected and explained in their business model, which encompass the customers´ priorities.

The latter matches well with the field of interest of the author and, together with the strong interest in logistics, supply chain management and sustainability, inspired this thesis´ research question.

There are not many studies presenting categorization of 3PL providers (Hertz & Alfredsson, 2003), on the contrary it has been paid more attention to the customers´ perspective about the selection criteria for 3PL.

The purpose of this research project is to combine the two things, setting and developing the framework for carrying out an empirical quantitative European study to investigate the customers´ selection criteria for 3PL and, based on the findings, propose a positioning strategy and a business model to contract logistics providers. The selection criteria are going to be investigated in relation to the theoretical model for 3PL factory and 3PL lernstatt from Prockl

et al. (2012), and in relation to environmental and social sustainability practices. Integration power and sustainable supply chain competitiveness characterize the choice of this delimitation. That will be explained in the following section.

The next section will present the problem formulation and the research´s objectives.

1.1 Problem formulation and research's objectives – broader focus

In order to gain competitive advantage on the fast growing market, firms can beat their competitors lowering costs or differentiating themselves (Porter, as cited in Hooley, Piercy, & Nicoulaud, 2012). Outsourcing, which has become more strategic in the last years (Skjoett-Larsen, as cited in Perepelkina, 2013) can be a winning decision for a firm and its supply chain, providing a competitive advantage according to one of the two last mentioned criteria highlighted by Porter. Thereby, selecting the right 3PL is of crucial importance to customers on one side, while on the other side, understanding the more complex requests from customers is of crucial importance to 3PLs for their positioning on the market. The latter points out the interdependence of the two factors and the importance of understanding each other's needs to shape strong business relationships which enable both actors to become more competitive at a supply chain level.
As a consequence of that, the research question and two working questions have been formulated as follow:

Based on which criteria do customers select their third party logistics providers?

Working questions:

- *Does the theoretical model for 3PL factory and 3PL lernstatt proposed by Prockl et al. match the empirical findings about the customers´ selection criteria for 3PL?*
- *Do social and environmental sustainability-criteria affect the choice of the customers when selecting 3PL?*

1.1.1 Research delimitation and objectives

Delimitation: as shortly described in the introduction section, in order to be able to suggest a positioning strategy and a business model to 3PL providers, this research wants to investigate the selection criteria for 3PL from a customers´ perspective. The criteria are going to be

investigated in relation to two main parameters: the theoretical model for 3PL factory and 3PL lernstatt from Prockl et al. and environmental and social sustainable practices.
The paper from Prockl et al. (2012) shows a providers´ perspective, where four types of 3PLs are differentiated based on a matrix combining the variables "integration power" and "knowledge orientation": Conventional Plus, Cherry Pickers, Service Factory and Service Lernstatt. The authors provided specifications about the 3PL´s value propositions to the customers and the value creation architecture, thus how they fulfill the value propositions. The focus of this research on 3PL factory and 3PL lernstatt is due to the fact that these 3PLs utilize their resources as parts of a system, highlighting the importance and power of integration to gain supply chain competitive advantage. They though differentiate in property based resources (factory) and knowledge based resources (lernstatt) and the degree of interaction with the customers to produce the services.

Sustainability, which is also seen as a way to reach competitive advantage (Carter & Rogers, 2008), is a topic which has gained increased importance at a supply chain level, where CSR practices are often requested and monitored along the supply chain. The author intends to investigate if the increased attention that sustainability has gained reflects in proactive sustainable practices along the supply chain and especially between customers and their 3PLs.
Geographical delimitation: the author wants to delimit the research to the geographical area of Europe. The explanation is based on the assumption that then it will be easier for a Europe-based researcher to carry out the whole research process. On the other side, the developed questionnaire is not specific bonded to Europe in any way and thus it can be utilized to investigate the research topic independently from geographical restriction.

Research objectives: regarding the first parameter, the researcher wants to investigate if the customers´ selection criteria for 3PL, investigated with reference to a specific project, match the general model proposed by Prockl et al. or not. A project is understood as a relationship between a client, a service provider and a package of services. Briefly, In order to do that, the researcher is going to investigate if the customers´ selection criteria are distinctly more oriented towards efficiency, effectiveness, standardization and cost cutting (factory) or towards innovation, cooperation and customer orientation (lernstatt). The author will additionally investigate the customers' choice for the type of management of the whole logistics network in a relationship with a 3PL: how far is that characterized by either separated domains or by shared solutions and linkages between customer and provider. A hybrid form of

management could eventually be preferred according to the complexity of the outsourced services. The theoretical framework for 3PL factory and 3PL lernstatt is illustrated in depth in chapter 3.

Regarding the second parameter, the researcher wants to investigate if sustainability-criteria do influence the customers' choice for 3PL´s selection or not. That will show if customers see a possibility for potential competitive advantage in sustainable practices at a supply chain level.

In order to investigate the above mentioned objectives, the researcher developed and pre-tested a questionnaire tool for online utilization to gather empirical data, which can confirm or void the model from Prockl et al. and test the importance of sustainability criteria. The questionnaire's pre-testing process will investigate if the developed tool can provide valid, reliable, unbiased and complete findings (Collins, 2003). The findings want to be generalized to the selected population in order to propose an improved business model and positioning strategy to 3PL providers.

In fact, even if the theoretical framework from Prockl et al. should be confirmed, the positioning strategy could be implemented by adding strategic considerations regarding sustainability practices.

1.1.2 Thesis' narrow focus and related research question

Because of time and resources restrictions, it has not been possible to carry out the whole research process.

The disadvantage of not having access to a "ready to use" sampling frame has penalized the researcher and it has guided the decision to put the focus of the thesis on the first steps of the whole process, that is the development of the questionnaire and the pre-testing process.

According to the narrow thesis' focus, the researcher will try to answer the following research question:

Does the developed questionnaire tool serve its purpose?

The author will answer this question and according to the pre-test analysis she will eventually propose an improved version of the questionnaire.

In order to develop the questionnaire the author needed to have a clear picture of what the objectives of the broad research were. That was necessary in order to develop the right questions. In fact each question in the questionnaire has to be there in order to contribute to answer the research problem (Rowley, 2014).

Summarizing, the broader scope of the research topic is to investigate the customers' selection criteria for 3PL in order to be able to propose a positioning strategy to 3PL providers. The narrow focus and purpose of the thesis is to develop the instrument to carry out the research, and that is a pre tested questionnaire, which suits its purpose.
The process of the pre-testing is essential to avoid the misunderstanding of the questions or the creation of inadequate responses' options (Sue & Ritter, 2011). Pre-testing ensures validity and it tests if all respondents do understand the questions in the same way and in the same way the researcher understand it and if the questions make sense for them. Two major cognitive methods can be utilized in order to pre-test a questionnaire: think-aloud or probing (Collins, 2003). That will be explained in depth in the chapter of the pretesting.

1.1.3 Objectives of the whole research in bullet points

- Investigate the customers' selection criteria for 3PL providers.
- Delimit the investigation to two parameters: the model for 3PL factory vs 3PL lernstatt from Prockl et al. and sustainability criteria.
- Formulate two hypotheses that can help investigating the two delimiting parameters.
- Develop a questionnaire tool that can test: the theoretical framework from Prockl et al. to see if this theoretical distinction matches the empirical results; and test the influence of sustainability criteria for the choice of 3PL.
- Pre test the questionnaire in order to ensure validity to the findings.
- Answer the narrow research question and eventually improve the questionnaire according to the pre-test analysis.
- Try to sketch the overall direction of the customers' preferences according to the responses obtained with the pretest – broader research question.
- Collect and analyze data
- Propose a positioning strategy and business model to 3PL

The two last points will be completed in a second time, when the research will be fully carried out.

1.2 Deeper understanding of the research problem

With their conceptual paper, "3PL factories or lernstatts? Value-creation models for 3PL service providers", Prockl, Pflaum and Kotzab (2012) wanted to serve 3PL providers with a tool to rethink, analyze and eventually modify their actual business model by providing them with a generic theoretical framework for 3PL classification and the relative different value architecture used to fulfil value propositions to the customers.
The theoretical framework puts the focus on a clear separation between 3PL factories and 3PL Lernstatts, where factory-related services are produced in a more standardized way and lernstatt-related services are produced in a more innovative way. 3PL providers with different capabilities will be able to produce the different services categories. However It can be expected, that the customers' priorities for the choice of 3PL will show preferences of both kinds of 3PL at the same time, a hybrid model, driving to the problem of the identification of a new positioning strategy and business model for 3PL.

Because of the complexity of the market, the complexity of the outsourced services and the variety of customers seeking for different solutions, which can provide them with a superior value creation and differentiation mechanism, not only based on cost cutting, it can be difficult to handle increasingly complex services, typically offered in bundles of more services, making a clear distinction between service factory and service lernstatt. Examples can be the increasing trend of customers who want to achieve value-adding from the outsourcing of entire logistics processes and logistics providers who want to expand their service offerings to gain market share and achieve differentiation advantage (Prockl, Pflaum, & Kotzab, 2012) (Stauss & Jedrassczyk, 2008).

According to the preliminary direction of the results collected in the pretesting, the author will analyze and address the problem in depth in the discussion section.
The questionnaire created and pre-tested for this thesis is a tool, which can be applied to empirically investigate if there is a match between the actual customers´ selection criteria for 3PL and the business models, value propositions to the customers and fulfillment structure, identified from Prockl, Pflaum and Kotzab for 3PL factory or 3PL lernstatt. Or if the customers' selection criteria prioritize attributes and managerial aspects from both types of 3PL at the same time.
The results emerging from the research, once carried out in its whole, can eventually help to further develop the conceptual work from Prockl, Pflaum and Kotzab and to fill the gap in

literature, combining 3PL categorization and positioning and customers´ perspective for the choice of 3PL in a single research paper.

In addition to that the questionnaire created for carrying out the research is going to investigate the importance that social and environmental sustainability criteria play in the selection of 3PL. In fact the issues emerging from global sourcing encompass supply chain management issues as well as social and ethical issues. In order to face social pressure that wants to see firms acting as a good corporate citizen, firms involve in Corporate Social Responsibility´s voluntary practices (CSR) to secure social and environmental responsible business along the supply chain (Andersen & Skjoett-Larsen, 2009), (Pedersen & Andersen, 2006), (Mamic, 2005).
Also, sustainability reporting has become a common practice for most of the world's largest companies (Global Reporting Initiative) and in some countries like Denmark it is a low-regulated practice for large companies (Pedersen et. al 2013). The aim of CSR reporting is to bring consciousness to firms about the social and environmental issues of their business through reporting on several standards. That could help firms to pay more attention on such topics, seeing them as possibilities to gain competitive advantage as the triple bottom line theory highlights (Carter & Rogers, 2008). Being such practices still considered cost expensive and difficult to evaluate in term of return benefits (Perotti et al. 2015), the compromis between sustainability and cost is an interesting topic to investigate.

1.3 Background

This paragraph, with its three sub-sections, has the aim of providing an overview of the most important concepts related to this research topic. This background knowledge is especially important for those readers, who are interested in the thesis but maybe don´t have the same familiarity with the field of logistics and supply chain as a professional.

1.3.1 What is a 3PL provider?

According to literature there is a large variety of definitions for 3PL providers (Marasco, 2008): broader definitions as the one from Lieb and the one from Coyle et al. say that 3PL providers are external companies that perform all or part of a firm´s logistics services, which were performed in house before (as cited in Marasco, 2008). Narrower definitions, according to Marasco (2008) and Selviardi & Spring (as cited in Prockl et al. 2012) relate the concept of 3PL

to specific aspects of the logistics outsourcing and highlight different aspects as e.g. the extent of the 3PL´s responsibility in the service production process, the characteristics of the relationships between customer-provider, the service offering and more.

According to the author, in relation to this thesis and its scope, a fitting way of defining and explaining what a 3PL is, is to combine the definition about the scope of the 3PL business and 3PL relationship with the customer, as in Prockl et al. (2012), and the definition of the relationship between 3PL provider and customer from Bowersox et al. (as cited in Skjoett-Larsen 2000). The outcome of this combination can be the following: A 3PL provider is an external firm offering to the customer basic logistics services as transportation and warehousing in combination with bundles of more complex and value adding logistics services, with a different degree of customization. The relationship between customer and 3PL provider tends to be a long term relationship and not only based on the single transaction (cited in Prockl et al. 2012). With an increasing degree of integration of the service agreements and the increasing level of commitment from the parties, the relationship can escalate from one based on management of separate domains and standard logistics solutions up to one based on cooperation management and tailored logistics solutions according to the customer´s request. Single transaction based on arm´s length relationships are not taken into account here. (Bowersox et al. as cited in Skjoett-Larsen 2000).

1.3.2 What is a business model?

According to the broader scope of this research, that wants to investigate the customer´s selection criteria for 3PL in order to propose a positioning strategy and a business model to logistics service providers, it is important to understand what is meant with the concept of business model in order to have a guideline, when answering the research question. According to literature there are a lot of more or less comprehensive definitions for business model, but no one has been adopted as the general one so far. Some, e.g. focalize on the importance of business network and relationships between the actors and some include other aspects as the monetary aspect and more (Fielt, 2013) (Shafer, Smith, & Linder, 2005). Here below the author provides two definitions /explanations about what a business model is, according to Prockl et al. (2012) and Timmers (as in Fielt, 2013). Prockl et al. explained their idea of business model, as they utilized it in their paper, as a framework combining value propositions to the customer and value architecture, which is the way of fulfilling value

proposition, bounded together by revenue mechanisms. The second definition from Timmers (as cited in Fielt, 2013 p.87) highlights the importance of business network relationships and the possibility of mutual benefits for the actors. These last two parameters are very important in relation to two major topics of the thesis: the concept of supply chain and the relationship customer – provider.
Timmers' definition of a business model is: "An architecture for the product, service and information flows, including a description of the various business actors and their roles; and a description of the potential benefits for the various business actors; and a description of the sources of revenues."

The concept of business model, according to Shafer et al. (2005) is separated from the concept of strategy, which instead can be seen as strategic positioning choices in order to seek for differentiation on the market. The role of business model, instead, is to help communicating and explaining these choices. A business model become an important tool for understanding and eventually corrects the strategic choices, which have already been taken (Shafer, Smith, & Linder, 2005).

1.3.3 The Supply Chain

The understanding of the concept of supply chain is essential to this paper, in that the research topic has its fundament in the existence of supply chain as a business phenomenon.

According to Mentzer et al. (2001 p. 4) a supply chain is: "a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances and information from a source to a customer."
Mentzer et al. (2001) distinguish between three types of supply chain: basic, extended and ultimate supply chain, where the last model is the one relevant for this thesis.

Figure 1: Ultimate supply chain. (Mentzer et al. 2001 p.5)

The ultimate supply chain is the most complex type, where all actors, from the ultimate supplier to the ultimate customers, involved in all upstream and downstream of services,

products, finance and information, are included. The ultimate supply chain comprehends in its complexity the presence of third-party firms as financial providers or logistics provider, which perform services between two of the companies (Mentzer, et al., 2001).

Here below there is a presentation of the characteristics of a supply chain as highlighted by Houlihan (as cited in Skjoett-Larsen et al., 2007 p. 25):

- The supply chain is a complete process for providing goods and services to final users.
- Membership includes all parties, including logistics operations from initial material supplier to final user.
- The scope of supply chain operations includes procurement, production and distribution.
- Management extends across organizational boundaries to include planning and control over operations of other organizational units.
- A common information system accessible to all members makes coordination possible between organizations.
- Member organizations achieve their own individual objectives through the performance of the supply chain as a whole.

1.4 Original value of the thesis

The contribution of this thesis in the field of supply chain and third-party logistics is relevant in numerous ways. The first aspect is related to the questionnaire tool developed by the author. The questionnaire, which has been pre-tested and implemented, represents an effective instrument to investigate the customers' selection criteria for 3PL, giving the possibility to propose updated positioning strategy to 3PL. The tool is directly available in the thesis and thus it can be used by practitioners or other researchers interested in investigating this topic. In addition, the delimitation of the research to the two well explained parameters, namely the contrast between 3PL service factory vs 3PL lernstatt and the importance of CSR, keep the focus of the investigation narrow and foster accuracy.

Once the research will be completed and carried out in its full process, it will contributes to the literature spectrum, by presenting both an investigation of the selection criteria for 3PL from a customer's perspective and a positioning strategy and business model to 3PL. Indirectly the thesis contributes to highlight important topics related to the research problem, as the issues

that 3PL will face in managing the new business model, if the results should confirm the hybrid preferences from customers.

2 Theoretical framework and hypotheses formulation

According to the deductive approach applied in this thesis and attempting to respond to the research and working questions, two hypotheses have been formulated. The formulated hypotheses can be empirically tested through the survey questionnaire.

Hypotheses are an attempt to respond to the research question and are based on two kinds of variables: independent and dependent variables. Knowing the behavior of the independent variable allows predicting the behavior of the dependent variable. With the empirical testing of hypotheses it is possible to say if the stated relationship between facts is truth or not (Abbott & McKinney, 2013).

2.1 Theoretical background for the first hypothesis formulation

The first hypothesis tries to answer the first working question:

- *Does the theoretical model for 3PL factory and 3PL lernstatt proposed by Prockl et al. match the empirical findings about the customers´ selection criteria for 3PL?*

Here it will follow a presentation of the main theory and literature involved in the hypothesis formulation process.

The theoretical framework of 3PL factory and 3PL lernstatt

The background, theory and reasoning, for the formulation of the first hypothesis is primarily based on the theoretical framework created by Prockl, Pflaum and Kotzab (2012) for the categorization of 3PL.
Here below is a presentation of the findings of their research and an explanation of how it affects the hypoteis formulation.

Based on a matrix which variables are "*knowledge orientation*" on the vertical axis and "*integration power*" on the horizontal axis, Prockl, Pflaum and Kotzab identify four types of 3PL services.

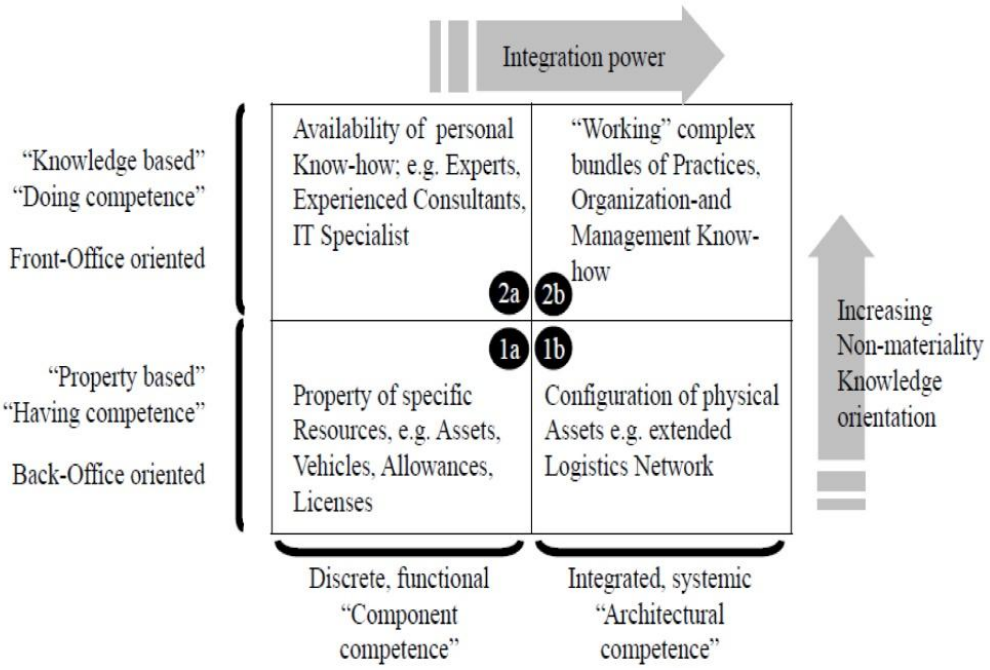

Figure 2: "Capabilities matrix for 3PL services" Prockl, Pflaum and Kotzab (2012 p. 551)

These services require different capabilities to be produced and the different capabilities characterize the different types of 3PL providers being able to provide these services. According to figure 2, the 3PL service in the left lower quadrant is called Conventional Plus, the upper left quadrant represents the 3PL Cherry Pickers, the lower right quadrant represents the 3PL Factory and the upper right quadrant represents the 3PL Lernstatt.
The choice of the two variables used from Prockl et al. (2012) "knowledge orientation" and "integration power" has the background respectively in the Resource Based View theory (RBV) and in the concept of "discrete" vs "systemic" resources (Miller & Shamsie, in Prockl et al. 2012).

RBV distinguishes the resources of a company in "property based" resources or tangible resources and "knowledge based" resources or intangible resources. This distinction permits companies to differentiate their strategies to seek competitive advantage depending on their capabilities (Miller & Shamsie in Prockl et al. 2012).
The concept of "discrete" vs "systemic" resources wants to highlight the difference between resources not being part of an integrated system vs resources that play a role in an integrated system or network. The advantage of systemic resources, organized and interacting in a system, is that they are difficult to imitate (Prockl et al. 2012).

In addition, the matrix in Figure 2 shows a differentiation between “back office” services vs “front office” services based on the customer contact theory. This concept is important to understand the classification of 3PL services made from Prockl et al. in that it explains how far the services require customer interaction for their production. Back office services do not require customer interaction, while front office services are provided in cooperation with the customer (Chase, in Prockl et al. 2012).

From more back-office oriented, “property based” and “less integrated” to front-office oriented, “high integrated“ and more “knowledge based”, the four types of 3PLs differ in the way they interact with their customers and in the type and complexity of the services offered and the relative different managerial aspects. The focus on the 3PL factory and 3PL Lernstatt has the objective to investigate how far the value-adding to the customers derives from services offered by a provider which applies own resources to offer high efficieny, performance and standardization based on the management of separate domains (3PL factory) or the value-adding to the customers derives from more complex services which require cooperation management with the customer for their development, where innovation and customization are attributes that are going to influence both the domain of the provider and the customers´(3PL Lernstatt).

The generic business models for 3PL Factory and 3PL Lernstatt are divided in five different layers that cover the entire logistics network and highlight the manner of how they fulfil their value propositions to the customers.

Here below, table 1 shows a comparison between the two business models.

Generic business model	3PL Factory	3PL Lernstatt
Physical network	Efficient management of homogeneous networks	Agility, flexibility, customer orientation
ICT network	Data transfer, efficient own ICT	Interlinked ICT
Social network	Performance capability	Trust relationships, collaboration
Institutional network	Control of own domains	Intense mutual linkages, cooperation
Financial network	Competitive prices	Share of costs and profits, “open book”, transparency

Table 1: Generic business model for 3PL factory and 3PL lernstatt. Author´s own creation based on Prockl, Pflaum, & Kotzab (2012 p.553)

The next section will present the complementary literature, which has been used in the hypothesis formulation.
At the end of the section, it will be presented how the theories play together and why they lead to the formulated hypothesis.

Complementary literature for the formulation of the first hypothesis

According to the previous section, we understand that 3PL services can differentiate according to the level of customer interaction with the 3PL in the service production, according to the level of knowledge orientation of the 3PL in the service production and the level of integration of the services.
That gives already an insight in the variety of services and the different capabilities asked to 3PL providers to produce these services.

In addition, a number of articles show both customers' perspective and 3PLs' perspective on which attributes are important when engaging in a relationship between customer and 3PL provider.
The attributes highlighted by customers, represent the capabilities and the way to fulfill value proposition to customers, which a 3PL provider should have in order to be chosen as a business partner. These attributes can be considered selection criteria.
Two articles reporting respectively the 3PLs´ perspective about "determinants of successful logistical relationships" and the customers´ perspective on "what drives the choice of a third-party logistics provider" have been chosen to enrich the reasoning behind the formulation of the first hypothesis.

The first article from Leahy, Murphy, & Poist (1995) "determinants of succesful logistical relationships: a third-party provider perspective" presents a study where twenty-five factors, estrapolated from previous studies for their importance in relationships between customers and 3PL, have been evalated again by 3PL companies for their importance. It has also been highlighted the three single most important factors.
The operational categories of the respondents were both assets based and non assets based. They provided services such as management of information and distribution system, EDI capability, management of performance reports but also more basical warehousing and more.

Table 2 lists the first five determinants factors in succesful relationships, according to the results of the research from Leahy et al.

First five determinants factors in succesful relationships with "great importance"	
Factor	**Factor´s meaning explanation**
Customer orientation	Customized or tailored services according to the buyer's needs.
Dependability	Services are provided in a consistent and reliable manner
Change orientation	Innovative – the provider can adapt to changing business environment
Timeliness	Services and information are provided to the buyer in a promptly and timely way.
Convenience	The provider is readily available, cooperative, and easy to conduct business with.

Table 2: First five determinants factors in succesful relationships. Author´s own creation based on Leahy et al. (1995)

Further down in the list of the factors with great importance there is also "cost saving". Adopting the categorization given by Prockl et al. for 3PL factory and 3PL lernstatt, and considering the explanation given by Leahy et al. for the factors in table 2, it could be possible to categorize the factors "customer orientation", "change orientation" and "convenience" as 3PL lernstatt attributes, while "dependability" and "timeliness" as factory 3PL attributes. These factors, according to the evaluation of the surveyed 3PL providers, are all important. That can be interpreted as 3PLs understand that more comprehensive service-offerings, where the clients are offered both efficiency and innovation through customization from the same provider, can be a strategic choice in the fast growing logistics market.

The second article from Anderson et al. (2011) about the drivers for the choice of third-party logistics providers highlights findings which show the customers' general preferences and the preferences divided per segment about seven selected attributes.
The research executed by Anderson et al. has surveyed firms in the Asia-Pacific geographical area by adopting the research method of the questionnaire build upon the theory of the Discrete Choice Analysis. That has given the possibility to analyze different levels of importance of each attribute.
Anderson et al. classified the respondents in three segments, but the first two are of major importance for this thesis. The first segment was characterized by those customers who prioritize attributes which require the cooperation 3PL-customer to produce value to the customer (Anderson et al. 2011). The second segment was characterized by those customers who prioritize big brands 3PL able to provide "proven solution" and who were more concerned about *price* (Anderson et al. 2011).
Adopting the categorization given by Prockl et al. for 3PL service factory and 3PL service lernstatt and understanding the segmentation given by Anderson et al. it could be possible to

categorize the first customers´ segment as customers prioritizing 3PL service lernstatt and the second customers' segment as customers prioritizing 3PL service factory (author´s own interpretation).
The first segment (lernstatt), gives importance to 3PL´s *reliable performance*, which can be explained as efficiency in the delivery process, and thus a more factory oriented type of attribute.
While the second segment, categorized as more factory oriented by the author of the thesis, gives importance also to *customer interaction and recovery*, which can be considered as more lernstatt attributes because of the importance of the relationship between customer and 3PL. The latter can be interpreted and understood as the preferences of the surveyed customers for a more comprehensive service offering from 3PL providers, showing capabilities for the production of both factory and lernstatt services at the same time.

Summarizing and analyzing the outcomes from the three researches illustrated above: it seems that a theoretical differentiation of 3PL services and providers capabilities, needed to produce the services, allow to distinguish between the two category of 3PL factory and 3PL lernstatt, but when empirically gathering data about the importance and the determinant factors for the choice of 3PL, both 3PL providers and customers come with a list of mixed attributes from both kind of 3PL factory and lernstatt unified (author´s own deduction).

Because of the complexity of the market, the complexity of the value adding mechanisms of the outsourced services and the variety of customers seeking for different solutions, the author highlights the doubt expressed in Prockl et al. (2012) and Stauss & Jedrassczyk (2008) that it could be difficult to make a clear division between the management of service factory and service lernstatt to handle the modern outsourcing trends.

As a consequence of that, the first hypothesis has been formulated:

Hypothesis 1

According to the variety and complexity of the services outsourced from different kinds of customers, the selection criteria for 3PLs can show preferences for 3PL providers being able to offer and manage a more extensive variety of services with attributes and capabilities of both 3PL factory and 3PL lernstatt together.

If the hypothesis should be proved truth, then the theoretical framework from Prockl et al. should possibly be revised and a new positioning strategy and new business model for 3PL providers should be proposed.

2.2 Theoretical background for the second hypothesis formulation

The second hypothesis tries to answer the second working question:

- *Do social and environmental sustainability-criteria affect the choice of the customers when selecting 3PL?*

The background for its formulation, theory and reasoning, is based on the Triple Bottom Line Theory, which is a theory used in sustainable supply chain management, and a literature review on CSR together with the results from previous researches investigating this topic, as the one from Perotti, Micheli, & Cagno (2015) and Wolf & Seuring (2010).

Sustainable Supply Chain management & Triple Bottom Line

The concept of Sustainable Supply Chain Management:

In their conceptual paper, Carter & Rogers (2008) define the concept of Sustainable Supply Chain Management based on the definition of Supply Chain Management from Mentzer et al. and Lambert et al. as:

"the strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key interorganizational business processes for improving the long-term economic performance of the individual company and its supply chains" (Carter & Rogers, 2008 p. 368).

Sustainable Supply Chain Management is based on the theory of the **triple bottom line**, which highlights that organizational sustainability has three components: social, environmental and economic performance. These three components can interact with each other and at the intersection of the three there are activities which are considered sustainable.

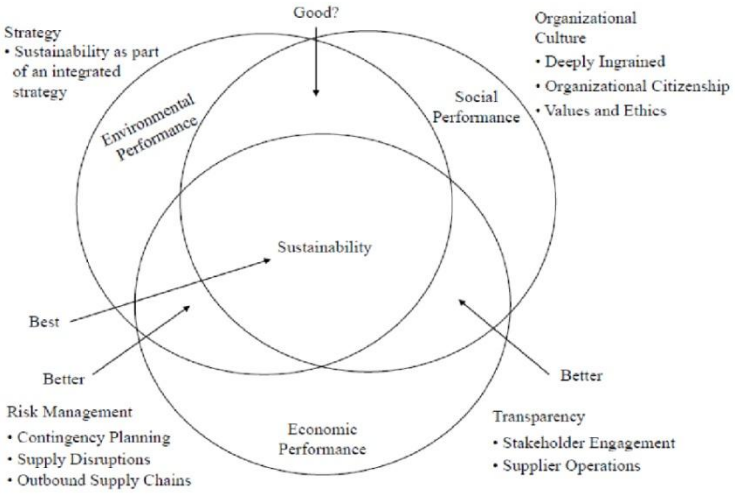

Figure 3: "Sustainable Supply Chain Management" Carter & Rogers (2008 p. 369)

A company engaging in those activities can achieve long-term economic benefit, competitive advantage and have a positive impact on the environment and the society (Carter & Rogers, 2008).

According to Carter & Rogers (2008), the triple bottom line has four supporting facets, which complete the framework on organizational sustainability. These are *Risk Management, Transparency, Strategy and Culture*.

Risk Management is seen as necessary in order to guarantee safety and security by preventing e.g. harmful disruption, environmental disaster in a long-term view.

Transparency on sustainable activities across a supply chain and across different networks can bring advantages increasing the performance of sustainable activities through f.ex. audit on supplier sustainability and sharing the benefits with supplier.

Strategy and Culture must be aligned in order to obtain the best results in organizational sustainability. It is important that the organizational culture, business strategy and sustainable strategy play together.

Carter & Rogers (2008) present a list of possible economic advantages derived from activities which lie at the intersection of the economic performance with at least one of the two other components, namely social or environmental performance.

Carter & Rogers´ (2008) possible economic advantages:

- Cost savings due to performances in designing for reuse and disassembly/ less waste in packaging

- Reduced health and safety costs due to improved and safer working conditions
- Lower labor costs due to better working conditions that increase productivity and motivation
- Proactively shaping future regulations based on a company existing supply chain process can result in competitive advantage
- Implementation of environmental standards based on ISO 14000 can reduce costs, lead time and improve quality
- Become a more attractive company to customers, suppliers and future employees due to good reputation derived from engagement in sustainability

On the other hand, Carter and Rogers (2008) report that social and environmental activities are considered too costly and therefore managers are often disinclined to engage in such activities.

What emerges from the researches from Perotti et al. (2015) and Wolf & Seuring (2010), which respectively investigated "Motivations and barriers to the adoption of green supply chain practices among 3PLs" and "Environmental impacts as buying criteria for third party logistical Services" is that typically both 3PL and customers show interest in sustainability, but this interest does not directly translate into engagement in sustainable activities. Often the minimum requirements by law are seen as sufficient "order qualifiers"1 from customers for engaging in relationships with 3PL.
According to Perotti et al.(2015), sustainable activities are still not entering the list of "order winners[2]" in the selection criteria for 3PL because costs and benefits related to such activities are difficult to measure and require high investments. In addition sustainable supply chain management is not seen as bringing competitive advantage, in that sustainable 3PLs are not seen as being better than non sustainable 3PLs (Perotti, Micheli, & Cagno, 2015).
Price, service performance and quality are identified as "order winners" criteria for the choice of 3PL also in the article from Wolf & Seuring (2010).
As a consequence of that, the second hypothesis has been formulated.

[1] "order qualifiers" in the text are the attributes that a 3PL must have in order to be in the list of eligible 3PLs for a customer.
[2] "order winners" in the text are the attributes that a 3PL must have in order to be chosen by a customer.

Hypothesis 2

Social and environmental sustainability is not a criterion influencing the customers´ choice when selecting 3PL, as the economic dimension, together with criteria such as performance and quality dominate the decision making in this choice.

2.3 Additional theories related to the thesis´ topic

In order to gain a more complete insight of the theoretical framework upon which this thesis lean, three more theories are presented.

2.3.1 The Network Theory

The network theory (NT) is used in supply chain management to understand and study the relationships between actors in the supply chain, where long-term trust relationships and mutual adaptation are in focus.

According to Johanson and Mattsson (as cited in Halldorsson et al.2007) there are two types of interaction that links actors in a network and thus, exchange processes and adaptation processes.

Links in a network, as in a supply chain, are important also to valuate the importance of resources. Combining resources of more actors can bring advantage and being more important than utilizing only own efforts. (Halldorsson, Kotzab, Mikkola, & Skjoett-Larsen, 2007).

The NT has been also used to understand and analize issues with third party logistics and therefore is of importance for this thesis regarding the topic of customer-3PL relationships with focus of 3PL selection criteria.

2.3.2 Resource-based view theory

The resource-based view theory (RBV) is another theory used in supply chain management and has the scope of explain how a firm can gain competitive advantage through its heterogeneous resources or capabilities. (Halldorsson et al.2007)

These resources are the core competences of a firm.

Through outsourcing to 3PL a firm can access the core competences of the provider´s firm, enriching the possibility to gain competitive advantage at a supply chain level. (Halldorsson et al. 2007)

RBV theory is important in this thesis, because it contributes to understand the cause of outsourcing and the importance of core competences, also when linked to the core competences of another firm.
The customers´selection criteria for 3PL are based on an evaluation of the 3PL attributes and capabilities and therefore the RBV is important in the understanding of this process.

2.3.3 Transaction Cost Analysis

The transaction cost analysis (TCA) theory is used to evaluate the decisions of a firm in "make or buy" situation, based on an economic approach. A firm often has to take decisions about which services to produce within the boundaries of the firm and which one to outsource. Efficiency can be won through engaging in inter-organizational relationships with a 3PL provider. (Halldorssonn et al. 2007).
The TCA can explain the reasons to engage in long-term relationships with suppliers as a method to reduce ex ante and ex post transaction costs like information gathering about suppliers, contracts and follow up costs. (Halldorsson et al. 2007).
The theory of TCA is important to this thesis in that it can be used to explain the choices and selection criteria for 3PL based on an economical and efficiency-based perspective.

3 Methodology

This paragraph wants to present the overall methodology used to conduct this research. Specific methodology explanations, relative to the different phases in the research process are provided further in the thesis.
To address the research problem formulated for this thesis and to provide results and answers to the working questions, the empirical quantitative method for primary data collection has been selected, based on relevant literature review and theories.
As the fundament for the research question formulation, the formulation of hypotheses and the survey-questionnaire formulation, a rich literature review has been consulted and it has been referred to relevant articles within the field of 3PL, logistics management, supply chain management, sustainable supply chain, CSR, research methods and more.
Most of the articles have been downloaded from the Copenhagen Business School (CBS) online library which gives access to CBS' students to a huge number of academics articles.

The research for relevant articles has been made based on references highlighted in other articles and relevant key-word searching on the CBS library browser.

In order to collect primary data to answer the research questions and verify the hypotheses, primarily a quantitative method based on online-survey questionnaire has been selected.
The online-survey questionnaire has become a common and much utilized instrument for conducting quantitative researches. It can be a very efficient manner for collecting a vast number of responses in a relative short time, if the researcher has easy access to a list of potential participants. In addition it is a cheaper and less resource and time-consuming way of collecting data if compared to other methods as it could be the qualitative interviews-based method (Sue & Ritter, 2011), (Rowley, 2014), (Evans & Mathur, 2005).

But, because of time restriction and resources restriction, which especially have intensified the difficulty in gathering a sufficient amount of respondents for having a representative sampling of the population in object for the research, it has been decided to put the focus of the thesis on the first steps of the survey research, namely the creation of the questionnaire and its pre-testing.
The choice of relevant theory, the selected and explained methodology, the formulation of hypotheses and the outlined research delimitation and objectives together with the improved questionnaire tool creates the framework for the future execution of the entire research.

A specific paragraph about the survey questionnaire will illustrate in depth the methodology used in relation to the questionnaire design, the questions and its answer-options, the sampling and the distribution of the questionnaire. The importance of the pre-testing of the survey questionnaire and the collection of feedback about the structure and comprehensibility of the questionnaire are illustrated in the section reserved to the pre-testing.
In regard to the few respondents' feedback obtained, they have been used for pre-testing the questionnaire, trying to understand if every respondent has understood the questions in the same way as the questions were understood by the researcher when formulated, and if the different respondents had different conceptions of the questions.
Additional feedback has been collected through interview and comments from other participants in the pre-testing process.

The answers of the respondents, who fulfilled the questionnaire in the pre-test have also been used to indicate the customers' orientation regarding the selection criteria for 3PL, but

because of the inconsistent number of respondents, the results are not sufficient to give reliability to the findings.

3.1 Research philosophy

Understanding the research philosophy upon which this thesis lean is important in that it helps to understand the entire process of the research and the manner in which the author contributed to the development of knowledge in the field of logistics.
Depending on the researcher's view on the nature of reality (Ontology), on what can create acceptable knowledge (Epistemology) and on the role of values in research (Axiology), it is possible to distinguish between different research philosophies and their relative most adopted technique for collecting data. (Saunders, Lewis, & Thornhill, 2012).
As Saunders et al. (2012) write in their book, a combination of philosophies and research methods can be possible and sometimes most suggested in order to addressing precisely what it has to be studied.

This thesis has a broader scope and a narrower focus at the same time: the broader scope, as already explained is to empirically investigating the customers' selection criteria for 3PL, in relation to the theoretical model from Prockl et al. and sustainability criteria, in order to eventually improve the positioning strategy for 3PL providers, once the research process will be completed.
The narrower focus of the thesis is the development of the questionnaire, which can be used to carry out the research and its pre-testing. The focus is on the first steps of the whole research.
Taking into consideration both the broader scope of the thesis and the narrower focus on which the thesis focalizes, the author needed to take into consideration two research philosophies, namely positivism and pragmatism, in order to develop the right approach and design for both things.

Positivism is a philosophy which sees the reality being objective and independent of social actors. What produces acceptable knowledge are phenomena which can be observed and generalized in a value-free way. Data can be collected in a quantitative or qualitative way, but results need to be measurable (Saunders, Lewis, & Thornhill, 2012).
The positivistic philosophy suits the broader scope of the thesis, where the selection criteria for 3PL want to be objectively observed and generalized for the selected population. Two

hypotheses, based on theory, are intended to be tested, based on the measurable results gathered through the survey questionnaire.

Pragmatism is a philosophy where the researcher sees the reality as being external, but where multiple views can help to answer the research question and where acceptable knowledge is provided by both observable phenomena and also subjective meanings. The values are important to interpret data, which can be collected through quantitative and qualitative ways (Saunders, Lewis, & Thornhill, 2012).

The pragmatic philosophy suits that part of the questionnaire's pre-testing, where the responses and the feedback from the selected respondents need to be interpreted and utilized to correct the structure and comprehensibility of the questionnaire.

3.2 Research approach

For the creation of new knowledge and in order to provide a deeper understanding of the causality of 3PL selection criteria and 3PL providers positioning is important to choose the right research approach.

Depending on the role that theory plays, it is possible to distinguish between two main approaches, namely deductive and inductive approach (Saunders, Lewis, & Thornhill, 2012).

In deductive approaches the theory is the starting point for hypotheses formulation and the collected data is used to test the hypotheses (Saunders, Lewis, & Thornhill, 2012).

In an inductive approach, the starting point is the data collection to explore, describe or explain a phenomenon and the process of generalization goes in the opposite way of the deductive approach. Here it goes from the specific of our data to the generic theory formulation (Saunders, Lewis, & Thornhill, 2012).

According to Saunders et al. (2012) it is possible to use both approaches within the same research. The research will be primarily deductive or inductive depending on the more or less extensive utilization of one approach over the other in the research (Saunders, Lewis, & Thornhill, 2012).

In order to answer and investigate the research questions of this thesis both approaches are relevant. The deductive approach is especially seen in this thesis in that it is used to formulate the hypotheses and thereby to build the questionnaire which can test the hypotheses.

The inductive approach is only partially seen in this thesis, although it will be relevant once the research will be carried out and completed on the selected sample. At that point, the inductive approach will serve to the formulation of a new theoretical framework or the implementation

of the existing theory from Prockl et al. through the analysis of the gathered data as the starting point.

3.3 Research design

According to Saunders et al. (2012) it is important to have a good research design which can ensure coherence through the whole research project.

To structure a research design means to have a plan to answer the research questions, a method to decide the "how" the researcher is going to develop and carry out the whole research (Saunders, Lewis, & Thornhill, 2012).
In order to do that, in this thesis, the researcher evaluated the type of phenomena to analyze, the research questions and what was the purpose of the research.
One of the purposes of the project is to study the relationship between the type of the outsourced 3PL services and the criteria for selecting the right 3PL provider capable to produce the services and add value to the customer.
In this sense the nature of this research can be considered explanatory in that it wants to highlight the causal relationship between variables (Saunders, Lewis, & Thornhill, 2012).

Having that in place, the researcher chose what was the most appropriate method to conduct the research and collect data, also according to time and resource restrictions.
Even if the research project has not been completed in all its phases, the researcher made a plan for its future execution and then focalized on the design of the questionnaire construction and its pre-testing.

The method thought for carrying out the project is primarily a quantitative method which utilizes the survey questionnaire as the instrument to gather data. The quantitative method is characterized by the possibility of gathering measurable data, thus data that can be analyzed and reported in form of numbers (Saunders, Lewis, & Thornhill, 2012).
Although a predominance of quantitative measurable data is expected to be collected within this research, the researcher utilized also the method for collecting non measurable qualitative data. That occurred for the questionnaire's pre-testing, where feedback in form of free comments from the respondents were sent via email and needed to be interpreted and understood. In addition, the questionnaire itself includes an open question, where the respondents have to shortly describe their firm´s mission. The answers to this question are thought to be interpreted by the author and utilized to test the coherence with the responses

given to the further closed-questions. Additional non measurable data has been collected through interview and oral feedback and it has been interpreted by the researcher.
Because of that, the whole research method can be defined as a mixed method.
The description of the questionnaire and the application of the research design in the specific will be presented in chapter 5.

4 Summary

This section has the aim of summarize the content of the previous chapters in order to give the readers a clear overall picture of how the thesis' research questions, objectives, theory and methodology presented so far play together.
This thesis has a broader scope and a narrow focus.
Starting from the broader perspective: the broader scope is to conduct a European research investigating the customers' selection criteria for the choice of third party logistics providers in order to suggest an implemented positioning strategy and business model to 3PL. The investigation of the criteria is delimited according to two parameters: the theoretical model for 3PL factory vs 3PL lernstatt and sustainability criteria.
Being the overall purpose of this research explanatory, the investigation of the customers' selection criteria starts from the theory and wants to test the hypotheses formulated from the theory in order to approve it or to improve it. In order to improve the theory, the researcher needs to analyze the results in an exploratory way, going from the specific to the generic.
The most relevant theories for this research are the one formulated by Prockl et al. (2012), where the authors categorize four types of 3PL services and related 3PL providers by utilizing a matrix combining "knowledge orientation" and "Integration power", and the theory of the triple bottom line. These two theories serve as the starting point for the formulation of the two hypotheses and they delimit the investigation on few selected parameters. This delimitation is not to be seen as a restriction, but as an attempt to develop a more accurate research.

The researcher is going to focus on the contrast between 3PL factory and 3PL lernstatt and will investigate if this clear division, where 3PL providers are categorized accordingly to the offering of either services characterized by efficiency, cost cutting, standardization and

undependability from the customer or services characterized by innovation, customization and cooperation with the customer, matches the empirical findings or not.
The hypothesis of the author is that this distinction is not applicable to the fast growing market of today, where the complexity of the outsourced services can demand attributes and management form from both types of 3PL at the same time. The reasoning behind this hypothesis formulation is developed with the contribution of the author´s understanding of the articles from Leahy, Murphy, & Poist (1995) and Anderson et al. (2011).

Then, in order to test if sustainability-practices are relavat selection criteria for the choice of 3PL providers, the author takes the starting point in the theory of the triple bottom line. According to the theory, social and environmental sustainable practices can bring competitive advantage to a firm or to a supply chain if adopted at a supply chain level, thus it can be worth to invest on it.
On the contrary, the articles from Perotti, Micheli, & Cagno (2015) and Wolf & Seuring (2010) guide to the hypotesis that, because of the difficulty of measuring the benefits derived from those practices vs the costs, not many firms will consider sustainability as an important criteria for the selection of 3PL.

The research's objective is to gather empirical data utilizing the method of the online survey questionnaire. The results will test the hypoteses and they will be utilized to propose a positioning strategy to 3PL.

Figure 4: Outline of the research: broader scope. Author´s own creation

The different colours in figure 4 refers to the research's steps already developed (the first three) and the research' s steps which are going to be developed in a second time, when the research will be fully carry out (last two steps).

The narrow focus and purpose of the thesis is putted on the development of the questionnaire as a tool to be used to carry out the whole research and on the pre-testing process in order to eventually improve the questionnaire and build a tool which gives valid results. In order to focalize on the questionnaire construction it is important to have clearly defined the overall

objectives and methodology of the research.

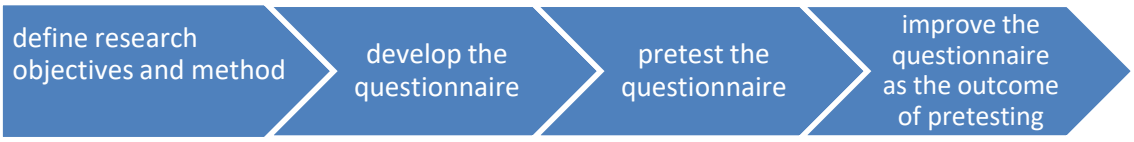

Figure 5: Outline of the thesis´ focus. Author´s own creation

5 The survey questionnaire

In this chapter the author will present the process followed to build the questionnaire, the method utilized to find the respondents for the pre-testing and the settings and distribution technique. The process of the pre-testing will be described and analyzed in chapter six.

Why the online self-administered survey questionnaire was selected

As the overall scope of the research project is to carry out a research which covers a vast geographic area in Europe and to achieve generalizable findings, the method of the online survey questionnaire was considered as well suited to this purpose.
Furthermore, Evans and Mathur (2005 p.197) highlight many other strengths of the online survey method to collect data as: global reach, flexibility, speed and timeliness, technological innovation, ease of data entry and analysis, low of administration cost, ease of follow up and more. These can be very relevant strengths especially if the research will be fully carried out by other researchers with resource restrictions.
Self administered online survey has also weaknesses as clarified by Evans and Mathur (2005 p.197), where the most influential weaknesses can be considered: unclear answering instructions, questions about sample selection, low response rate and more. These weaknesses have actually been observed by the author in relation to the pre-test process.

Overview of the survey process

Here below there is a presentation of the steps to follow in the survey process according to Sue & Ritter (2011 p. 2-3):

Define objectives.

- Determine what you want to know and why.
- Think about who will look at the results.

- Consider the influence of external funding sources.

Define the population and choose a sampling frame.

- Look for an existing sampling frame or create a sampling frame.
- Consider probability and nonprobability sampling strategies.

Design a data collection strategy.

- Evaluate time and budget constraints.
- Estimate available resources.
- Choose a survey administration method.

Develop a questionnaire.

- Write the questions.
- Pretest the questionnaire.

Collect data.

- Monitor responses.
- Employ follow-ups as needed.

Manage the data.

- Create a codebook.
- Input or export the data.
- Clean the data.
- Transform the data.

Analyze the data.

Disseminate the results.

Although the steps highlighted are those steps on which this thesis focalizes, the researcher made a plan about the definition of the population, the strategy of data collection and the collection of data itself. Sampling strategy, management of data and analysis need to be developed when the research will be fully carry out. In this thesis the little number of results has only been analyzed to indicate tendencies and thus don´t provide generalizable findings.

Here below, the author will go through the first three steps in the survey process highlighted by Sue & Ritter (2011). Step four is illustrated in the next section. The steps about data collection and data management have been partially touched in the research, and they are restricted to the pre-test data collection.

Define objectives. What the researcher intended to study and why she wanted to investigate that specific topic has been explained in the previous chapters. The chapter about the problem formulation, the thesis' objectives and then the chapter regarding the hypotheses formulation give a deep explanation of what the research project is going to investigate.
In a narrow perspective, this paper will serve as the starting point for future researchers willing to complete this research project. It will provide them with a pre-tested and possibly improved questionnaire to be utilized for the understanding of customers' selection criteria for 3PL, giving them a tool to investigate a possible new positioning strategy for 3PL on the market.

Define the population and choose a sampling frame. According to the definition from Sue & Ritter (2011), a *population* is the entire group of interest to which the research´s results can be generalized. In this thesis the population is represented by european shippers utilizing 3PL providers. These customers are supposed to be primarily producers, manufacturers, but any actor in the supply chain, outsourcing services to 3PL provider can be representative of the population. A *sampling*, according to Sue & Ritter (2011), is a subgroup, which is not as large, ahltough representative of the selected population. Probability sampling are often preferred compared to non-probability sampling, because they can better represent the population in study.
In this thesis, in order to select respondents for processing the pre-test of the questionnaire, the respondents have been hand picked and directly asked for a collaboration. In that sense a non-probability method has been utilized.
Probability samples are more difficult to define, if the researcher does not have a pre-defined list (Sue & Ritter, 2011), but it will also be the best type of sample for this research.

Design a data collection strategy. As mentioned before, it has been decided to gather data by utilizing the self-administered online survey questionnaire. This method suits well this research, especially in regard to the coverage of a vast geographic area, resource restriction and the kind of data collected which is suitable to be generalized.
However the addition of qualitative interviews with buyer of 3PL services could better complete the findings.

5.1 Develop the questionnaire: the administration platform

In order to develop and administer the questionnaire, the researcher utilized a Swiss-made online survey-platform, which gave the possibility to develop different kinds of questions, to

distribute the questionnaire to a selected list of possible respondents via their email program, to collect and analyze data and export results.
This platform, available on https://www.onlineundersoegelse.dk/, offers a variety of products packages at different prices. The researcher had the possibility to create a gratis profile, because the platform is gratis for students attending different business university and Copenhagen Business School is one among those selected universities.
The platform for the program is developed in twelve languages and the producer offers telephone support to the users.

Compared to other online programs for the administration of online survey questionnaire, like SurveyMonkey, the Swiss product turns out to be a very good option. The researcher compared the gratis package offered by different online platforms and the selected Swiss platform offered the best options in term of number of questions allowed in each survey, number of responses allowed to receive and duration of the period of free access.

5.1.1 Threats to the validity of the responses

In order to write a good questionnaire and achieve coherence and validity of the results it is important to formulate good questions. Each question has to be there only if it is useful and if it serves to investigate and provide useful data to answer the research problem (Sue & Ritter, 2011), (Rowley, 2014), (Janes, 1999).

What helped the researcher with the formulation of the questions was the theory. Taking the theory as the starting point and going through all the points of interest in the theory, in regard to the research questions, helped to decide how many questions to formulate and to cover all what the researcher wanted to investigate.

According to Sue & Ritter (2011) it can be difficult to get valid responses because of many factors. The three major threats to validity, according to the topic and research problem of this thesis are: *the respondents do not have the necessary knowledge for answering the questions, the questions are poorely constructed and thus not so easy to understand, the choice of responses is inaprropriate*.
The author tried to face these threats in advance making appropriate decisions. In order to lower the risk of sending the invitation to the questionnaire to the wrong person not dealing with the outsourcing of 3PL services and thus, avoid unvalid responses due to lack of knowledge, the author previously contacted the selected firms and presented the project,

asking for the direct email contact of the right person or department dealing with sourcing of 3PL. Having the right person to answer the questionnaire is thereby very important.
Regarding the construction of the questions, the author checked out the wording and comprehensibility of the questions with the pre-test respondents, with friends and family and with an expert, a professor of Supply Chain Management at the Copenhagen Business School. The improvements made thereby on the questionnaire will be of help for the future respondents.
The third threat of having a poor or innapropriate choice of responses is very critic to this thesis. In fact many of the questions are closed-ended questions, where a good knowledge of the topic is requested to the researcher in order to formulate appropriate responses options (Rowley, 2014).
The researcher, guided from her supervisor, tried to formulate the best options, but the restricted experience of the researcher herself in the field, made it a difficult process. That has been tested afterwords with cognitive methods. A deeper and more detailed explanation is provided in the chapter regarding the pre-testing process.

5.1.2 The questions

This section has the objective to explain in a more detailed manner what kind of questions the researcher utilized and what the purpose of the questions was.

As the overall objective was to write questions, which were as more clear, unbiased and understandable as possible, the researcher followed the advices listed below, where the questions, according to Rowley (2014 p. 314), need to be:

- as short as possible;
- not leading or have implicit assumptions;
- not including two questions in one;
- only exceptionally invite “yes/no” answers;
- not too vague or general;
- not use double negatives;
- not, in any sense, invasive, or asking questions that the respondent is unlikely to want to answer;
- not invite respondents to breach confidentiality.

The first version of the questionnaire is composed by 20 questions, primarily closed-ended questions.

The first two are open-ended questions with the objective of categorize and make a statistic of the respondents. Here the surveyed persons have to self give an answer about: 1) the approximately number of employees in their firm and 2) the sector in which their firm operates. Dibb & Wensley and Coltman et al. (as cited in Anderson et al. 2011) criticize any segmentation based on a priori factors like size and industry type, because too simplicistic and not usable as a criterion to segment customers' demand. The author of the thesis supports this critic and has the intention of utilize this data only as a statistic, to see how many small, medium or large companies and of which kind did participate in the research.
The relevant segmentation applicable to this research is to divide the respondents based on the type of outsourced 3PL services. Question 4 was thought with the intention of make this segmentation. The author wanted to segment the respondents on those outsourcing primarily "factory" services and those outsourcing primarily the kind of "lernstatt" services in order to check the match between the customers´actual selection criteria for 3PL and the theoretical distinction from Prockl et al. Question 4 needs to be modified, by adding the choice of more services, and implemented in order to better serve its purpose and be more clear for the respondents. That will be explained in the pre testing chapter.

Question 3 is a contingency question, a type of question which, according to Sue & Ritter (2011), is necessary to verify if a respondent is qualified to answer the questionnaire or not. The researcher asks if the respondent´s firm does outsource 3PL services to contract logistics provider? A negative answer will automatically esclude the respondent from the sample group.

The open-ended question number 5 asks the respondents to shortly describe his/her firm´s mission. This question has been formulated as a tool to double check the general coherence of the responses. The author assumes that the description of the mission of a firm given in question 5 should match with the answers given to the further questions, showing the same orientation. The advantage of applying open ended questions over closed-ended is that the validity of the responses can be higher, in that the respondents can give precisely the answer they want without trying to fit their answer in a pre-formulated and maybe not satisfactory list of answer options. The negative aspect is that the respondent can find it difficult to answer with his/her own words and because of that will try to skip the question (Sue & Ritter, 2011). Taking this consideration into account, the author decided to make the settings for this question as a free question, not obligatory to answer to in order to go ahed in the

questionnaire. All other questions are obligatory and not possible to skip. Question 5 is not going to be meseaurd in a quantitative way, but in a qualitative interpretative way.

From question number 6 to the last question number 20, the author utilized closed-ended questions in form of multiple-choice-, ranking-, rating scales with both number of points and scale labels, and dichotomus questions. All the multiple choice questions except one had mutual exclusive answer options, thus they permitted the selection of only one response option. As reported in Sue & Ritter (2011) respondents answer more accurately when they are forced to select one option instead of tick all the answers that apply, but the researcher needs to be sure to list all the possible answer options to ensure validity to the respondent´s answer. The answer options formulated by the researcher for the multiple choice questions are always five options, which list attributes/capabilities from 3PL factory and 3PL lernstatt escalating from factory oriented to lernstatt oriented through differet degree of intensity of one type over the other. The middel option wants always to be neutral. The choice of consequently providing five answer options has been taken in order to facilitate the data measuring process afterwords. Even if the restriction to five answers probably compromize the possibility of listing all possible answer options, the differentiation and logic of the answers is considered by the author to be clear enough to the respondents. This escalating differentiantion will enable the respondents to select the option that better suits their criteria for 3PL selection in relation to the outsourced project and services they want to refer to thrugh all the questionnaire.

Questions from number 6 to number 17 want to investigate the customers´selection criteria in relation to the first parameter: the classification of 3PL factory and 3PL lernstatt made from Prockl et al. (2012). Questions 18, 19 and 20 focus on the second parameter: environmental and social sustainable criteria. Questions number 9 and 11 investigate sustainable criteria in relation to criteria applying for the factory or lernstatt type.

Table 3 below presents the general business models for 3PL factory and 3PL lernstatt divided in 5 layers. The author built the escalating response options to the multiple choice questions on this basis. The questions cover all five layers.

Generic business model	3PL Factory	3PL Lernstatt
Institutional layer	Control of the own domain; designed for multiple users	Transfer of undertakings, joint ventures, other operating models: mutual linkages and overlaps dedicated to single

		user
Physical goods layer	Efficient management of homogeneous networks	According to project, adaptive structures: agility, flexibility, customer orientation
ICT layer	Data transfer and efficient own ICT	Interlinked ICT, customized to project
Relationship layer to the client	Branding of performance capability	Change management, trust Relationship
Financial performance layer	Competitive prices based on utilization (synergies) of the core business, transaction, volume based	Cost coverage and participation on savings and improvements, open book, monitoring

Table 3: Comparison of the generic business models for service factory and service lernstatt (Prockl et al, 2012 p. 553)

Question number 6 and 7 investigate the institutional layer under two aspects, that is respectively how to manage *decisions & operating model (q.6),* and *networks (q.7).* The institutional layer regards how customer and 3PL provider will organize their legal and formal interaction, where for service factory there is the expectation of separate domains and distinct operating model, for the kind of service lernstatt there is the expectation of intense linkages (Prockl, Pflaum, & Kotzab, 2012). Question number 8 investigates the physical goods layer for all physical activities as transportation and warehousing and which solutions will the customer prefer? From efficient and standard, typical of the service factory to innovative and customized typical of the service lernstatt.

Question number 9 wants the customer to rank five attributes, *cost saving, innovation, efficiency, customer orientation and social & environmental criteria*, from the least to the most important. This question is not referred to a specifical logistics network layer, but should be answered more in general. Question 9 gives the idea of the relative importance of the attributes in relation to each other where “factory attributes”, “lernstatt attributes” and sustainability attributes are investigated together. The initial list for the ranking question had ten attributes, then reduced to five to be more handy for the respondents (Sue & Ritter, 2011).

Question number 10 investigates the ICT layer and how the customers want to have it, when working with 3PL? the answers escalate from closed loop and efficient ICT with no interweaving between the customer´s and provider´s system to a system based on interweaving of ICT and information transparency.

Question number 11 is built as a rating scale question with the points system, where the respondents have to give a score out of a five points scala in order to evaluate each of the nine attribute listed, providing data about the absolute importance of each attribute. Here, as in question 9, the attributes are not directly related to a logistics network layer, but they need to be evaluated by the respondents more in general in regard to what they evaluate important in a relationship with a 3PL. The listed attributes are related to service factory, service lernstatt and sustainability.

Questions number 12 and 13 investigate the relational layer, that is the relationship and the type of cooperation between customer and 3PL provider. More specifically, question 12 investigates if the customers seek for efficiency and independency oriented 3PL providers or collaborative and keen to build trust relationship 3PL providers. The answer-options escalate from one extrem to the other. Question 13 asks more specifically how the relationship between customer and 3PL provider should be from a more operational point of view, that is to which extent will the parties cooperate in providing logistics solutions.

Questions number 14, 15 and 16 investigate the financial layer. With question 14 is it possible to investigate how far the customers want standard services offered at competitive prices or if they choose an answer-option oriented more to innovation and costs& benefits sharing. Question 15 is formulated as a rating scale question with scale labels where all options are labelled. According to Sue & Ritter (2011) the labeling helps to interpret appropriately the scale definition. The question is asking the respondents how important is financial transparency through the supply chain. The answer given to this question can check the coherence with the response given to the previous question 14. Question 16 is correlated to the two previous questions and can give insights about the respondents attitude about working as an actor in a supply chain – is it important to work as one unit, share costs and benefits, enable transparency and common profitability or is it better to compete as single actors?

Question number 17 is the only question where respondents can choose more options. The question presents a list of sets of attributes, where the sets are formed by attributes related to the same kind of service or a mix set with e.g. one factory related attribute and one lernstatt-related attribute. The purpose is to investigate how far respondents will select attributes chacteristics of only one type of service or if they will mix them.

Questions number 18, 19 and 20 are dedicated to investigate environmental and social sustainability as selection criteria for 3PL provider. The first two questions are formulated as rating scale questions where the respondents is directly asked about the importance of these two sustainable variables in the choice of 3PL provider. Question 20, which is a “yes” or “no” question, can be used to check coherence with the two previous responses. It asks respondents to evaluate if sustainable 3PL can enable supply chain competitive advantage. With these three questions it will be possible for the researcher to answer the working question related to sustainability, but the data don´t explain the motivation behind the choice. The full questionnaire is attached in the appendix.

5.2 The method utilized to find respondents for the pre-testing

According to Sue & Ritter (2011) it is possible to find respondents for the pre-testing of a questionnaire by selecting a small number of persons from the sampling group. But, as explained before, a sample group has not been selected for this research so far, in that this step will be executed in a second time, before carrying out the whole research process.

The author decided to hand pick respondents selecting companies she knew and other companies found on the internet. This method is a non probability method. A total of around 100 companies have been asked to participate in the pre-testing process. As the first step the author found on the internet the general email address of the selected companies and sent them a first email, where she presented herself and the project and where she asked for the direct email address of the person or department in charge for outsourcing of 3PL services. About 25% of the selected companies came back helping with the direct email address, while the others did not want to participate and explained that they did not have the resources to do that due to the huge amount of similar requests. Around 20 additional general email addresses have been utilized to send the email with the link to the questionnaire – 44 companies in total received the invitation email with the link to the online questionnaire. Out of 44 companies, only 5 completed the questionnaire and 3 of them sent feedback about the structure and comprehensibility of the questionnaire to use to improve the questionnaire.

5.3 Settings and distribution of the questionnaire

With a non-probability method, the researcher managed to collect 44 email addresses of potential respondents for the pre testing. The swiss-made platform utilized for the management of the survey questionnaire enabled the distribution of invitation email with the

link to the questionnaire via their own system. The distribution process was divided in three steps: the formulation of the body of the invitation email, the creation of the mailing list and the sending phase. How the researcher writes the invitation email is essential to the succesful recuitment of respondents. It is a very important step since it is the way how the researcher approaches the possible respondents for the first time and thus it should be intriguing, simple and short, friendly, motivating and trustworthy (Sue & Ritter, 2011 p. 3 in chapter "conducting the survey").
According to Sue & Ritter (2011 p. 3 in chapter "conducting the survey") the following advices can help to write a good invitation email and thereby facilitate a higher respons rate.

- Keep it short and simple (a maximum of three paragraphs).
- Explain why the survey is important.
- Represent the survey accurately in terms of the purpose.
- The design and layout should be professional and visually appealing.
- Inform the reader of the approximate time needed to complete the survey.
- Make the language consistent with the survey and appropriate for the audience.
- Address the issues of confidentiality and anonymity.
- Include the company logo if you have one; it will build trust and credibility.
- Thank the reader in advance for giving his or her time for completing the survey

The researcher has considered all these advices when writing the invitation email and all points have been fulfilled, keeping them as short as possible. The university logo is missing. An additional remark is that, the questionnaire itself does not include the possibility of having a welcome screen with practical information about how to go through the questions or more detailed instructions, and maybe that could have been explained in the email body. On the other side, the author made the decision of keeping the email as simple and short as possible in order not to "boring" the repondent. The full text of the invitation email is available in the appendix.
Before sending the invitation, the author adjusted the settings: It has not been given the possibility to interrupt answering the questionnaire and start again from where the respondent stopped. The researcher´s assumption is that the possibility to fulfill the questionnaire in a fragmented manner can take the concentration of the respondents away.

It has not been selected to distribute the questionnaire with a specific user-ID log in for each respondents because the researcher wanted to make the respons process as simple as possible for the respondents. On the other side, to secure single participation of respondents it has been selected the block for browser-session-ID. In this way it was always possible for the respondent to forward the invitation email to the right person.
In order to increase the response rate the researcher adopted follow up emails, where the possible respondents were reminded about the importance of fulfilling the questionnaire and how their help will be of great importance for the researcher. This technique of writing to possible respondents, making them feel helpful and valued for their contribution, comes from behavioral theory (Sue & Ritter, 2011). More precisely, the theories of cognitive dissonance and self-perception explain how a person who identifies himself/herself as a kind and helpful person will be keener to answer the questionnaire in order to match their self-perception with their behavior (Sue & Ritter, 2011).

The utilized Swiss program enabled to check when a respondent from the created mailing list has fulfilled the questionnaire and that helped the researcher to send follow up reminder email only to those who have not answered after one week and to send thank you email to those who answered. In fact the program did not have the option for sending thank you email automatically to the respondents who fulfilled the questionnaire - at least that service was not included in the free package.
The researcher adopted other “tricks” to try to increase the response rate as e.g. sending reminder emails early in the morning, where it has been observed a higher response rate or in specific week-days (Sue & Ritter, 2011).

6. Pre-testing of the questionnaire and outcome

The aim of this chapter is to illustrate how the researcher conducted the pre-testing of the questionnaire and what emerged. The results will be used to answer the research question of the narrow thesis’ focus and to improve the questionnaire.

The pre-testing process has a recognised importance among researchers (Presser & Blair, 1994), (Drennan, 2003), (Collins, 2003), who see it as necessary in order to provide valid, reliable, unbiased and complete findings (Collins, 2003). That is possible by testing if respondents do understand what it has been asked in the questions, if they understand it all in

the same way and if they understand it in the same way as the author intended when he/she formulated the questions. In order to do that there are different pre-test method approaches to apply as e.g. behavior coding, cognitive interviews, expert panels (Presser & Blair, 1994). The author of this thesis utilized different methods to pre-test and gather usable feedback about the questionnaire´s structure, comprehensibility, coherence, wording and content. Five respondents have fulfilled the questionnaire and three of them have sent feedback via email about the structure, comprehensibility and coherence or general problems of the questionnaire. Additional feedback has been gathered by interviewing a Professor from the Operations Management department at the Copenhagen Business School, who went through the questions in the questionnaire providing feedback also regarding structure and coherence of the questionnaire. The wording and the general comprehensibility of the questions have been tested with family members. The questionnaire has been also reviewed many times by the author and her supervisor, who added comments and feedback to improve it.

Theoretical background for pre-testing:

Cognitive methods derived from cognitive psychology, which is the study of mental processes, are typically utilized in the questionnaire pre-testing in order to understand what is behind the respondents answering process (Collins, 2003) (Drennan, 2003). The two most utilized methods are: *think aloud* and *probing*, which consist in two different interview-approaches with the respondents. The *think aloud* method is respondent-driven, the respondents comment aloud the questions while answering without the interference of the researcher. In the *probing* method, which is driven by the interviewer, the respondents are asked specific questions after the completion of the questionnaire in order to understand the possible difficulties encountered when answering (Collins, 2003). According to the question and answer model, the narrative data collected with cognitive methods, is used to provide explanation of problems related to *comprehension, retrival of information, judgement* and *response formatting.* This classification, can help to achieve more objectivity of the results (Drennan, 2003) (Collins, 2003).

The feedback collected via email for this research can be categorized as cognitive data. The respondents explained, with own words and without specific questions from the researcher, what they found problematic when they answered the questions and what they think should be improved. Compared with the think aloud methodology, these comments are not given concurrently with the fulfilling of the questionnaire but retrospectively and are written instead

of orally. Despite this and based on the critics to the think aloud method as in Drennan (2003), the author considered the methodology of collecting feedback via email even more appropriate. In fact the think aloud method can results embarassing for respondents who can´t explain their mening so well orally in a different language from their mother tongue or they don't feel confident if they don't understand the questions or they don't know how to find problems in the questionnaire. In addition the presence of a researcher can influence the behavior of respondents (Drennan, 2003). As a consequence of that, a respondent who is free to write a comment about the questionnaire when he/she has more time, has reflected over the questions and feels free to utilize all the time he/she needs to formulate the message, will provide usable feedback produced in a more relaxed atmosphere.

All the collected data for the pre-testing come in form of qualitative data, thus non measurable data, which instead need to be interpretate.

Because of that, it is possible to see and utilize the pre-test of the questionnaire as a way to identify problems, while it is more difficult to utilize it to solve these problems (Collins, 2003). Some of the participants in the pre-test came self with advices about how they think the questionnaire will work better, but being that feedback subjective, there is no quantitative proof that the reviewed and improved questionnaire is better than the original (Collins, 2003 p. 236)

In table 4 below, it is possible to see an overview of the feedback collected.

Source	Feedback´s category	Feedback
Respondent 1	Structure; logic comprehension	"Consistent, understandable and logical line of questioning."
	Judgment; response formatting	"Though some of the answer-options to the multiple choice questions are not so easy to understand and need to be red many times."
	Judgment; risk of misunderstanding	"Varying the choices like the researcher do, it will play a too big role how different respondents read different answers, and this obviously introduces some uncertainty."
	Judgment; response formatting ; advice	"Maybe it would be easier to set up some kind of overall argument instead and then give the choice of 'not at all', 'to a low degree', 'to some degree', to a

		high degree' and 'precisely' in order to make it clear how you yourself rate the choice of answers."
Respondent 2	Understanding of the tasks of the questionnaire	"I gave the best answers from my point of view, but in order to be sure that you get the correct understanding I think I would need to have explained the company's whole logistic set-up in the different supply chains."
	Instructions to fulfill the questionnaire	"It would have been good to have a thorough explanation and definition of 3PL and what kind of service we talk about."
Respondent 3	Understanding of the questions; Judgment	"In the questionnaire there was the accent on cost saving and efficiency but not anything about effectiveness (for example Lead time) that is quite important for the company to synchronize activities. This because it requires for our business to manage a lot of activities ahead the logistics operations."
Respondent 4	Wording	Comments regarding the choice of words as f.ex company instead of firm or comments referred to grammatical mistake in English or sentences construction. The respondent suggests making the response options "lighter" by f.ex. moving part of the starting text in the responses up in the heading of the question.
Respondent 5	Structure; logic, comprehension; wording	• The answer-options in general are coherent, but still to improve. Comments to questions: Q. nr 3, ask to what extent do firms outsource. Q. nr. 4, add more answer-options. Q. nr. 5, move it up in the questionnaire in order to have a better logic to group questions. Q. nr. 9 could have a longer list of attributes to rank or some empty boxes. • To review how the questions are formulated. • It is not necessary to have a huge presentation of each question, maybe a short clear heading. • The questionnaire should be presented as a business questionnaire and maybe a welcome screen is not necessary. • Some questions seem to repeat each other. Not too much overlaps. Maybe have a double version of the questionnaire: the one for personal use should be more explicative

		and clearly state the purpose of each question. The version for the respondents should still be clear but without purpose explanation.
Author	Structure	Missing welcome screen - it can be used to give practical and extra information and instructions.
	Content	Question nr. 4 need to be modified to better serve its purpose of identifying the kind of outsourced services. Review the choice of answer-options
	Instruction to how fulfill the questionnaire	Explain to the respondents, that they need to refer their answer to a specific project with a 3PL.
	Content	Improve the questions on sustainability. Ask the respondents to motivate the responses.
	Content	Delete q. 5 about the mission of the company. This question should have been used to double check the coherence of the answers, but outsourcing of 3PL services doesn´t need to have a direct relation with the mission of a company.
Author & Supervisor	Logic	Review the grouping of the questions
	Content; purpose	Add a question where the respondents must write explicitly with own words to which project do they want to refer in the questionnaire - where project means a relationship between one client and one service provider and a package of services.
	Content, purpose	Modify question 4 adding a longer list of services. The respondents will select all the services outsourced in relation to the selected project. That will explain what was done in the project, the purpose.

Table 4: Summary table of pre-test feedback. Author own creation.

The interview with respondent 5, a CBS professor of the department of Operations Management is available on CD, though the main results are all collected and explained in table 4.

6.1 Analysis of the feedback´s results

This section will present an analysis of the received feedback and it will explain how this feedback can be utilized to improve the questionnaire.

The feedback received from the three respondents who completed the survey can be interpreted and explained in relation to the "question & answer" model. That can help to categorize the highlighted problems in four categories concerning the *comprehension of the questions, the retrieval of information necessary to answer, the judgment of the answer to give and the response formatting* (Collins, 2003).

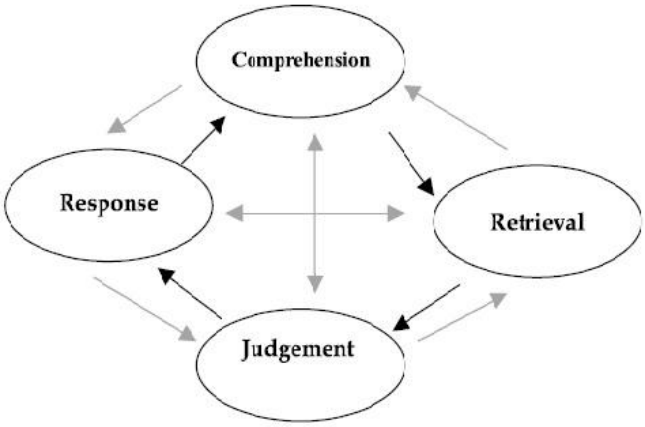

Figure 6: Question and Answer model. Collins (2003 p. 232)

According to the author´s subjective and interpretative understanding of the feedback, the major problems are in relation to the understanding of the questions, the judgment of how to respond and as a consequence also to the response formatting. According to respondent 2 the questionnaire lacks of a clear explanation of what is going to be investigated, and how the respondents need to approach each question, which has a direct influence in the comprehension of the questions. That can create misunderstandings and it can result in invalid answers.

What emerges from the feedback given by respondents 1 and 3 is also very important for the improvement of the questionnaire: respondent 1 found it difficult to understand the different answer-options, and probably he could not see the logic in the escalation of the responses from more factory to more lernstatt oriented. This problem can be common to many respondents affecting the validity of the results. According to Collins (2003), there can be many causes behind that and it all refers to a difficulty in the answer formulation process. The respondent is maybe missing the necessary information to answer or the information he/she

has are not accurate enough or the respondent needs to adapt too much his/her answer to meet the question´s needs. As a consequence of that, it is much probably that the respondent encountered difficulty in the response formatting, where he had to adjust his answer in order to match one of the pre-formulated options.
Since the majority of the questions in the questionnaire are formulated in this way, as closed ended questions with escalating response options, the problem highlighted by respondent 1 can invalidate more than half percent of the responses in the questionnaire. This problem, related to the difficulty or uncertainty of having understood the question and response-options in the same way the author intended, can even worsen especially if it is a common problem for many respondents.
The feedback from respondent 3 goes in the same direction as respondent 1. What he says about the focus of the questions on *efficiency and cost* and the absence of the aspect regarding *effectiveness* as f. ex lead time, indicates to the author that there are problems in the understanding of the questions and judgment of response-options in relation to what the author intended when she developed the questions. In fact effectiveness is an attribute which characterize more the factory type of 3PL and that should emerge from the answer-options which are more factory oriented. The author considers the words *efficiency* and *effectiveness* as close to each other in their meaning.

When the author developed the answer-options, she knew that it was impossible to list all answer-options, but she thought that the five options could be understood as a kind of category-options. In this way respondents could fit their own answer in the option, which was much close or similar to the answer they wanted to give. That can be caused by a wording problem or more a content problem. The author will suggest some improvements.

The author assumes that there weren't problems related to the *information retrieval* phase in order to answer the questions, as the respondents were people dealing with logistics service outsourcing on a daily basis.
The feedback from respondent 4 about wording helped to modify the structure of the sentences in English, even if in some cases, the author decided to keep the original edition, as she considered it more appropriate.
The feedback from respondent 5 as well as the feedback from the author herself and her supervisor is not categorized according to the question and answer model, but instead it

encompass a variety of other parameters as: logic, purpose of the questions, structure, content and wording.
It has to be paid attention to the comment from the author´s supervisor regarding the content of a couple of questions: in order to investigate appropriately the research questions, the supervisor suggested to add a question where the respondents are asked to self choose the project they want to refer to in the questionnaire, where *project* is defined as a relationship between one client, one service provider and a package of logistics services. Afterwards, question 4 will be modified into a longer list of services, where the respondents have the possibility to select all the services outsourced in relation to the selected project.That will highlight the purpose of the project. Already from the selection of these services, it will be possible to see if the types of services were more factory or lernstatt oriented. The latter has a very high importance in order to ensure validity to the questionnaire and thus it needs to be better formulated and not just be implied as it was.
Later on in the questionnaire, the questions covering the five layers of the total logistics network will provide data about the managerial aspects of the project to which the respondent referred.

Trying to answer the research question of the narrow thesis' focus, which asked if the questionnaire developed for investigating and answering the broader research question was serving its purpose, the author must say that the questionnaire needs to be improved. In fact the feedback from the first 3 respondents, interpreted by the author on the basis of the question and answer model, showed perplexity and risk of misunderstanding the questions and the related response-options. According to that and to the improvements suggested by the other interviewed and the author herself, the questionnaire has been modified seeking for improvement.

6.2 Outcome – the new version of the Questionnaire

Below in table 5 in the next page, the author presents the implemented version of the survey questionnaire as the outcome of the process of pre-testing applied to the original version. This version contains also explanation regarding the purpose of the questions and the grouping.

Welcome screen		
Hi, thank you for participating in this survey about the customers' selection criteria for third-party logistics providers. Before starting to answer we want provide you with some useful explanation: Our definition for third party logistics provider: (3PL) is an external company offering to the customer basic to complex services solutions. The relationship customer- 3PL provider can vary from one based on management of separate domains and standard logistics solutions to one based on cooperation management and tailored logistics solutions. When responding the questions please refer to a specific project you had with a 3PL, where project is understood as a relationship between a client, a 3PL and a package of services. Many thanks again for your precious help.		
Question	**Response-options**	**Purpose of the question**
Respondent´s company information		
1. Approximately number of employees in your company:	☐ Empty box	Classify the respondent´s company. Statistical importance
2. In which sector does your company operate?	☐ Empty box	Classify the respondent´s company. Statistical importance
3.Does your company outsource to third-party logistics providers? If yes, to what extent?	☐ Yes ☐ No ☐ To what extent in %	Contingency question, if they answer no, then they should not go ahead with the questionnaire.
Scope and purpose of the project		
4. Please describe in few words the project you want to refer to in this questionnaire.	☐ Empty box	This delimits the attention of the respondent only on one precise relationship with a 3PL, so that the answers are not given in general.
5. Which services have been outsourced in that project? Select all the outsourced services which apply and indicate to what	Domestic Transportation; International Transportation; Warehousing; Freight forwarding; Customs Brokerage; Cross Docking; Product Labeling;	Understanding of the customers' requests. The listed and selected services can be classified in more factory or more lernstatt.

extent they have been outsourced. You can add more services if not listed.	Packaging; Assembly; Transportation Planning and Management; Inventory Management; Order Management and fulfillment; Customer Service; Information technology services; Supply Chain consultancy; a few empty boxes. (Langley & Capgemini, 2014) (Langley & Capgemini, 2015) (Langley & Capgemini, 2016)	According to the mix of choices it is possible to understand the customer´s orientation.
Managerial aspects of the project		
6. How did your company and the 3PL managed decision making and operating model in the selected project?	□ In a totally separate manner □ With only a few interfaces and not much cooperation □ En hybrid form of common and separate administration and decisions □ Discussing decision together and planning a more common administration □ With a common decision and operating model	Purpose of this question is to investigate the institutional layer, the formal coupling between the parties. The author decided to keep the escalating form of response options, because she thought it fit better than asking to give score to single attributes. The answer-options have been simplified in their structure.
7. How did your company managed linkages and cooperation with the 3PL in the project?	□ No intense linkages and no cooperation □ Only few clearly defined interfaces □ A hybrid form of linkages and cooperation □ Working for implementing the degree of network sharing and cooperation □ Strong linkages and cooperation	Purpose of this question is to investigate the level of cooperation and network sharing within the institutional layer.
8. In which manner did your 3PL handled the flow of physical goods?	□ In a homogenous and standardized manner □ With focus on efficiency and standardization □ With an hybrid form of efficiency and customization	Purpose of this question is to investigate the handling of the physical goods layer. Here is it possible to investigate if innovation and customization are required attributes also

	□ Prioritizing flexibility and customization □ With focus on innovation and customization	when the 3PL is providing more factory related services.
9. How did your company and the 3PL managed the Information and Communication Technology (ICT) in the project?	□ Efficient ICT and no interweaving of IT between the actors □ Communication based on data transfer and only few interweaving □ En hybrid ICT between separate and common □ Project oriented interweaving of ICT □ Transparent ICT, intense interweaving	The purpose of the question is to investigate the managerial aspects related to the ICT layer.
10. Which kind of 3PL IT capabilities have been used by your 3PL?	Transportation Management (Execution); Warehouse/Distribution Center Management; Electronic Data Interchange; Transportation Management (Planning); Visibility (Order, Shipment, Inventory, etc.); Web Portals for Booking, Order Tracking, Inventory; Bar Coding; Customer Order Management; Supply Chain Event Management; Network Modeling and Optimization; Supply Chain Planning; CRM (Customer Relationship Management); RFID; Cloud-Based Information Technologies; Mobile Technologies for Sales Support. (Langley & Capgemini, 2015 p.16)	This question was originally included in the first version of the questionnaire and then took it away, due to uncertainty of the author. The author decided to reinstate it, because it can add significant data related to the selection criteria of 3PL. It could be evaluated the possibility of asking this question more in general and not related to the specific relationship with a 3PL. That could add information about what do shippers require from a 3PL, but maybe they don´t currently get.
11. The relationship between your company and the 3PL, in the selected project, was characterized by:	□ Effectiveness and performance provided by the 3PL □ Efficiency and standardization provided by the 3PL	The purpose of this question is to investigate the relational layer with the 3PL.

	□ An hybrid of efficiency and innovation □ Improvement of cooperation between the actors □ Innovative solutions provided in cooperation	
12. What did your company requested to the 3PL, in the selected project, from a financial perspective?	□ Efficiency at very competitive price □ Standardized services and cost saving □ A hybrid form between customization of the services and competitive price □ Shared cost and benefits □ High innovation and shared cost and benefits	The purpose of this question is to investigate the financial layer, where standardization versus innovation are investigated in relation to pricing.
Questions more in general		
13. More in general, how important are these criteria when you have to choose the 3PL you would like to work with? Give a score out of 5 to each attribute, where 5 means very important. You can add more criteria which you retain important.	Customization; efficiency; innovation; cost saving; cooperation; financial transparency; social & environmental sustainability; information transparency; flexibility; empty boxes	The purpose of this question is to investigate the importance of single attributes, some factory-related, some lernstatt-related and CSR, when selecting 3PL. Compared to the next question, there are more attributes to evaluate, because the respondent doesn´t need to have visibility over the whole list at once, but can focalize on one at a time.
14. Rank these attributes from the most to the least important when choosing a 3PL (from 1 to 5, where 1 is the most important). You can also add more attributes and go ahead with the ranking.	□ Cost saving □ Innovation □ Efficiency □ Customer orientation □ Green supply chain related services	This question has the purpose of comparing the relative importance of CSR, factory related- and lernstatt related- attributes to each other when selecting a 3PL, through ranking. The restricted number of attributes make the ranking process easier, but it can be discussed the possibility of a corresponding list as in q. 13. Green supply

		chain services, are considered strategic services in Langley & Capgemini (2014).
15. Which of these sets of attributes describe best what your company expects from a 3PL more in general? You can select more than one or write your preferences below.	Efficiency and performance; cost saving and standardization; effectiveness and independence; cooperativeness and innovation; customization and high value adding services; price competitiveness and innovation; efficiency and innovation; customization and cost saving; empty boxes	The purpose of this question is to investigate if the respondent select sets of attributes which belong to the same kind of 3PL or sets which are hybrid forms.
16. In a future perspective of three years, which services will your company outsource and to what extent?	Domestic Transportation; International Transportation; Warehousing; Freight forwarding; Customs Brokerage; Reverse Logistics, Cross Docking; Product Labeling; Packaging; Assembly; Transportation Planning and Management; Inventory Management; Order Management and fulfillment; Customer Service; Information technology services; Supply Chain consultancy; a few empty boxes	This question presents the same list of services as in q.5, but the purpose is to discover if the company already has a plan of extend its outsourcing to more services and of what kind.
17. In a future perspective of three years, which kind of 3PL IT capabilities will your company require from 3PL?	Transportation Management (Execution); Warehouse/Distribution Center Management; Electronic Data Interchange; Transportation Management (Planning); Visibility (Order, Shipment, Inventory, etc.); Web Portals for Booking, Order Tracking, Inventory; Bar Coding; Customer Order Management; Supply Chain Event Management; Network Modeling and Optimization; Supply Chain Planning; CRM (Customer Relationship Management); RFID; Cloud-Based Information Technologies; Mobile Technologies for Sales Support. (Langley & Capgemini,	This question wants to investigate the tendency in three years for the utilization of 3PL IT capabilities, which will have an influence on the strategic positioning of 3PL. E.g. cloud –based information technologies are going to be a very innovative and requested service to 3PLs in the very next future, according to Langley & Capgemini (2016)

	2015)	
Sustainability parameter		
18. With reference to the selected project, did your company selected a 3PL engaged in sustainability practices – a sustainable 3PL?	☐ Yes ☐ no explain shortly why ☐	Question 18 and 19 want to investigate the importance of sustainability and value adding services related to it in the choice of 3PL. While question 18 refers to a choice already made, question 19 wants to investigate it more in general and wants to help understanding if outsourcing of sustainability related services is a value adding mechanism to the customer at all.
19. How important is for your choice of 3PL, that the 3PL can provide you with value adding sustainability-related services?	Not important; less important; uncertain; important; very important explain shortly why ☐	In relation to the original version of the questionnaire, the questions investigating the sustainability-parameter are reduced to two, but they better cover their purpose.

Table 5: Questionnaire new version as the outcome of the pre testing. Author´s own creation

Comments to the new questionnaire version: the author took into consideration all feedback received. Despite some feedback indicated a certain degree of difficulty in understanding the response-options, the author decided still to keep using the same structure. Thus, the response-options in the questions related to the managerial aspects of the project escalate from more factory oriented to more lernstatt oriented. However both questions and responses are now clearer and simply formulated. In order to formulate the questions and the relative answers as suggested from one of the respondent, the author should have adopted a form similar to the following example: Question 6. To what extent were decision making and operating model between your company and the 3PL managed:

A) totally separated

B) as an hybrid form of common and separate manner

C) With a common decision and operating model

Where the respondents have to evaluate each sub-question according to the likert scale: not at all, to a little extent, uncertain, to some extent, to a high extent. The 3 sub-questions are all necessary in order to address the purpose of the question, but it can result difficult to analyze the responses in their coherence and as a total response for the main question.

More on the escalating answer-options: the author decided to modify the middle option from one, where the neutrality was given by the exclusion of both extreme-forms of factory and lernstatt, to one which highlights the hybrid form of the two. The result is the same, but the author evaluated it as more understandable for the customers and at the same time not so risky for the validity of the responses. In fact, now, that all options have been reformulated in a simpler way, it should be easier to make an evaluation between all answer-options.

Four questions, which seemed to overlaps, have been deleted, while two questions, with the new purpose of investigating the tendency of outsourced services in three years have been added (q. 16,17).

As the author highlighted before in the chapter, the new version of the questionnaire have been developed according to subjective interpretation of subjective and non measurable feedback.

Because of that and because of the restricted number of feedback the author will suggest to pre test once again the new version of the questionnaire with a possibly larger group of respondents and try to set up both think aloud and probing interviews under the presence of interviewer. That will require the engagement of more resources.

The author will also suggest translating the questionnaire into multiple languages, in order to simplify the answering process for respondents of different European countries.

In the next chapters the author will address the broader research problem taking into considerations the limitations related to the collected empirical data.

7. Empirical findings

This chapter has the aim of presenting the empirical results of the survey, which are going to be used as the starting point for the analysis and discussion about the broader research problem.

The limitations concerning the usability of the survey´s empirical results are mainly related to two causes: the limited number of respondents and the fact that those respondents have been exposed to the questionnaire as tester (Sue & Ritter, 2011). Nonetheless the author wants to look at the results as data, which can indicate the direction or tendency of the customers' criteria for choosing 3PL. The findings are not generalizable.
Despite these results are provided by respondents involved in the pre test process, the author has not explained the purpose of the questions to them before and that exclude they have been influenced when responding to the questions.
Here below it follows the presentation of the survey´s results, together with comments related to possible misunderstanding of the questions. The respondents have been promised the anonymity and thus no company name will be used. However, being the respondent´s email address connected to the answers, it was possible for the author to see the individual responses.

Statistical information about the respondents' company:
There were two companies operating in the food industry, one from the fast-moving consumer goods (FMCG) industry, one from the automotive sector and one from the public transport sector. All companies except one are part of larger international groups, with branch offices in different country of the world. When responding about the size of their firm two of them responded with reference to the branch-office´s employee number, while the others reported the number of employees in total.
That is not influencing the segmentation of the respondents, but it can address the problem regarding the necessity of investigating if there are general guidelines for the selection of 3PL

coming from the international corporate head quarter, or if each branch office can decide independently, accordingly to their working functions.
Four companies out of five outsource to 3PL, primarily warehousing and transportation, the last one company has been excluded from the data analysis because it doesn´t use 3PL.

Managerial aspects in the relationship with a 3PL:

The results related to the questions investigating the managerial aspects in the relationship with a 3PL are presented below in table 6. The layout used for presenting these results has been influenced by two main causes: first, the limited number of respondents couldn´t have justified the utilization of a huge graphical presentation of the results. Second, being the response-options different from question to question, they are not so easy to collect in one graph or table with their original labeling, as it could be for a questionnaire which utilizes likert scale answer-options. However the response-options present a fixed pattern characterized by the escalation from more factory oriented to more lernstatt oriented. That permitted the author´s classification of the responses as *factory++, factory+, hybrid, lernstatt+, lernstatt++*.

Factory++ is the labeling for those response-options which represent a management form characterized by separate domains, separate decisions and networks, no cooperation, standardization, efficiency and cost saving.
Factory+ is the labeling for those response-options that want to represent a management form which is still characterized by separate domains, efficiency and standardization, but it moves slowly towards cooperation and customization that is possible to see in few common interfaces or few well defined linkages.
Hybrid as it is understandable from the word itself is a management form which presents attributes and characteristics from both factory and lernstatt.
Lernstatt+ is the labeling for those response options which represent a management form characterized by customization, cooperation, linkages, but closer to the hybrid model than the *Lernstatt++* which is characterized by innovation and full cooperation with the customer in the process of value creation to the customer and the provider at the same time, through capabilities based on knowledge.

Question	Factory++	Factory+	Hybrid	Lernstatt+	Lernstatt++
6. Management of decision making & operating model	1	2	0	1	0

7. Management of networks & cooperation	0	1	0	2	1
8. Handling the flow of physical goods	0	2	1	0	1
10. Management of the ICT system	0	2	1	0	1
12. Management of the relationship between the parties	0	0	2	0	2
13. Management of logistical solutions	0	3	0	1	0
14.Management of the financial flow and the relation between cost and degree of standardization vs innovation	0	2	1	1	0
Sum	1	12	5	5	5

Table 6: Questionnaire results 1

Also the labeling of the questions has been adapted to the results-presentation format and it comes with a short heading explaining what each question investigated. A full presentation of the results is available in the appendix.

Looking at the results reported above and focusing on the managerial aspects related to the whole logistics network as the sum of the five investigated layers, it is possible to see that, with a majority of 12 answers, the activities are primarily managed as factory+. The rest of the answers are equally distributed between the hybrid, lernstatt+ and lernstatt++ form of management, with 5 answers each. Worth to notice is that the respondents outsource primarily factory services as warehousing and transportation, but they also want a form of management of the relationship with a 3PL which has attributes typical of factory, hybrid and lernstatt.

Having being the instruction for the fulfillment of the original version of the questionnaire not so clear, it is hard to say if the respondents referred their responses to a specific relationship with a 3PL, or if they answered in general mixing information related to different relationships or if they answered even more in general thinking to the type of relationship they would like to have with a 3PL. This incomprehension should disappear with the utilization of the newer version of the questionnaire. The researcher does accept the assumption that the answers are referred to relationships, which the customers have had with 3PLs, where primarily factory services were outsourced, as indicated in q.4. The emerging tendency goes in the direction of the requirement of performance and efficiency and at the same time customization and

innovation with more cooperation also for basic services, which, according to the theory of Prockl et al. should be managed in a standardized manner by the 3PL with no interference with the customer.

Looking at the majority of results of the individual questions, it emerges that customers, while they are still more incline to select 3PL that work with their own operating model (q. 6), present their own efficient solutions to the client (q. 13), can ensure efficiency and standardization in the handling of the flow of physical goods (q.8), work with own ICT system (q. 10) and can offer cost saving through standardized services (q. 14) all in a more factory manner, they also would like to implement the level of collaboration and shared networks with the 3PL (q. 7) and they would create strong trust relationship (q. 12). The latter can be explained as the request for efficiency, effectiveness and performance at a more operational level, together with the request and preference for strong trust relationship, cooperation and customization with the 3PL at a more relational level.

<u>General questions about the importance of factory-related and lernstatt-related attributes in the selection of 3PL:</u>

Questions 9, 11 and 17 wanted to investigate in a more general manner, thus not related to a specific relationship with a 3PL, the importance of different factory-related, lernstatt-related attributes and CSR in the selection of 3PL.

The three questions differ in their purpose, where question 9 investigate the importance of 5 attributes in relation to each other, question 11 investigate the absolute importance of each single attribute. Question 17 investigates if the customers have clear preferences for sets of factory-related attributes or lernstatt-related attributes or hybrid form. The results from these three questions can indicate general preferences for 3PL selection and can be compared with the results of the first block of questions in order to investigate matches or discordance from the theory.

The importance of both having question 9 and 11 is in the fact that the two questions complete each other and can save the researcher from making wrong conclusions. In fact, while in question 11 all attributes could result important attributes, it is only with question 9 that it is possible to see them ranked in relation to each other and understand how they really influence the customers´ selection choice for 3PL in order of importance. The list of attributes in question 9, as explained before, contains only five attributes because it should result easy to the respondent to have an overview of all attributes when ranking them. The list in question

11 contains the same attributes as in question 9 plus four extras, total of nine. It could be claimed that the two lists should be alike in order to make the comparison between the absolute and relative importance of attributes more complete.

Results from questions 9 and 11 are presented below in table 7.

Ø= Mean

Order	Question 9 – ranking of the importance of the attributes when choosing a 3PL.		Question 11 – absolute importance of attributes for choosing a 3PL.	
	Ordered in relation to each other.	Ø	Ordered according to absolute importance.	Ø
1	Customer orientation	3,75	Cooperation	4,75
2	Cost saving	3,50	Efficiency; Information transparency	4,50
3	Efficiency	3,00	Flexibility	4,25
4	Social and environmental sustainability	2,50	Cost saving	4,00
5	Innovation	2,25	Customization; Social & environmental sustainability	3,25
6			Innovation; Financial transparency	3,00

Table 7: Questionnaire results 2

In the analysis of the results in table 7, the mean is only used to provide the ordering of attributes, but the numbers are not to be compared as they are provided by two different scale. However it is possible to compare the ordering.
What reported in table 7 shows that all attributes listed in question 11 are important to customers, scoring high, and some can also have the same placement on absolute importance. But when ordered according to the importance that they have in relation to each other, the customers are due to make a choice and rank them in order from the most to the least important selection criterion. That shows a different placement of the attributes.

The five most important attributes according to q.11 are *cooperation, efficiency, information transparency, flexibility and cost saving*, where *cooperation* has a very little standard deviation (0,5) and it is rated “5” by three out of four respondents and “4” from the last respondent. *Efficiency* follows with also a little standard deviation (0,58) where 50% of the respondents

rated it “5” and 50% rated it “4”. That indicates that both factory- and lerstatt-related attributes are very important to customers.

From q.9 it is possible to understand that if analyzed in relation to each other, the top three attributes are *customer orientation*, a lernstatt-related attribute, followed by two factory-related attributes, *cost saving and efficiency. CSR and innovation* follow respectively as number 4 and 5.

Taking into consideration both questions together it seems that customers still make their decision for 3PL with primarily factory capabilities but they evaluate lernstatt-related capabilities as being very important too, maybe for the further development of relationships with 3PL.

Results from question 17 are presented below in figure 7:

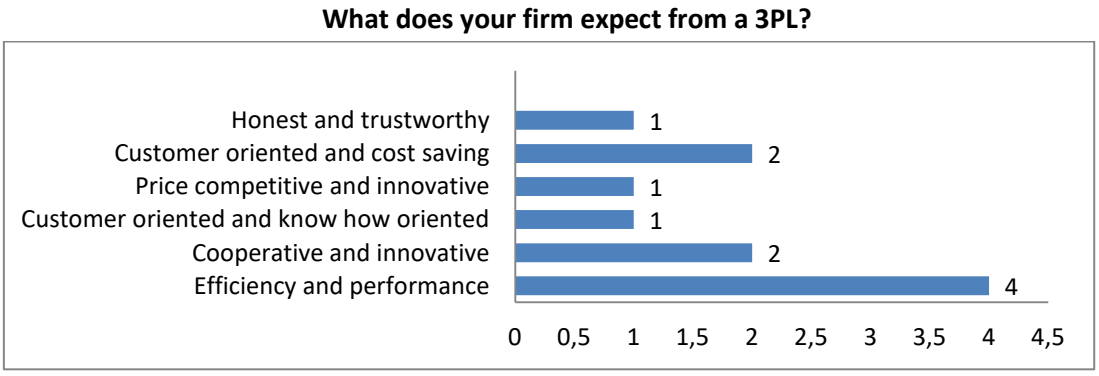

Figure 7: Questionnaire results 3

The most noticeable result emerging from question 17 is that all respondents selected *efficiency and performance*, which are categorized as factory-related attributes, as the attributes they expect from a 3PL. That makes these two attributes important selection criteria. In addition 50% of the respondents selected *cooperative & innovative*, a lernstatt-related set of attributes, and *customer oriented and cost saving*, which is a hybrid form between factory and lernstatt.

These results indicate that, especially for companies outsourcing a majority of operational and repetitive activities of the factory type (as in q. 4), it is common to expect efficiency and performance from the 3PL they outsource to. Cooperation and customization are however selected and recognized as important. In fact, according to the 2016 annual report on third-party logistics by Langley & Capgemini (2016), both 3PL and customers agree that collaboration is a worthy method for gain cost- and services-improvements.

The data analyzed so far could indicate a tendency towards the so called phenomenon of mass customization. This is going to be discussed in the next chapter.

It is interesting to see the results from question 14 in relation to question 15; both questions want to investigate the financial layer of the logistics network. Question 14 indicates a customers' preference for competitive prices, question 15 indicates a general preference for financial transparency. The contrast seen in these responses can be caused by misunderstanding of the questions or the answer-options, or because both things are important to customers, although cost is still a priority. Questions number 16 doesn't add significant data and therefore is not analyzed. Questions 15 and 16 have not been included in the new version of the questionnaire because their contribution to investigating the research problem is not relevant.

Questions regarding social and environmental sustainability

Questions 18, 19 and 20 wanted to investigate if social and environmental sustainability is a criterion for choosing 3PL. What emerged is reported in table 8.

Question	Results
18. How important is for your choice that the 3PL holds and practices a corporate social responsibility policy?	1: 0 2: 1 3: 0 4: 2 5: 1
19. How important is for your choice that the 3PL works with environmental sustainable solutions?	1: 0 2: 1 3: 0 4: 2 5: 1
20. Do you evaluate the 3PL social and environmental performances as a possibility to gain competitive advantage for your supply chain?	Yes: 2 No: 2

Note: Likert-scale from 1-5, 1: Not important 2: Less important 3: Uncertain 4: Important 5: Very important

Table 8: Questionnaire results 4

Considering the positive answer-options *important and very important* together, it is possible to say that the majority of the respondents evaluate the 3PL´s engagement and performance in social and environmental sustainability as important in their choice for the 3PL (q. 18,19).

However the 3PL´s performance in sustainability is evaluated as been a possibility for supply chain competitive advantage by the half of the respondents, while the remaining 50% don´t mean it can bring competitive advantage. The findings will be evaluated in relation to the theory in the next chapter.

8 Discussion

The aim of this chapter is to discuss the research problem and try to respond to the research questions. The results obtained by the gathered empirical data are going to be analyzed and evaluated in relation to the relevant theories.
Because of the already explained limitation of this research, which focuses on the early steps of the whole investigative process, it will not be possible to generalize the empirical findings collected. That will have big influence on the following discussion, where the readers need to be aware of, at what is going to be discussed can only indicate a tendency. Thus, it is not possible to make general conclusion based on it.

The research´s broader scope is that of investigating the selection criteria for third-party logistics from a customers´ perspective with the purpose to propose a positioning strategy and relative business model to 3PL. The investigation was delimited by two main parameters: firstly it was decided to test how far the theoretical framework from Prockl et al. matches the real requests and preferences from customers. As stated before, the framework proposes a clear distinction between 3PL factory and 3PL lernstatt with clear distinct forms of value propositions, value architecture and management of the relative logistics network.
Secondly it was decided to investigate the influence of social and environmental sustainability in the selection of 3PL.

With the support of relevant theories and literature, the author formulated two hypotheses, which were an attempt to respond to the research questions. Now in the discussion chapter, the hypotheses will be analyzed in relation to the empirical results and secondary data from relevant articles.
Following the same order as the parameters have been presented, the author will first discuss the parameter regarding 3PL factory vs 3PL lernstatt and secondly the parameter involving social and environmental sustainability.

8.1 The discussion regarding the investigation of selection criteria for 3PL in relation to the first parameter

When the researcher decided to delimit the investigation of the selection criteria for 3PL focusing on the distinction between the model for 3PL factory and 3PL lernstatt, it was the variable "integration power" that had great decision importance. Focusing on 3PL services which are produced with the integration of systemic resources and thus gain their value from being part of a network (Prockl, Pflaum, & Kotzab, 2012) highlights the importance of the supply chain as a unit system. This system creates value for the end consumer and also for each player within the supply chain. Both 3PL factory services and 3PL lernstatt services are characterized by integrated resources which play a role in extended networks, with both more standardized services or more innovative. A supply chain that works as a unit with the common purpose of fulfilling the requests of the final customers will face increasing pressure from the increasing complex market demand at all stages. If the final customers are asking increasingly and continuously for more customized items or services, this complexity of the final demand is visible also upstream in the supply chain. That means that manufacturer or retailers face these problems every day.

It is at this point that a relationship between a customer and a 3PL can result of strategic importance for facing this situation and make both actors more competitive on the market fulfilling the complex demand from end consumers in the best way. In addition a customer-3PL provider relationship can improve effectiveness, total logistics cost reduction and produce improved services for the final consumer (Langley & Capgemini, 2016).
Upstream, not only are the shippers who ask for more complex and customized services, but also 3PLs are increasing and differentiating their service offerings in order to differentiate themselves on the market (Langley & Capgemini 2016). Therefore it is important to understand, to which extent, different 3PL capabilities are important to the customers and what are the most important selection criteria for 3PL.

When it comes to the empirical results the author assumes that the responses have been referred to previous relationships with a 3PL.
The collected data highlighted that in a relationship between a shipper and a 3PL provider, where the outsourced services were for the majority standardized factory services (as in q.4), the form of management of the whole logistics network presented both factory related attributes, hybrid attributes and lernstatt related attributes (q.6,7,8,10,12,13,14). That could

be explained by the possibility that the basic standard factory-services have been offered together with more strategic and cooperation intensive services or by the fact that respondents indicated the form of management they would have preferred, thus a kind of hybrid management. Both questions and answer-options will be more clear to interprete in the next session of the research, in that the pre-testing helped making a better questionnaire with a clearer purpose and well explained instruction.

The findings about the next set of questions are in line with the first set of results dscussed above, which have highlighted a preference for a hybrid form of management of the whole logistics network when working with a 3PL. In fact questions 9 and 11 ask the respondents to evaluate more in general the importance of pre-selected capabilities of 3PL, where the results indicated the same tendency for the preference of a hybrid combination of factory and lernstatt related attributes.
Two different lists show the same tendency (q.9,11), but while the list presenting the relative importance of attributes to each other shows that *cost saving* is still a relevant decision criteria, with a second place(q.9), the list presenting the absolute importance of attributes has the first three places covered by *cooperation, information transparency* together with *efficiency and flexibility* (q.11). That can indicate that shippers are more conscious about the value adding derived from more customized solutions where cooperation and strong relationships with the 3PL can enhance the competitiveness of both actors.

The last question in this set of results was created to check the coherence with previous responses (q.17). The results indicate again a preference for a hybrid form of 3PL which have capabilities of both 3PL factory and lernstatt. However the order of importance of attributes differ from the two other lists. *Efficiency and performace* have the first priority, followed by *cooperative and innovative*, *customer oriented and cost saving*.

The latter can be explained by two main tendencies related to each other, thus the fact that both shippers and 3PLs were used to focus more on outsourcing of standardized services characterized by delivery of efficiency, effectiveness and cost saving. Secondly, the offering of the 3PLs was also more limited and the relationships between shippers and 3PL providers were not so implemented. As a consequence of the fast growing market demand, which also requires more and more customization, it is possible to see a change in this scenario. Today it is possible to speak about the phenomenon of mass customization.

Mass customization requires both the phenomenon of mass production in order to achieve economy of scale and cost saving on one side, and the agility of a reactive supply chain that can fulfill the specific and customized requests from customers on the other side. Because of that it can be necessary to work at the development of a hybrid supply chain, which should melt characteristics of the lean supply chain with the agile supply chain (van Hoek, 2000).

Upstream this phenomenon can be seen in the demand from shippers for 3PLs capable of manage and solve complex and more value-adding strategic services and still delivering cost saving and efficiency. 3PLs play thus a strategic role for shippers, in that they can help fulfilling the complex demand from the market, e.g. enhancing customization through the offering of high value adding postponed manufacturing activities and thereby helping shippers to be competitive (van Hoek, 2000). Summing up, if a 3PL needs to both deliver efficiency, effectiveness, performance and cost saving on one side and customization, innovation and value adding through more complex services, which can encompass entire supply chain processes, the 3PL needs to develop a new type of organization. This organization will be the hybrid of different business units and value propositions (Stauss & Jedrassczyk, 2008).

Saying that and looking at the tendency emerging from the collected primary data together with the secondary data reported in Langley & Capgemini, 2015 THIRD-PARTY LOGISTICS STUDY - The State of Logistics Outsourcing (2015) and Langley & Capgemini, 2016 Third-Party Logistics Study - the state of logistics outsourcing (2016), the author considers the hypothesis formulated to answer the first research question approved: *According to the variety and complexity of the services outsourced from different kinds of customers, the selection criteria for 3PL can show preferences for 3PL providers being able to offer and manage a more comprehensive variety of services with attributes and capabilities of both 3PL factory and 3PL lernstatt.*

Although having approved the hypothesis and assuming that a hybrid form of management of the complex outsourced services together with contrasting value propositions to the customers is what the customers search in a 3PL, it is not possible to conclude with certainty that the framework for positioning and business model identified from Prockl et al. for 3PLs is to be modified. In fact the hybrid form, according to Stauss & Jedrassczyk (2008) is difficult to obtain. There are several factors that the 3PL needs to manage in order to shift to a hybrid organization capable to produce hybrid services.

Stauss & Jedrassczyk (2008) have already discussed this topic and they highlighted the major challenges for 3PLs in approaching the hybrid model, concerning the structure of the organization with regards to personnel, leadership and the relationship with the customer. Personnel from a factory 3PL have different capabilities than personnel from a 3PL lernstatt, where in the first model the focus is on efficiency, the most important skills for the second model are relationship-competences and problem solving skills, based on customization and innovation.
Employees of lernstatt type need to work closely together with the customer´s firm and because of that, a regular and open exchange of communication between all organizational levels is highly required. Coordination of the work is also handled in different ways. In 3PL factory the organization has a top-down hierarchy, where in a 3PL lernstatt it is more flat. With regard to the relationship with the customer, three main aspects need to me managed: *communication, performance expectation*, and *pricing.* Performance expectations need to become more flexible in a hybrid form, not being only focused on cost saving and efficiency; *pricing* can not only be decided on the basis of the transactions but need to be evaluated in relation to the value adding produced by the innovative capabilities of lernstatt employees (Stauss & Jedrassczyk, 2008).

In order for a 3PL-factory to acquire the capabilities for a more innovative and customized service-offering, three possibilities have been proposed by Stauss & Jedrassczyk (2008): to create an independent unit in the organization, to acquire an external unit that can provide innovative and customized services (of a lernstatt type) or to collaborate with a unit of this type in a network. The third and second options seem to be the more possible, in this order of preference.
The differences anchored in two very different corporate cultures are not easy to melt together and the process will require a great effort in the coordination of the two units even if it should only be a collaboration form at the beginning. In this sense it is possible to see that each unit will still maintain its value propositions and type of management, but on the long run, the cooperation between the two units will permit to each unit to gain benefits from the other and to learn to cooperate. A shared information system between the two units will be essential for their coordination (Stauss & Jedrassczyk, 2008).

The author assumes that, being the request for hybrid forms of 3PLs, capable of providing both mass services and innovative and customized solutions, at an early stage, the framework from

Prockl et al. should not be modified. That is because the services are actually still produced by two different units. The hypothesis of the author is that, with the time and more experience in the hybrid form of 3PL, it will be possible to see the two units integrated in one structure and well coordinated, but still with each its core capabilities. At the end it could be more useful to speak about *how to improve the coordination between the two business units* instead of how to melt the business units.

According to the author one possible scenario to respond to the research question, limited to the analysis of the first parameter could be as follow: *The empirical results, considered with their limitation, indicate a customers´ tendency of selecting 3PL based on both factory related criteria and lernstatt criteria. What customers want is still efficiency, effectiveness and cost cutting, implemented by value adding services which are more innovative and customized. Therefore 3PLs need to change their positioning strategy by increasing and implementing their service-offerings. This can be achieved most probably by an initial cooperation with a separate innovative business unit. The business model for the units, defined as factory and lernstatt, is not going to be modified, but what will be most important is the coordination of the units.*

The attempt of creating a unique business model for the two units could result in loss of competitiveness according to Porter´s generic strategies, which either speaks of the possibility of gaining competitive advantage through cost leadership or differentiation (Hooley, Piercy, & Nicoulaud, 2012). With two business units, each will focus on its own strategy, reaching the best results, but melting the two business units, there is the risk for the 3PL to end in a position of "stuck in the middle".

8.2 The discussion regarding the investigation of selection criteria for 3PL in relation to the second parameter

The investigation of the research problem was delimited by a second parameter: the influence of social and environmental sustainability as a criterion influencing the selection of 3PL. The choice of this delimitation was guided by the fact that sustainability has increasingly gained attention and importance especially at supply chain level, where focal firms are retained responsible not only for their own corporate social and environmental behavior, but also for their suppliers´ (Mamic, 2005).

Good performance in corporate social responsibility (CSR) is seen as a mechanism for gaining competitive advantage through good brand reputation or, if related to violation of human rights, non environmental friendly solutions or disaster, as a mechanism enhancing bad

reputation and loss of brand equity for a company and loss of competitiveness for the supply chain (Roberts, 2003).
When speaking of reputation, Roberts (2003) refers to the opinion that stakeholders (e.g. business partners, external influencers, customer groups and authorizers) hold about a company.

The importance of investigating this parameter is also related to the relationship between the high extent to which transportation is outsourced to 3PL (still the most outsourced service with 80% of users according to the 20th annual third-party logistics study by Langley & Capgemini, 2016) and the higher environmental impact of transportation compared to other outsourced logistics activities (Wolf & Seuring, 2010). Also the respondents in this research defined their outsourced services as for the majority being warehousing and transportation.

What emerged from the empirical results about the questions on sustainability criteria (18+19) is that even if 3PL´s sustainable practices are important (50%) and very important (25%) to customers in their selection of 3PL, indicating a total positive majority of responses with 75%, it is not possible to conclude that this will end in the purchase of sustainable 3PLs. First of all, as already mentioned these results are only indicative of a tendency, but also looking at the results from questions 9 and 11 it is possible to see that CSR lies at the bottom of the list of absolute important attributes that a 3PL must have (q.11) and when ranked in relation to other attributes (q. 9) CSR lies behind *customer orientation, cost saving and efficiency*.

The latter can find support in the findings of the study from Wolf & Seuring (2010), who concluded that even if there is a general interest in CSR practices from both customers and 3PLs, sustainability will not influence the choice for the selection of 3PL in forward logistics, just like order winners as price, lead time and quality will do.

As a consequence of the explained scenario, the author wants to approve the second hypothesis, which was formulated as an attempt to answer the second working question, namely regarding the influence of sustainable practices in the choice of 3PL: *Social and environmental sustainability is not a criterion influencing the customers´ choice when selecting 3PL, as the economic dimension, together with criteria such as performance and quality dominate the decision making in this choice.*

This assumption has not a critical consequence on the research question, in the sense that being sustainability not yet an influencing selection criterion for 3PLs, 3PLs don´t need to modify their positioning strategy at this time in this regard.

Sustainability concerns in the supply chain do exist, but at these days it seems something that is happening at the stage of sourcing of raw material, where typical problems are those related to violation of human rights on suppliers (Wolf & Seuring, 2010) and therefore there is more focus on cooperation regarding CSR issues between suppliers of raw materials and focal firm. Reputation concerns seem to be more related to bad reputation than to good reputation and therefore until anything goes wrong, and because of no strict regulation in this sector, strategic cooperation between 3PL and customers on sustainability issues doesn´t seem to have a meaning to be.
Carter & Rogers (2008) highlighted a list of economic advantages deriving by CSR practices within the supply chain, but that is not completely in line with the general meaning among shippers, who can´t measure the relation cost/benefits and therefore don´t want to invest in expensive and economically unsecure CSR activities. (Wolf & Seuring, 2010) (Perotti, Micheli, & Cagno, 2015). To support the above, the empirical results highlights that 50% of respondents can see a possibility of gaining competitive advantage through supply chain sustainable practices, which is not the majority.
Conducting the empirical research on a larger group of respondents will help to define more precize tendencies.

Langley and Capgemini (2015) see more positive on the development of the importance of CSR practices along the supply chain from sourcing of raw material to manufacturing and transportation. The introduction of strict low regulation on f. ex gas emission or other transport – related environmental problems, could bring changes in this scenario, in that the utilization of 3PL with the required capabilities could become of strategic importance in the fulfilling of the market demand. As of today there are supply chains proactively engaged on CSR related risk reduction, green innovative solutions, stimulating stakeholders engagement (Langley & Capgemini, 2015), but so far, regarding the outsourcing of sustainability-related services, only 3% of shippers outsource this kind of services to 3PL (Langley & Capgemini, 2015) The latter *indicates that 3PL capabilities in sustainability are not yet so important selection criteria to customers.*

This scenario changes, if the focus goes on reverse logistics supply chain. Reverse logistics as defined by Murali, Pugazhendhi, & Ganesh (2011 p. 78) is “the process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal”. Here reverse logistics services are outsourced to third party reverse logistics providers to a larger extent (34%) (Langley & Capgemini, 2016), and these services are seen as value adding services (Langley & Capgemini, 2014) (Murali et al. 2011), requiring more cooperation, exchange of information and in general a closer relationship between customer and 3PL in order to produce the service and gain cost saving, quality and effectiveness. A possible explanation of the difference related to the importance of sustainability in forward and backward logistics can be that the whole process of reverse logistics is adding direct value to the focal firm in that the process´ purpose is to recapturing value from the reutilization of raw materials. It is the process itself which is a sustainable process. In forward logistics the focal firm gains direct value through delivering the products/services to the final consumers and, because of the lack of e.g. strict environmental laws with a worldwide coverage, the process of delivering products to the final market doesn´t need to be related to sustainability. Accordingly to that, the role that 3PLs play in the two processes is more or less related to their CSR capabilities. Reverse logistics supply chain and outsourcing of reverse logistics services have not been investigated in this research.

9. Conclusion chapter

This chapter has the aim of providing the readers with the most significant argumentation of the research and to clarify the importance of the selected research problem seen in a broader context. That will lead the discussion to the possibility for deepening the created knowledge in further research.

9.1 Conclusion

The importance of investigating the customers´selection criteria for third-party logistics providers is to be seen in the broader context of the fast growing market, where the final consumers increasingly demand for customization and innovation of products and services. Upstream in the supply chain it is possible to see the matching demand for more customized and value adding services from shippers to 3PL in order to satisfy the market demand in a more competitive way. The empirical findings present two main limitations: being too

restricted in their representativeness of the population and thus not valid to indicate a generalized conclusion, and being related to the pre-test process. Despite that it is possible to see a tendency towards the request from customers for 3PLs capable of providing customized solutions, cost saving and efficiency together with a combination of attributes related to both more standardized and more innovative services.

The impact of the latter in the positioning strategy of 3PL is that logistics service providers, in order to be competitive, have to increase their service-offerings encompassing a broader variety of services. These services will require different value architecture to fulfill the different value propositions to the customers. The new developed questionnaire will better serve the purpose of analyze the criteria relevant to customers in the selection of 3PL now and to indicate the tendency within three years.

The author stated that the hybrid form of 3PL, which seems to be requested from customers, will require the coordination of two business units, each maintaining its own value architecture to fulfill its value proposition. *Coordination* instead of fusion of the two business unit, seems to be the best option in order to remain competitive on the market and not risking the positioning of "stuck in the middle", neither achieving advantage in cost leadership nor differentiation, according to Porter´s generic strategies (Hooley et al. 2012).

Regarding sustainability, the research´s empirical results indicate a tendency from customers to evaluate the 3PL´s environmental and social sustainable practices as important for their choice, but not as important as cost saving, efficiency or customization. Customers are divided in their meaning when asked about the possibility to gain competitive advantage from sustainability practices. The author stated that CSR is not yet a criterion for selecting 3PL in forward logistics, but it could gain importance, being sustainability a topic gaining more and more awareness. For now, it is not impacting radically the positioning strategy of 3PL.

9.2 Limitations and further research

This research presented the focus on the development and pre-testing of the questionnaire in order to create an original and valid tool for conducting a European empirical research investigating the customers´selection criteria for 3PL. The little number of respondents, who participated in the pre-testing can be considered a limitation of the research, however the pre-testing process does not require a high number of participants. The collection of the feedback related to the structure and comprehensibility of the questionnaire received in form of comments sent via email can be a good method of collecting feedback without putting the

respondents under pressure, but it can represent a limitation in the extent of the feedback collected. A pre-test conducted with the same method or the probing method, but in presence of an interviewer could have resulted in more extended feedback.

Despite these limitations, the purpose of the narrow thesis-focus can be considered reached: as outcome of the pre-testing process, a new implemented version of the questionnaire has been developed. This improved tool can be used to further investigate the research problem. In fact the results and conclusion presented so far are not to generalize and they are only indicating tendencies. The new questionnaire is implemented with the purpose of better investigate the current scenario for the choice of 3PL and the most important selection criteria together with the purpose of investigating the tendencies of outsourcing and selection criteria for 3PL in three years.

Another limitation of the research can be considered the fact that the research itself has not been carried out in its full process, but delimited to the first steps. The four responses collected in the pre-testing have been used to indicate tendencies, but it was not possible to present generalizable findings.

Additional further investigation can be conducted on how 3PLs need to manage the hybrid form of different services requested by customers. This further research could be conducted by utilizing a quantitative method based on online survey questionnaire or it could be used a qualitative method where 3PLs, which adopted different kinds of management, will be interviewed.

In addition regarding sustainability, it will be relevant to deeper investigate the relevance of CSR in the different stages of the supply chain and better understand these differences.

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Appendix A: Original version of the questionnaire

Selection criteria for choosing third party logistics (3pl)

Page 1

1. **Approximately number of employees in your firm:** *

2. **In which sector does your firm operate?** *

3. **Does your firm outsource to contract logistics providers?** *

   - [ ] Yes
   - [ ] No

4. **What does your firm outsource?** *

   - [ ] Primarily warehousing and transportation
   - [ ] Management of more complex logistics services

5. **Describe your firm´s mission in few words**

6. **When working with a 3pl:** *

   - [ ] You would like to work taking your own decisions and having your own operating model
   - [ ] You would like to work with only few interfaces with the 3pl and not cooperating so much
   - [ ] You would neither prioritize common nor separate administration and decisions
   - [ ] You would like to discuss decisions and maybe plan a common operating model
   - [ ] You would like to take common decisions and have a common operating model

7. **When working with a 3pl:** *

- [ ] You are neither likely to share networks nor to have intense linkages
- [ ] You usually don´t like overlaps and permit only few clearly defined interfaces
- [ ] You would neither prioritize independence from your 3pl nor a close cooperation
- [ ] You work to implement the level of shared networks and interfaces
- [ ] You would like to have a very strong and close collaboration where all is shared

8. **You would like to work with a 3pl which:** *

- [ ] is much more used to handle solutions in a homogenous and standardized manner
- [ ] can ensure high efficiency through standardized solutions
- [ ] is neither putting focus on efficiency nor customization
- [ ] prioritizes flexibility and customization
- [ ] offers high innovation and a high level of customized solutions

9. **Rank these attributes from the least to the most important when choosing 3pl (from 1 to 5, where 1 is the least important and 5 is the most important)** *

Cost saving	☐
Innovation	☐
Efficiency	☐
Customer orientation	☐
Social and environmental sustainability	☐

10. **When working with a 3pl, how should the information and communication technology (ICT) be?** *

- [ ] Closed loop ICT that ensures efficiency and no interweaving of IT between the actors at all
- [ ] Separate ICT with as less interweaving of IT as possible - communication primarily based on data transfer
- [ ] An efficient ICT system enabling more information transparency
- [ ] Project oriented interweaving of ICT
- [ ] Very intense interweaving of ICT through all actors in the supply chain that creates information transparency

11. How important are these criteria when you have to choose the 3pl you would like to work with? Give a score out of 5 to each attribute, where 5 means very important. *

	1	2	3	4	5
Customization	◯	◯	◯	◯	◯
Efficiency	◯	◯	◯	◯	◯
Innovation	◯	◯	◯	◯	◯
Cost saving	◯	◯	◯	◯	◯
Cooperation	◯	◯	◯	◯	◯
Financial transparency	◯	◯	◯	◯	◯
Social and environmental sustainability	◯	◯	◯	◯	◯
Information transparency	◯	◯	◯	◯	◯
Flexibility	◯	◯	◯	◯	◯

12. What could best convince your firm to outsource to a given 3pl? *

- ☐ A 3pl branding itself for its independence and performance capability
- ☐ A 3pl branding itself as efficient and aware of the importance of being flexible
- ☐ A 3pl branding itself as efficient and customer oriented
- ☐ A 3pl branding itself as customer and innovation oriented
- ☐ A 3pl branding itself for its collaboration and trust relationship creation capability

13. When discussing logistics solutions with a 3pl, you do expect that: *

- ☐ it is primarily the 3pl´s task to provide efficient solutions
- ☐ the 3pl will propose efficient solutions to be approved by the customer
- ☐ the 3pl and the customer will intensify the collaboration to find and discuss solutions depending on the type of problem
- ☐ the 3pl and the customer will strive together to find the best solution
- ☐ the 3pl and the customer work closely together and have common decision policy

14. From a financial perspective, what kind of 3pl would your firm select? *

- [ ] A 3pl offering efficient services at very competitive prices
- [ ] A 3pl offering standardized services and cost saving
- [ ] A 3pl trying to offer customized services at competitive prices
- [ ] A 3pl that works for increase its own and the customers´profitability at the same time
- [ ] A 3pl offering innovative services and know how implementation through shared costs and benefits

15. How important is it for your firm to have financial transparency through the whole supply chain? *

- [ ] not important
- [ ] less important
- [ ] uncertain
- [ ] important
- [ ] very important

16. Complete this sentence according to your firm´s point of view. Financial transparency through the whole supply chain: *

- [ ] is utopia
- [ ] gives the employee better possibility to take the right working decisions
- [ ] doesn´t give any advantages
- [ ] harms the competitivity of the single actors
- [ ] _____

17. **Which of these sets of attributes describe best what your firm expects from a 3pl? You can choose more than one or write your own preference below** *

- [ ] efficiency and performance
- [ ] cost saving and independence
- [ ] cooperative and innovative
- [ ] customer oriented and know how oriented
- [ ] price competitive and innovative
- [ ] efficient and innovative
- [ ] customer oriented and cost saving
- [ ] price competitive and financial transparency
- [ ] _____

18. **How important is for your choice that the 3pl holds and practices a corporate social responsibility policy?** *

- [ ] not important
- [ ] less important
- [ ] uncertain
- [ ] important
- [ ] very important

19. **How important is for your choice that the 3pl works with environmental sustainable solutions?** *

- [ ] not important
- [ ] less important
- [ ] uncertain
- [ ] important
- [ ] very important

20. **Do you evaluate the 3pl social and environmental performances as a possibility to gain competitive advantage for your supply chain?** *

- [ ] yes
- [ ] no

Appendix B: First general email sent to companies

The email was sent to retrieve the correct email address of the logistics department

"Hi,

I´m a graduate student at the Copenhagen Business School and I´m writing my master thesis about the customers´ selection criteria for third-party logistics providers. I would like to send my master thesis´ survey to whom, in your company, is dealing with logistics outsourcing tasks. I really hope you can help me sending the email address of the right department or person.

Best regards

Francesca Simicich"

Appendix C: Email sent with the questionnaire

"Object: Master Thesis questionnaire within the field of logistics outsourcing

Hi,
I am a graduate student at the Copenhagen Business School and I am writing my Master´s Thesis about the "customers´selection criteria for third party logistics providers (3pl)".
I carefully selected your company for the pre-test of my survey and I would really appreciate your help to fulfil it.
If you are not dealing with logistics outsourcing tasks and you think your colleague could be the right person to answer the questionnaire, please forward this email to her/him.
The questionnaire is anonymous and it includes 20 questions, primarily multiple choice questions.
If you select the wrong answer and you would like to change it, please tick again on the selected answer to clear it and then choose again.
Link to the questionnaire [UNDERSOEGELSESLINK]
I would also appreciate your feedback about the comprehensibility and structure of the questionnaire.
You are welcome to contact me at frsi13ab@student.cbs.dk
I thank you in advance for your precious help and for your time.

Best regards
Francesca Simicich"

Appendix D: Follow up email

Object: Reminder about Master Thesis questionnaire within the field of logistics outsourcing

Hi,
I sent you an email with the link to my master thesis questionnaire about the selection criteria for third party logistics providers one week ago, and I would kindly ask your help again for the fulfillment of the questionnaire.
I can immagine that this is time-consuming for you, but it is very important for the findings and the good results of my project.
If you are not directly involved with logistics outsourcing tasks, please, forward this email to the right department.
I really appriciate your help.
Here is the link to the questionnaire: https://www.onlineundersoegelse.dk/s/4808b03

Best regards
Francesca Simicich

Appendix E: Pre-testing - Respondents´ feedback

Respondent 1:
Dear Francesca,
I understood and appreciated your line of questioning, which comes across as consistent and logical, but I must admit that I needed to read some of the multiple choices several times to understand the significance of each answer. I wonder if it would be easier to set up some kind of overall argument instead and then give the choice of 'not at all', 'to a low degree', 'to some degree', to a high degree' and 'precisely' in order to make it clear how you yourself rate the choice of answers. When you vary the choices like you do, it will play a too big role how different respondents read different answers, and this obviously introduces some uncertainty…
I very much hope this is helpful, and wish you good luck with your thesis!
Best regards / Med venlig hilsen / Mit freundlichen Grüßen

Respondent2:
Dear Francesca,
I gave the best answers from my point of view, but in order to be sure that you get the correct understanding
I think I would need to have explained the company's whole logistic set-up in the different supply chains.

As a feedbak to the survey it would have been good to have a thorough explanation and definition of 3PL and what kind of services we talk about.
I work in a supplier management function and contract transport companies for Tetra Pak, both 3PL's and carriers.
Best regards

Respondent3:

Hi Francesca,
I have submitted the questionnaire. Sorry for delay but I need some time to properly finalize it.
One thing I would like to put at your attention is that for choosing third party logistics providers it is quite important to define which kind of effectiveness we require them in addition to cost saving (= efficiency).
This because it requires for our business to manage a lot of activities ahead the logistics operations.
I point out this because in the questionnaire there was the accent on cost saving and efficiency but not anything about effectiveness (for example Lead time) that is quite important for the company to synchronize activities.
I hope to read a copy of your Master Thesis, because I am very interesting in it.
Don't hesitate to contact me and good luck!
Kind regards

Appendix F: Questionnaire results

Selection criteria for choosing third party logistics (3pl)

1. Approximately number of employees in your firm: *

   Antal deltagere: 4

   - 30
   - 23000
   - 100000
   - 50

2. In which sector does your firm operate? *

   Antal deltagere: 4

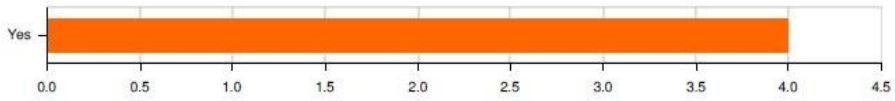
   - Food
   - Food industry
   - FMCG
   - automotive

3. Does your firm outsource to contract logistics providers? *

Antal deltagere: 4

4 (100.0%): Yes

- (0.0%): No



4. What does your firm outsource? *

Antal deltagere: 4

4 (100.0%): Primarily warehousing and transportation

- (0.0%): Management of more complex logistics services

5. Describe your firm´s mission in few words

Antal deltagere: 4

- Quality, trust, sustainability, credibility
- We work for and with our customers to provide preferred processing and packaging solutions for food.
- Make to[illegible]
- We love cars and want people to enjoy fulfilling lives through cars.

file:///?url=result_det&uid=667067&f_rid=28266633

6. When working with a 3pl: *

Antal deltagere: 4

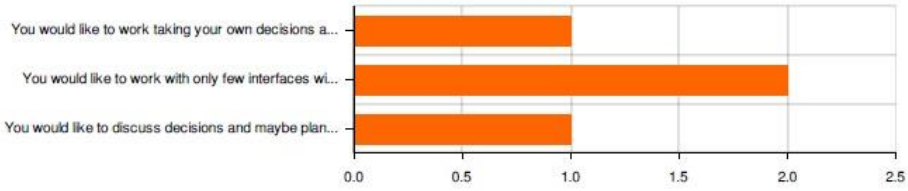
1 (25.0%): You would like to work taking your own decisions and having your own operating model

2 (50.0%): You would like to work with only few interfaces with the 3pl and not cooperating so much

- (0.0%): You would neither prioritize common nor separate administration and decisions

1 (25.0%): You would like to discuss decisions and maybe plan a common operating model

- (0.0%): You would like to take common decisions and have a common operating model



7. When working with a 3pl: *

Antal deltagere: 4

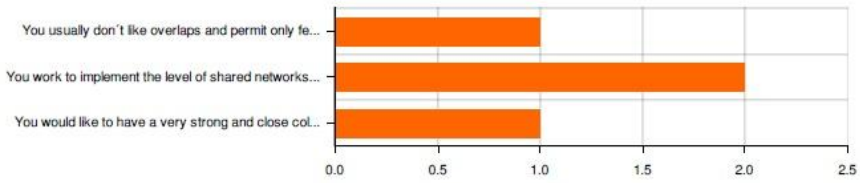
- (0.0%): You are neither likely to share networks nor to have intense linkages

1 (25.0%): You usually don ´t like overlaps and permit only few clearly defined interfaces

- (0.0%): You would neither prioritize independence from your 3pl nor a close cooperation

2 (50.0%): You work to implement the level of shared networks and interfaces

1 (25.0%): You would like to have a very strong and close collaboration where all is shared



8. You would like to work with a 3pl which: *

Antal deltagere: 4

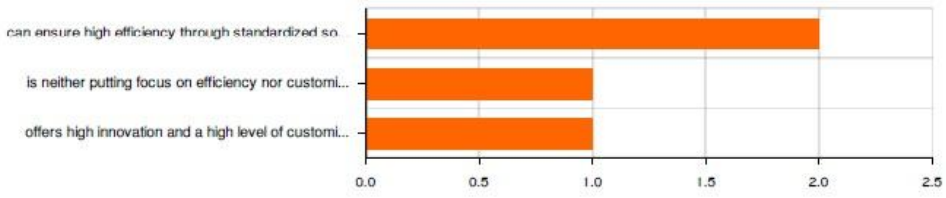
- (0.0%): is much more used to handle solutions in a homogenous and standardized manner

2 (50.0%): can ensure high efficiency through standardized solutions

1 (25.0%): is neither putting focus on efficiency nor customization

- (0.0%): prioritizes flexibility and customization

1 (25.0%): offers high innovation and a high level of customized solutions



9. Rank these attributes from the least to the most important when choosing 3pl (from 1 to 5, where 1 is the least important and 5 is the most important) *

Antal deltagere: 4

	1. Kolonne	
	Σ	Ø
Cost saving	14,00	3,50
Innovation	9,00	2,25
Efficiency	12,00	3,00
Customer orientation	15,00	3,75
Social and environmental sustainability	10,00	2,50

10. When working with a 3pl, how should the information and communication technology (ICT) be? *

Antal deltagere: 4

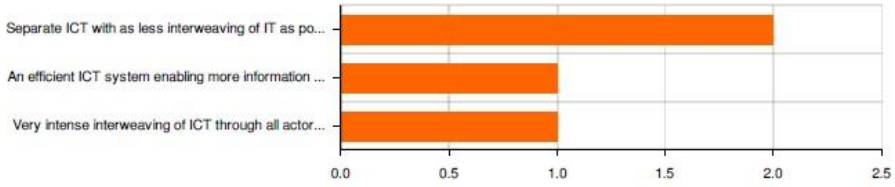
- (0.0%): Closed loop ICT that ensures efficiency and no interweaving of IT between the actors at all

2 (50.0%): Separate ICT with as less interweaving of IT as possible - communication primarily based on data transfer

1 (25.0%): An efficient ICT system enabling more information transparency

- (0.0%): Project oriented interweaving of ICT

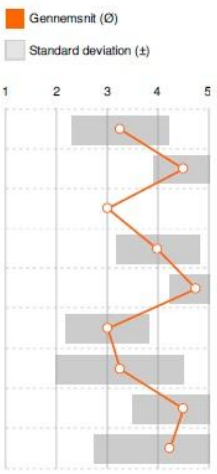
1 (25.0%): Very intense interweaving of ICT through all actors in the supply chain that creates information transparency



11. How important are these criteria when you have to choose the 3pl you would like to work with? Give a score out of 5 to each attribute, where 5 means very important. *

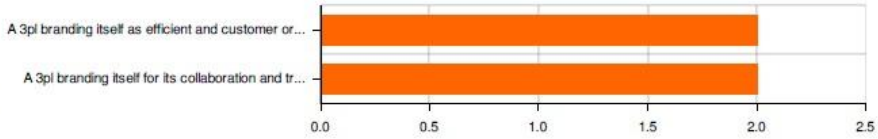
Antal deltagere: 4

	1 (1)		2 (2)		3 (3)		4 (4)		5 (5)			
	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%	Ø	±
Customization	-	-	1x	25,00	1x	25,00	2x	50,00	-	-	3,25	0,96
Efficiency	-	-	-	-	-	-	2x	50,00	2x	50,00	4,50	0,58
Innovation	-	-	-	-	4x	100,00	-	-	-	-	3,00	0,00
Cost saving	-	-	-	-	1x	25,00	2x	50,00	1x	25,00	4,00	0,82
Cooperation	-	-	-	-	-	-	1x	25,00	3x	75,00	4,75	0,50
Financial transparency	-	-	1x	25,00	2x	50,00	1x	25,00	-	-	3,00	0,82
Social and environmental s...	-	-	1x	25,00	2x	50,00	-	-	1x	25,00	3,25	1,26
Information transparency	-	-	-	-	1x	25,00	-	-	3x	75,00	4,50	1,00
Flexibility	-	-	1x	25,00	-	-	-	-	3x	75,00	4,25	1,50



12. What could best convince your firm to outsource to a given 3pl? *

Antal deltagere: 4



- (0.0%): A 3pl branding itself for its independence and performance capability

- (0.0%): A 3pl branding itself as efficient aware of the imp being flexible

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2 (50.0%): A 3pl branding itself as efficient and customer oriented

- (0.0%): A 3pl branding itself as customer and innovation oriented

2 (50.0%): A 3pl branding itself for its collaboration and trust relationship creation capability

13. When discussing logistics solutions with a 3pl, you do expect that: *

Antal deltagere: 4

- (0.0%): it is primarily the 3pl´s task to provide efficient solutions

3 (75.0%): the 3pl will propose efficient solutions to be approved by the customer

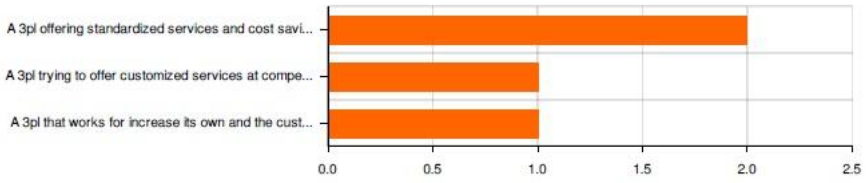
- (0.0%): the 3pl and the customer will intensify the collaboration to find and discuss solutions depending on the type of problem

1 (25.0%): the 3pl and the customer will strive together to find the best solution

- (0.0%): the 3pl and the customer work closely together and have common decision policy

14. From a financial perspective, what kind of 3pl would your firm select? *

Antal deltagere: 4



- (0.0%): A 3pl offering efficient services at very competitive prices

2 (50.0%): A 3pl offering standardized services and cost saving

1 (25.0%): A 3pl trying to offer customized services at competitive prices

1 (25.0%): A 3pl that works for increase its own and the customers´profitability at the same time

- (0.0%): A 3pl offering innovative services and know how implementation through shared costs and benefits

15. How important is it for your firm to have financial transparency through the whole supply chain? *

Antal deltagere: 4

- (0.0%): not important

- (0.0%): less important

- (0.0%): uncertain

3 (75.0%): important

1 (25.0%): very important

16. Complete this sentence according to your firm´s point of view. Financial transparency through the whole supply chain: *

Antal deltagere: 4

- (0.0%): is utopia

3 (75.0%): gives the employee better possibility to take the right working decisions

- (0.0%): doesn´t give any advantages

- (0.0%): harms the competitivity of the single actors

1 (25.0%): Andet

Svar fra tillægsfeltet:

- supports Cost-to-Serve and value-added services

17. Which of these sets of attributes describe best what your firm expects from a 3pl? You can choose more than one or write your own preference below *

Antal deltagere: 4

4 (100.0%): efficiency and performance

- (0.0%): cost saving and independence

2 (50.0%): cooperative and innovative

1 (25.0%): customer oriented and know how oriented

1 (25.0%): price competitive and innovative

- (0.0%): efficient and innovative

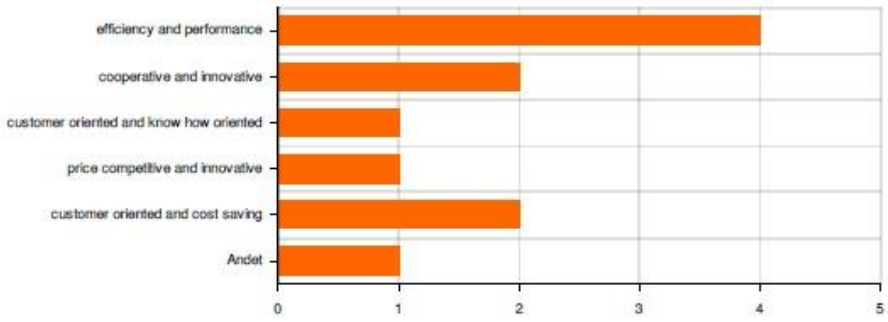
2 (50.0%): customer oriented and cost saving

- (0.0%): price competitive and financial transparency

1 (25.0%): Andet

Svar fra tillægsfeltet:

- honest (tell it like it is) and trustworthy



18. How important is for your choice that the 3pl holds and practices a corporate social responsibility policy? *

Antal deltagere: 4

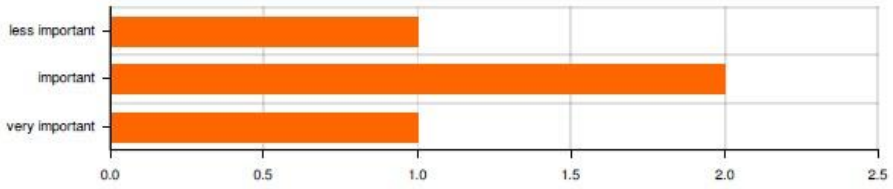
- (0.0%): not important

1 (25.0%): less important

- (0.0%): uncertain

2 (50.0%): important

1 (25.0%): very important



19. How important is for your choice that the 3pl works with environmental sustainable solutions? *

Antal deltagere: 4

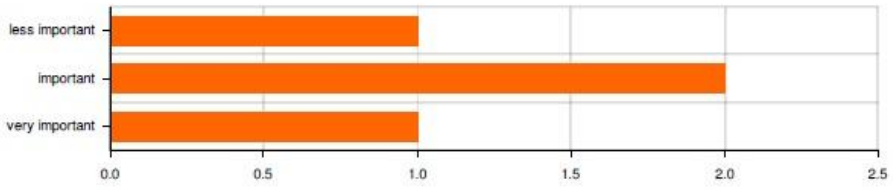
- (0.0%): not important

1 (25.0%): less important

- (0.0%): uncertain

2 (50.0%): important

1 (25.0%): very important



20. Do you evaluate the 3pl social and environmental performances as a possibility to gain competitive advantage for your supply chain? *

Antal deltagere: 4

2 (50.0%): yes

2 (50.0%): no