



**UNIVERSITY OF GOTHENBURG**  
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**Master of Science in International Business & Trade**

**Supply Chain Risk Management During the Covid-19 Pandemic**

*From the perspective of global logistic providers*

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## **Abstract**

The fundamental role that global logistics providers serve does not only concern their active role in transporting goods from one location to another and the participation within global supply chains does not only allow for great organizational opportunities, but high risks are involved. Therefore, supply chain risk management is a crucial factor for organizations to manage their activities within these global networks, especially during the ongoing global disruption of the Covid-19 pandemic. This study thereby investigates how global logistics providers have managed the risks of an ongoing global disruptive event.

To gain a deeper understanding of the perspective of global logistics providers, a multiple case study was conducted with the participation of eleven case companies present in the Gothenburg region with active participation in global supply chains. Interviews were conducted with a semi-structured format and the multiple case study was carried out in an extensive approach to seek common patterns and contrasting findings among the cases, to further elaborate with existing theory to seek for analytical generalizability.

The main findings of this study are that risk management permeates the daily work of individuals within the case companies regardless of their assigned organizational role and that the flexibility approach is the best risk management strategy for global logistics providers to minimize impacts caused by a disruption. This study contributes to existing literature by taking the perspective of global logistics providers within global supply chains, and by studying risk management during a global disruption.

**Key words:** Supply Chain Risk Management, Covid-19, Global Logistics Providers, Risk, Disruption

## Acknowledgement

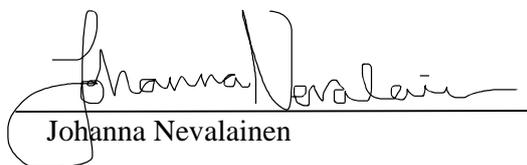
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## List of Abbreviations

GLP- Global Logistics Provider

KPI- Key Performance Indicators

IB- International Business

MNC- Multinational Corporation

# 1 Introduction

*The introduction chapter serves to introduce the reader with the background of the study and the core term of Global Logistics Providers, followed by the problem discussion which introduce the scenario event of the Covid-19 pandemic and the formulated research question and purpose of the study is presented as well as delimitations of the study. Lastly, the outline of the thesis gives an overview and guidance of the structure of the study.*

## 1.1 Background

For the past years, firms' international presence and the world economy has changed, with more firms expanding outside of their countries of origin. Through globalization more firms are locating parts of their operations in geographically dispersed locations and the creation of global supply chains has connected the world economy through production networks (Farrell & Newman, 2020). The current global disruptive event of the Covid-19 pandemic has caused significant effects on global trade with stops in global production, ports closing, and reduced work force due to national regulations and worsened economy, causing a disruptive impact on the participants within global supply chains.

Researchers acknowledged early on the potential effects and large implications of the pandemic throughout different sectors. For global supply chains in particular, since the spread of the virus initiated in China which plays a key role in international trade, not least as a producer of input goods, the indirect effects on participating firms throughout the global supply chains were soon felt (McKnibbin & Fernando, 2020; Baldwin & Tomiura, 2020). Sforza and Steininger (2020) describe the Covid-19 pandemic to be the "biggest production disruption in the recent world history". The Covid-19 pandemic is, unlike other non-economic disruptions such as natural disasters, a global disruption. This since all participants within global supply chains are not only indirectly affected through one link in the chain, but all links are directly affected through the surroundings in which they are located (Ibid.). Unlike Sweden, many countries have forced lockdowns, which have caused firms whose work cannot be carried out from home to shut down. The possibility to execute your job from home is referred to as *teleworkability* by Sforza and Steininger (2020), who argue that the performance and survival of firms in different sectors during Covid-19 will be partly determined by their teleworkability.

Global supply chains hold the network between suppliers, producers, transport and logistic providers, distributors, and retailers spanning across continents with the common objective among the participants of delivering a product and/or service to the end consumer (Sodhi & Tang, 2012). The participants in global supply chains are more vulnerability towards disruptions, which can cause significant consequences in their activities from any unforeseen event (Sodhi & Tang, 2012; Manuj & Mentzer, 2008). The kind of unforeseen events that can arise require action in different parts along the supply chain but could to a large extent interfere the whole supply chain (Dicken, 2015).

The transport and logistics sector plays an important role in global supply chains and is characterized as a facilitator in the activities spanning across the whole supply chain, from the initial transport of raw materials until the final arrival of the goods at the end consumer (Dicken, 2015). However, the importance of logistics and distribution processes is not always acknowledged as a facilitator more than just being expected to function no matter the situation. The logistic sector and the transportation of goods are driven by consumer demand which makes it vulnerable to economic disruptions, such as the economic recession following the financial crisis in 2008, which led to a decreased demand of logistic operations (Ibid.). Although being an early assessment, Shrestha et al. (2020) state how the Covid-19 pandemic is likely to cause a more severe economic recession than the disruptive event of the 2008 financial crisis. Others agree on the probability of such an economic recession, albeit with a more cautious estimation of the degree of it (Sutkowski, 2020; Sforza & Steininger, 2020; McKibbin & Fernando, 2020). In addition to the Covid-19 pandemic, the final implementation of Brexit occurred simultaneously which also has interfered the flow of global trade. Condon et al. (2020) predict that the effects of Covid-19 on logistics and the transportation of cargo will vary among logistics suppliers, depending on the mix of commodity they transport and what countries their transport routes include. They further state that the learnings from the pandemic, i.e., what goods that was affected the most and the least, should be accounted for in future risk management strategies (Ibid.).

In this study, we define companies within the transport and logistics sector offering transport, warehousing and/or supply chain management solutions in their international operations as *global logistic providers (GLPs)*. This definition seeks to include larger firms such as MNCs as well as smaller firms that operates on a global scale, where we wish to emphasize upon that firms within the definition of GLPs are active within global supply chains through their

extensive logistic and transport service offerings. The transport offering includes sea transport, road, train, and air freight and the offering of warehousing services is more than simply the storage of goods, where services such as split of goods is offered. Supply chain management offering appears among GLPs where they provide the service of supply chain implementation and integration, leading to more efficient and effective supply chains. The GLPs thus play a key role and as production networks expands, the participants within the global supply chain expect more efficient and rapid logistics activities, generating a higher complexity in organizing the logistics processes (Dicken, 2015).

To manage the large complexity of global supply chains and the increased exposure to risks it infers, global logistic providers must keep proper supply chain risk management (Siu et al., 2019; Sodhi & Tang, 2012; Manuj & Mentzer, 2008). Organizations are subject to a variety of risks that occur both internally and externally and these must be managed to maintain operational levels (Sodhi & Tang, 2012). Some risks occur frequently and can be identified in advance, which enables greater proactive measures to minimize any impact from risk (Choi et al., 2016). However, with disruptions such as Covid-19, organizations are to a lesser extent able to prepare as disruptions come with a high level of uncertainty (Basu & Wright, 2017). During such times, the supply chain risk management and the organizationally set processes and practices become even more crucial to ensure not only the maintenance of operational levels, but even organizational survival.

## **1.2 Problem Discussion**

It is evident that the participation in global supply chains brings risks since it increases the participants vulnerability towards external risks that occurs within the supply chains. To manage risks, both internally and externally, organizations must construct proper and comprehensive risk management strategies (Waters, 2007; Hopkin, 2017; Sodhi & Tang, 2012).

The Covid-19 pandemic quickly caused devastating effects on businesses, economies, and human life (Shrestha et al., 2020; Sforza & Steininger, 2020) and although vaccines are currently being supplied globally, there is no certain timeline for when mass immunity will be reached, and the everyday life and business' operations can return to "normal". Other recent disruptive events such as the 2008 financial crisis and Brexit could, in contrast to Covid-19, be expected and identified as risks and measures could proactively be taken. While many early in

2020 thought that the spread of the virus and the economic effects would not be that significant, we now have been forced to re-evaluate the situation and have reached a state of constant uncertainty about how the situation and its effects will be prolonged and what the final global implications will be.

With an ongoing global pandemic with unknown final effects, GLPs face a complete novel situation in terms of risk management. Prior research within supply chain risk management have largely focused on risk mitigation strategies and resilience to recover from any disruptive event within supply chains (Gölgeci et al., 2020; Tang, 2006; Manuj & Mentzer, 2008), but does not touch upon how organizations manage during an ongoing disruption. Much of the existing literature within risk management focuses upon what can be done prior to and after a disruptive event, the so-called *identification, assessment, mitigation* and *monitoring* processes of risk management (Sodhi & Tang, 2012; Waters, 2007; Hopkin, 2017; Basu & Wright, 2017). In this matter we thereby see a research gap on how organizations manage these risk management processes *during* a disruptive event to adapt their risk management strategies.

Thus, we wish to examine how global logistic providers manage the circumstances of a sudden global disruption, in a situation where the disruption is ongoing rather than the pre- or post-disruption perspective. Existing literature provides no prominent suggestion for how GLPs should design their strategy to handle an ongoing disruption, as they mainly focus upon the producer or supplier perspective within supply chain risk management. The subject of interest is how GLPs participating in global supply chains manage the circumstances of an ongoing disruption from a risk management perspective, where the Covid-19 pandemic offers an opportunity to investigate whether greater measures and adaptation in the current risk management strategy must be implemented.

### **1.3 Research Question**

Based on the problem discussion and the identified research gap, the formulated research question for this study is:

***How do Global Logistics Providers (GLPs) that participate in global supply chains manage and adapt their risk management strategies during a global disruption?***

## **1.4 Purpose**

The purpose of this study is to investigate in what way global logistic providers have been affected by the Covid-19 pandemic on an individual- as well as organizational- and operational level to gain a deeper understanding of how they have managed and adapted their supply chain risk management strategies during this disruptive event.

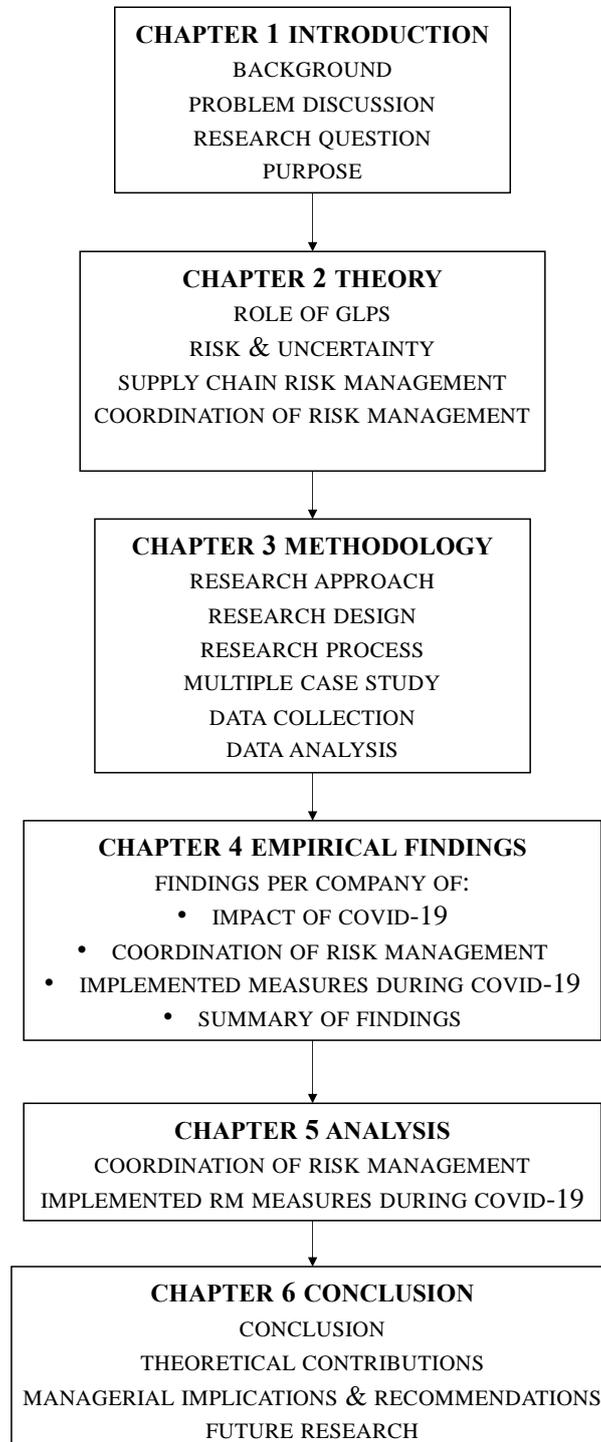
## **1.5 Delimitations**

The unit of analysis in this study is global logistic providers with a presence in the region of Gothenburg, Sweden. The unit of analysis is based upon the purpose of this study and the choice of location is based upon the authors knowledge of the region and its high importance for international trade to and from Sweden. Hence, this generates a perspective from global logistics providers being active in Gothenburg with participation in global supply chains.

This study investigates how GLPs manages the consequences of a disruption from a risk management perspective. Disruptions and risk management thereof are frequently discussed within the supply chain risk management literature although the definition of *disruptions* vary among researchers. Hence, what is regarded as a disruption depends on the theoretical framework applied and it may include risks caused by several external sources and with a varying severity of consequences. In this study, disruption is illustrated by the Covid-19 pandemic. Although the management and consequences of the Covid-19 pandemic to some extent is compared to other recent disruptions, one must be aware of that it is a unique situation which provides the opportunity to study a new and ongoing phenomenon on a global scale.

## 1.6 Thesis Outline

The figure below outlines the structure of the thesis.



*Figure 1 Thesis Outline*

## **2 Theoretical Framework**

*This chapter reviews the existing literature on supply chain risk management and outlines the theoretical framework applied in this study. First, organizational communication and the role of logistics in supply chains are covered followed by a review of the categorization of risk and supply chain risk management processes, practices and strategies.*

### **2.1 The Role of Logistics in Global Supply Chains**

The logistics sector plays a crucial role within international trade as a facilitator and participant in global supply chains. Global supply chains hold networks between suppliers, producers, logistics providers, distributors, and retailers that span across continents with the objective to deliver products and/or services to the end consumer (Sodhi & Tang, 2012). These global networks outline the participation of the more traditional logistic providers supplying transport, but the extensive service offered by logistics and transport companies within the supply chain today reach beyond transportation.

There are various definitions among authors for logistics and its processes, activities, and linkages, where the scope and approach towards these vary. The common factors we distinguish are the processes of activity flows from the origin of suppliers with raw materials along the whole supply chain to the delivery of final goods at end consumer, where logistics plays a crucial role throughout the whole chain (Vitasek, 2013; Griffin & Pustay, 2015; Memedovic et al., 2008; Rushton et al., 2017).

The role that logistics plays in the emergence of global supply chains is that organizations seek external competence for outsourcing of their logistics activities to firms that are specialized within materials management and physical distribution, which thereby creates a reliance upon efficient logistics (Memedovic et al., 2008). However, the importance of logistics and distribution processes is not always acknowledged as a facilitator more than just being expected to function no matter the situation (Dicken, 2015). The GLPs' do play a key role and as production networks expands, the participants within global supply chains expect more efficient and rapid logistics activities, which generates higher complexity in organizing the logistics processes (Dicken, 2015).

The emergence of global supply chains has a wider reach than the pre-globalization networks, which had priorly more of a local/domestic focus, whereas globalization has enabled supply

chains to reach beyond national borders generating global supply chains in international business (Meixell & Gargeya, 2005). Basu and Wright (2017) emphasize upon that this extension to global supply chains has not only generated opportunities, but there needs to be consideration upon the high complexity as well as risks involved in the participation in these global networks.

## **2.2 Defining Risk and Uncertainty**

To enable a theoretical review of the term *risk* and how it should be managed (discussed in section 2.3), we firstly need to examine what causes a risk (Yilmaz & Flouris, 2017; ISO, 2018). The term *risk* is in some supply chain risk management literature equated with the term *uncertainty* while other researchers distinguish between them.

According to the highly cited Frank Knight (1921), whose economic concept of uncertainty has been frequently used, uncertainty should not be equated with risk, rather uncertainty should be regarded as the cause of risk. Uncertainty can be divided between *uncertainty risk* that concerns knowing the potential outcome, and *genuine uncertainty* for which both the probability of occurrence as well as the potential outcome is unknown. Concerning uncertainty as the source of risk, it is agreed upon both in the International Organization of Standardizations risk management guidelines (ISO, 2018) and by Waters (2007), who states that with risk the source and the probability of occurrence is known, whereas with uncertainty the likelihood of the event to occur is unknown.

Sodhi and Tang (2012) argue that within supply chain risk management, there is need to develop a common vocabulary of risk to enable accurate management of risk. They contribute to the discussion on *risk* and *uncertainty* by defining risk as the occurrence of an uncertain event. In addition, they elaborate on the distinction between *risk* and the consequences thereof by arguing that potential consequences of a risk are not caused by the risk itself, but the response to risk.

The definition of risk within this study stands it basis upon that risk is the uncertainty of an event. The concept of uncertainty stands upon the characterization by Knight (1921) of uncertainty risk and genuine uncertainty, since the occurrence and consequences known vary in each risk situation. Hence, the risk focused upon in this study (Covid-19) concerns an uncertain event, however other types of risks (which is further discussed in 2.3.1), may be identified but with unknown or only estimated likelihood of occurrence and/or impact.

The term *risk* is often perceived as an event or situation that brings negative implications to a company, individual, or other (Yilmaz & Flouris, 2017). Based on such an interpretation, risk may be equated with *threat*. For instance, Stonebumer et al. (2003, p.8) identify that ‘Risk is a function for the likelihood of a given threat-source’s exercising a particular potential vulnerability, and the resulting impact of that adverse event on the organization.’ Thus, these authors’ definition of risk only allows for potential negative consequences of an unforeseen event.

However, according to ISO (2018), the definition of risk is determined through the source of risk, potential events and the consequence(s) and likelihood of those events. Depending on the characteristics of these components, the risk may be expected or unexpected, caused by a novel situation or through changes in circumstances and have either positive or negative effects. The effect of a risk is defined as a deviation from the expected outcome and may therefore be either positive (i.e., opportunity) or negative (Ibid.). To further clarify the inclusion of both negative and positive consequences, Hopkin (2017) divides risks into *hazard* or *pure risks* and *opportunity* or *speculative risk*. For instance, risks with potential positive impact relates to organizations sometimes taking a risk in order to attain a larger market share. Thus, this definition enables an interpretation in which the term risk includes both potential negative and positive consequences which is agreed upon by Yilmaz and Flouris (2017).

The term risk will be used throughout this study without making any distinctions regarding the inclusion of negative and positive effects, which aligns with the definitions by ISO (2018), Yilmaz and Flouris (2017), Hopkin (2017) as well as Basu and Wright (2017). However, we wish to highlight that the focus in the following sections within this theoretical chapter lies upon the sources of risks, potential negative effects caused by risks and the reasoning for why risk management is important to minimize those negative outcomes.

### **2.3 Supply Chain Risk Management**

The participation in global supply chains increases organizations’ vulnerability to risks for several reasons (Sodhi & Tang, 2012; Manuj & Mentzer, 2008). Firstly, due to increased places in which possible risks may occur. Secondly, the length of today’s supply chains limits the visibility throughout the chain, which results in lags in the decision-making. Lastly, due to interdependence between the participating organizations in the supply chains, a local disruption is felt throughout the chain (Sodhi & Tang, 2012). In addition, by outsourcing production or

services to other organizations within the supply chain, organizations vulnerability to risk increases both since they then depend upon the partner's risk management processes and strategies as well (Manuj & Mentzer, 2008). However, not all organizations within global supply chains seem to recognize that increased vulnerability (Basu & Wright, 2017).

Sodhi and Tang (2012) define supply chain risk management to include *supply chain management*, *enterprise risk management* and *crisis management*, where the former relates to 'ways to improve the operational performance of a supply chain under "normal" circumstances' (p.10). Enterprise risk management concerns compliance with financial regulations and crisis management concerns exceptional circumstances under which the main focus is upon the survival of the organization.

To assess and prepare for potentially unforeseen events and following risks, companies must ensure the development of and compliance with supply chain risk management strategies. With proper processes and strategies, organizations would under normal circumstances be able to handle regular market fluctuations and under exceptional circumstances, such caused by disruptions, maintain a basic operational level (Sodhi & Tang, 2012). With the previous definition of risk, being the uncertainty of an event, risk management should include strategies both to mitigate, respond to and recover from risks with negative consequences and strategies to capture and benefit from potential opportunities. Since there are costs associated with shielding from any risk that may occur, the decision-makers within an organization's risk management must also determine what level of risk they can accept (Talluri et al., 2013). This relates to what is emphasized upon by Sodhi and Tang (2012) regarding how although organizations asses certain potential but unlikely risks, they do not seem to invest enough resources to develop mitigation strategies for those risks. One reason for this may be that when the probability and outcome of the risk is unknown, it is difficult to assess the cost/benefit return of developing a certain mitigation strategy (Ibid.).

When examining strategies in supply chain risk management, there are numerous different approaches for how firms should manage risks within global supply chains. Wee et al. (2012) argue for mitigation- and contingency planning in handling risk pre- and post-disruption while Gölgeci et al. (2020) and Chopra and Sodhi (2004) emphasize for the need to manage the tension between efficiency and resilience in response to disruptive events.

Choi et al. (2016) argue that effective and efficient supply chain risk management should be a top priority within organizations. If no proactive risk management measures are implemented, risks may strike unnoticed, which in turn could generate a higher probability and impact of risk and thus increase the company's vulnerability towards disruptive event (Waters, 2007; Manuj & Mentzer, 2008).

Although denoted with different terminology throughout the literature, the main processes of supply chain risk management are described to be the *identification, assessment, mitigation, and response* to risks, where the first three are practiced prior to an event, while response involves actions taken after the event to manage the sequent implications of the risk (Sodhi & Tang, 2012; Waters, 2007; Hopkin, 2017; Basu & Wright, 2017). These processes permeate the supply chain risk management literature and the following sections, 2.3.1-2.3.4 account for the different stages.

## **2.4 Identifying and Categorizing Risk**

A prerequisite for the development of supply chain risk management strategies is the identification of all potential risks relevant to an organization (Basu & Wright, 2017; Sodhi & Tang, 2012; Manuj & Mentzer, 2008; Waters, 2007). The identification and categorization of risks rely upon subjective internal and external settings relevant to each organization, hence there is no categorization that fits all (Sodhi & Tang, 2012; Hopkin, 2017). In addition, Waters (2007) suggests that since an organization cannot rely upon individuals, namely managers, to identify all risks due to subjective views, limited knowledge and even reluctance to admit to certain potential risks, there must be a set practice for the identification and categorization of risk. This section provides a review of different categorizations for identification of risks from prominent researchers within the supply chain risk management literature.

Waters (2007) further identifies the main risks for companies taking part in a global supply chain to be any 'disruption to the smooth flow of materials' (p.13) throughout the supply chain. Basu and Wright (2017) categorize these risks to be external, internal, supplier or distribution risks, where disruption risk is regarded an external risk but solely denoted as potential oil production risks or terrorist threats. Risks categorized as external may however also be caused through internal sources and the other way around (Basu & Wright; Waters, 2007)

Yilmaz and Flouris, (2017) discuss five types of risks that organizations within global supply chains face which are strategic, compliance, operational, financial, and reputational risk. The

first refers to business environment, that is the local environment in which the organization operate and includes shareholders, reputation, and organizational design. Compliance risk refers to regional and/or local governance and the need to comply with those regulations. Operational risk includes risks associated with sourcing, human resources, natural disasters, and external disruptions. Financial risks include interests and exchange rates, liquidity, and customer credit, among others whereas reputational risk refers to situations or circumstances that may potentially harm the reputation of the organization (Ibid.).

Talluri et al. (2013) suggest another way of segmenting risk for organizations participating in global supply chains by adding to the categories of risk described by Tomlin (2006) and Chopra and Sodhi (2004), namely *delays* and *disruptions*. Delays are identified as recurrent but short risks (Talluri et al., 2013.), or “normal” risks that cause delays in the supply chain as described by Sodhi and Tang (2012). In contrast, *disruptions* are long but rare occurrences, by Sodhi and Tang (2012) denoted as “abnormal” risks that do not just cause delays but rather disrupt the flow within the supply chain. Talluri et al. (2013) thus add *distortions* which are caused by unexpected deviations (from the expected outcome). This categorization of risks is based upon the source of risk and its operational implications rather than identifying different risks for different segments within an organization as with Yilmaz and Flouris (2017).

Hopkin (2017) instead categorizes risks into compliance risks, hazard risks, control risks and opportunity risks, where organizations will seek to minimize the first, mitigate the second, manage control risks and seize opportunity risk.

Choi et al. (2016) argue that since logistics systems have become immensely globalized, there is a higher risk for the logistics system to fail. To account for all types of risk within risk management strategies, Choi et al (2016) divide risks and the handling of such into *disruption management* and *operational risk management*, where disruptions management accounts for risks caused by unforeseen events with unknown implications, such as natural disasters and as illustrated in this study, the Covid-19 pandemic. Disruptions management should then take ‘proactive measures by making the structure of logistics and supply chain systems agile’ (Ibid., p.2). Operational risk management should instead aim to account for the presence of uncertainties within the market, such as volatility in supply and demand, by identifying the source of risk, the potential impact of the risk and how to control the risk (Choi et al, 2016).

Although Sodhi and Tang (2012) describe delays and disruptions as two types of risks, they argue that such a categorization does not emphasize how the risks should be managed and by whom within organizations. To answer those questions, they instead suggest two other categorizations of risk. First, they distinguish between *global* and *local* risks from the perspective of an organization in global supply chains where *global risks* occur in the global context in which the supply chain operates, but its consequences may impact the entire supply chain or a particular organization. *Local risks* instead occur at the particular organization or within a market part of the supply chain and which consequences may spread throughout the entire supply chain or impact just the particular organization or market where it occurred. Second, they distinguish between supply risk, process risk, demand risk, and corporate-level risk. The first categorization of risks refers to *how* the risks should be managed within an organization and the second refers to *who* should manage the risk, by denoting the risks to different organizational segments (Ibid.).

Juttner et al. (2003) base their categorization of risk upon the interlinkages between organizations in global supply chains and the source of risk. They distinguish between risks from external sources outside the supply chain and risks from internal risk sources within the own organization or from another party within the supply chain. These risks are denoted as environmental risk sources, organizational risk sources, and network related risk sources.

For global logistics providers within global supply chains, there are numerous types of risks that must be considered. Siu et al. (2019) argue that maritime and port logistics are subject to high risks due to the large amount of cargo being handled and with ports being *key nodes* in supply chains (as recently illustrated by the obstruction and subsequent congestion caused by a Suezmax container ship<sup>1</sup> in the Suez Canal (Leonard, 2021)). Thus, since global supply chains are so highly dependent on maritime transport, risk management strategies must identify and mitigate any potential risks (Siu et al., 2019).

Table 1 presents a summary of the different identified risks reviewed in this section and the categorizations of them. This summary acts as a reference for the discussion on what risks have been highlighted to be relevant for the global logistic providers included in this study in the analysis.

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<sup>1</sup> The maximum size of a container ship that can travel through the Suez Canal

CATEGORIZATION	BASIS FOR CATEGORIZATION	AUTHORS
Internal, external, supplier, and distributor risk	Source of risk	Basu and Wright (2017) Waters (2007)
Strategic, compliance, operational, financial, and reputational risks	Organizational segmentation	Yilmaz and Flouris (2017)
Delays, disruption, and distortion risks	Consequences of risks	Talluri et al (2013) Tomlin (2006) Chopra and Sodhi (2004)
Global or local risks	Source of risk ( <i>how to manage</i> )	
Supply, process, demand, and corporate risks	Organizational segmentation ( <i>who should manage</i> )	Sodhi and Tang (2012)
Compliance, hazard, control, and opportunity risks	Frequency of occurrence and negative or positive consequences	Hopkin (2017)
Disruption and organizational risks	Frequently managed risks or rare risks	Choi et al (2016)
Environmental, organizational, and network-related risks	Internal vs external risks sources	Juttner et al (2003)

*Table 1 Summary of categorizations of risk from the literature constructed by authors*

#### **2.4.1 Risk Assessment**

When potential risks have been identified, the following assessment of those is crucial for an organization both to prioritize among risks and to allocate resources for the coming mitigation strategy (Sodhi & Tang, 2012). Risk assessment may be carried out with an internal purpose to draw upon learnings from previously occurred risks to better prevent from future, similar risks. It may also be done due to external pressure, such as regulations that require organizations to present their risk profile to concerned parties (Ibid.).

Returning to the distinction between frequent and rare risks (denoted delays/normal risks and disruptions/abnormal risks in section 2.3.1), Sodhi and Tang (2012) suggest that frequent and normal risks could and should be assessed routinely by the supply chain management whereas supply chain risk management instead should focus on the more rare/abnormal risks. Basu and Wright (2017) make no such distinction but argue that any risks must continuously be identified and assessed. Disruption risks may however be difficult to assess due to lack of previous knowledge and potentially even occurrence of risk. Various types of risks naturally require different assessment methods, but in general prioritization of risks may be based upon the likelihood of occurrence and potential impact of the risk (Sodhi & Tang, 2012). By rating risks from low to high likelihood and impact, the organization can analyze the urgency of each risk and thus prioritize (Sodhi & Tang, 2012.; Basu & Wright, 2017; Waters, 2007; Hopkin, 2017). Hopkin (2007) further argues that by inserting the risk in a graph with impact and likelihood on the axis, the organization can assess the inherent risk, which is the risk without any action taken, to the target risk which is the residual risk after action is taken. Estimating the likelihood of a risk that is yet to occur nevertheless pose some challenges. If there is no previous frequency of a risk for the estimate to rely on, the estimation of likelihood will be subjective and based on beliefs and subsequently raise concern about on whose interpretation or belief the estimate should rely on (Sodhi & Tang, 2012; Waters, 2007). Apart from certain inevitable challenges and necessary adaptations, by applying risk assessment organizations can generate policies and strategies to identify the urgency of different risks and subsequently determine a suitable mitigation approach.

#### **2.4.2 Risk Mitigation and Contingency Theory**

Risk mitigation concerns proactive measures that serves to reduce the likelihood of occurrence and/or decrease the impact of a risk after it has been identified and assessed (Sodhi & Tang, 2012; Hopkin, 2017). The alternative to mitigation is either accepting the risk, i.e., taking no measures neither to minimize the likelihood or ease the impact of the risk, but once it occurs seeking to transfer the consequences of the risk to the insurance company, or avoiding the risk completely. However, solely accepting the risk and transferring the monetary loss of it to the insurance company does not necessarily cover all potential consequences (Sodhi & Tang, 2012; Basu & Wright, 2017), yet it might appear to be the most appropriate strategy to many organizations due to the infrequency of highly risky events (Waters, 2007; Tang, 2006). Relying upon the assumption that ‘risky events are rare enough to ignore’ (Waters, 2007, p.

15) is however harmful as some may occur more often than others and cause more severe impact. Mitigation and contingency planning generate quicker and easier responses to risks once they occur, since the previous processes of identification and assessment enable organizations to prepare for the risk and thus limit the impact of it (Basu & Wright, 2017).

Another aspect of mitigation is contingency planning, which concerns to efficiently and with as little impact as possible manage the consequences caused by an event and attain a quick recovery (Wee et al., 2012). Contingency theory builds on the assumption that organizations have individual characteristics and thus the design of risk management strategies must consider internal and external conditions of the particular organization (Talluri et al., 2013). Gong and Cullinane (2018) argue that opinions of managers or organizations of how to implement different practices of their definition, assessment and mitigation of global supply chain risks may vary, which aligns with the contingency theory.

According to Chopra and Sodhi (2004), organizations within global supply chains may choose to focus either on the *redundancy* or *flexibility* approach within mitigation, where the former mainly concerns proactive measures that aims to cover a broad range of potential risks by increasing the capacity and keeping a larger inventory and/or having excess suppliers (Chopra & Sodhi, 2004; Sodhi & Tang, 2012). With the flexibility approach, the focus is instead on increasing internal capabilities to better respond to any risks and by doing so, building a better flexibility (Chopra & Sodhi, 2004). In contrast to the redundancy approach, the flexibility approach is highlighted as being more cost efficient and useful even in situations with planned changes (Sodhi & Tang, 2012). In addition, organizations do not need to invest in a high level of flexibility as usually a low level of flexibility is enough to mitigate from most risks (Ibid.). However, it might be worth considering the redundancy approach for risks that may cause severe long-term impacts to operations, such as disruptions, if it can be identified in advance, whereas for more frequent risks with relatively short-term and manageable implications, the costs of keeping constant redundancy might exceed the benefits (Rice & Caniato, 2003).

Due to the costs associated with keeping mitigation strategies, Chopra and Sodhi (2004) conclude that organizations should seek efficiency by developing a mitigation strategy that covers as many types of risks as possible. In addition, they further argue that the highest efficiency is reached if organizations in global supply chains focus on developing capacity to quickly recover from different types a of risks by increasing flexibility, rather than attempting to proactively predict and thus protect themselves from all types of risks. This is fortified by

Choi et al. (2016) who argue that with regards to disruptions management, organizations should ensure that their logistics and supply chain processes are agile in order to manage disruptive events.

### **2.4.3 Risk Response**

Disruptions, in this study illustrated by the Covid-19 pandemic, are not only difficult but sometimes even impossible to assess and mitigate in advance, thus the response during and after the disruption becomes critical to the continuance of the business. In addition to, or perhaps even due to, the difficulty to assess these types of risks, organizations seem reluctant to invest in processes and subsequent strategies to ease the implications of disruptions (Sodhi & Tang, 2012). Such reluctance is probably not due to ignorance, but rather due to certain disruptions being impossible to imagine and the spread of severe consequences hard to grasp, such as with the Covid-19 pandemic. Thus, for risks in general and for disruptions in particular, the most important aspect of supply chain risk management is how and how quickly an organization *responds* to a risk when it occurs (Sodhi & Tang, 2012; Waters, 2007).

Sodhi and Tang (2012) divide the responsiveness into the time it takes organizations to *detect the risk*, time to *design the response* and time to *deploy the response*. By continuously having set processes and practices to manage these events, organization can reduce the response time and by extension the time it takes to recover from the disruption (Waters, 2007). With the Covid-19 pandemic, *detect* entails the time it took organizations to recognize the potential spread of the risk throughout the supply chain from the outbreak in Wuhan, China.

An efficient response strategy should at least ensure that the operations and smooth flow through the supply chain are maintained and that risks are managed effectively through access to relevant resources while complying to laws and regulations (Waters, 2007). Through such management, organizations can increase their efficiency and resilience towards supply chain disruptions and maintain operational level even during major disruptions (Tang, 2006). Resilience is defined by Fiksel et al. (2015, p.82) as ‘the capacity for an enterprise or set of business entities to survive, adapt and grow in the face of turbulent change’ and relies upon how quickly an organization can recover from an unforeseen event. Touching upon the previously mentioned flexibility or redundancy approach in terms of mitigation strategies, Rice and Caniato (2003) argue that by employing one of these, organizations can increase their resilience. The necessity of resilience is also emphasized upon by Gölgeci et al. (2020), Gunasekaran et al. (2015), and Wee et al. (2012). With global supply chains the resilience upon

the GLP's is crucial, as the activities are subject to a large number of risks that due to their role in global supply chains, could have severe impact along the whole supply chain (Manuj & Mentzer, 2008).

After an organization have responded to a risk, the risk management and response strategy applied must be evaluated in relation to the final impact of the risk. To provide the organization with useful and perceptive results of their risk management processes and implemented strategy, the final impact of the risk must be contrasted to the target risk, i.e., the intended residual risk after the applied risk response (Hopkin, 2017). The supply chain literature emphasizes that such evaluation processes must be continuously practiced to draw from any lessons learned for the future management of similar risks.

## **2.5 Coordination of Risk Management**

There are not only numerous different risk management processes and strategies, but the coordination of these processes may vary within different organizations as well. The responsibility to handle a risk could be assigned to different departments and managers depending on the type and priority of the risk (Hopkin, 2017; Basu & Wright, 2017).

The aforementioned distinction of *normal* and *frequent* risks by Sodhi and Tang (2012) is incorporated as that each assigned department within organizations has their daily risks that may not be clearly stated as actual risks but are continually being taken into consideration internally per specific department. If examining the explicit supply chain risk management risks these could be set with processes and measures of a set hierarchal order or following the decision-making structure for the organization. Hopkin (2017) defines three stages of risk responsibility set within organizations as *setting required risk standards*, *implementing risk standards* and *monitoring risk performance*. Although it is emphasized that all individuals within an organization need to be made aware of their risk management responsibilities, it may not always be emphasized upon the common view internally regarding the importance of risk management (Hopkin, 2017). A set structure of risk management responsibilities and processes with continuous assessment and flexibility to a certain extent, could lead to better decisions and outcomes for the organization (Basu & Wright, 2017).

If examining assigned responsibilities on fundamental organizational decision making, from hierarchal decision making (top-down), the top management has a fundamental role in risk management for setting the required risk standards and further delegate down the phase of

implementation through the organization. After the implementation of risk management standards organizationally there is a required continuous monitoring of risk performance upon all levels of management and regular results being communicated up to top management for further evaluation. The decision-making structure organizationally places high importance for the implementation of risk management structure and practices, although it is applied to every level of the supply chain (Basu & Wright, 2017). The management of and response to each risk ultimately fall on the manager responsible for the area subject to the risk (Ibid.). To further pinpoint earlier definition of risk, being aware of it, identifying and handling risks should be continuously carried out through an organization (Yilmaz & Flouris, 2017).

Coordination serves an important function within risk management where a large factor of informing organizationally concerns communication. Thereby, organizational communication is crucial for an organization during a crisis as well, as highlighted by Larsson (2014), communication being one of the most fundamental components in a functioning organization.

The split of communication within an organization concerns the formal and informal communication, where the formal communication concerns the communication activities delegated by management (Larsson, 2014; Baker, 2007). The informal communication within organizations concerns the communication between individuals that occurs outside of the formal communication (Larsson 2014; Baker, 2007). It is further emphasized by Larsson (2014) that both communication forms are highly important for organizations. The formal communication is intended to inform the individuals in an organization, but it does not tend to fulfil the whole informative need, where the complementary of informal communication among individuals fulfils this need (Ibid.). The main function of communication in organizations is to serve different aspects such as the informative, regulative, integrative, management as well as social aspect where all these concerns the organizations communicative flow to function (Larsson, 2014).

When moving beyond the fundamental function of communication, crisis communication highly influences an organization during an uncertain event (Argenti, 2020; Sturges, 1994). Crisis communication focuses upon communication among organizational stakeholders from the breakout of the crisis event throughout the whole period (Sturges, 1994). It is emphasized upon that communication during a crisis is important in order to regularly inform individuals within the organization about how to respond to an emergency. Sturges (1994) developed three stages within crisis communication, the first being *instructing information* to the individuals of

how to act and react, thereafter as the crisis continues *adjustment of information* may be necessary, and thirdly *internalizing information* which concerns how the organization should be conceptualized with their response to the crisis. Argenti (2020) emphasizes upon how the crisis communication within an organization needs to be clearly communicated among stakeholders and there is a need of regular communication with employees with clearly stated information for how to manage the crisis and clarification of any situations or confusion, in order to ease and generate hope for the future.

### **3 Methodology**

*This chapter outlines the methodology applied in this study. First, the research design of a qualitative and abductive approach is presented followed by a detailed description of the research process. Second, the research method of a multiple case study and case selection process is explained. Lastly, the data collection and data analysis are presented.*

#### **3.1 Qualitative Research Approach**

This study takes a qualitative research approach and the decision to employ a qualitative research design relies first and foremost upon the desire to attain an in-depth study. Attaining a more in-depth analysis is emphasized by Yin (2018), and Patel and Davidson (2019) to be the most prominent advantage of the qualitative research approach. Eriksson and Kovalainen (2008) further emphasize upon that within business research the qualitative approach provides researchers with an extensive and grounded opportunity in the analysis of business phenomena and their contexts. Since the external organizational context examined in this study is the Covid-19 pandemic, which is an ongoing and particularly new type of situation, we decided upon a qualitative research approach to best enable a gathering of more in-depth empirical findings that captures the individuals' perspective on their respective organization's risk management strategies during Covid-19. This decision is further motivated through the clear preference for a qualitative research approach among international business scholars and methodology theory when conducting a study that focuses upon a new type of situation and individual's perspectives (Yin, 2018; Patel & Davidson, 2019; Bell et al., 2019).

The purpose of this study is to first investigate how global logistic providers have been affected by Covid-19 on an individual, organizational and operational level and how the risk management strategies have been adapted during this disruptive event. We thus need to identify how risk management processes and practices were implemented prior to Covid-19 to benchmark against the new situation. Hence, we argue that based on methodology theory and the nature of our study, a qualitative research approach provides us with the best opportunity to attain the desired depth of our empirical findings and thus answer our research question.

#### **3.2 Abductive Reasoning**

This study is carried out through the abductive reasoning approach in order to avoid the limitations caused by the traditional inductive and deductive approach (Bell et al., 2019).

According to Eisenhardt and Graebner (2007), the most interesting results are generated from research that seeks to build theory from case studies, which in International Business (IB) research often is done through inductive reasoning. In contrast to the inductive and deductive approach, that both include a predetermined relation and research process between theory and empirical observations, the abductive approach however allows for back-and-forth movements between the theoretical framework and the empirical findings (Eisenhardt & Graebner, 2007; Bell et al., 2019.). It is similar to the *in vivo* approach discussed by Andersen and Kragh (2011), who criticize the extensive use of inductive reasoning in IB qualitative case studies. They argue that by applying the *in vivo* approach, pre-existing theory act as an initial framework for the research formulation and collection of empirical data and through iterations between theory and empirical findings, the theoretical framework is revised, which enable the theory development (Ibid.). Thus, this process enables a greater understanding of both theory and empirical findings (Dubois & Gadde, 2002). For the purpose and research design of our study, an abductive approach is desirable since the established theoretical framework of supply chain risk management has not yet come across the type of situation caused by the Covid-19 pandemic. As Dubois and Gadde (2002) argue, ‘theory is important, but it is developed over time’ (p. 559), where the abductive approach in our study is more concerned with theory development than generating new theory (Ibid.). This is in line with what Bell et al. (2019) describe as seeking to explain a *puzzle* or *surprise*. The puzzle or surprise could be a previously unexperienced situation, for which the theory is yet to be developed. In our study, the Covid-19 pandemic illustrates such a situation.

### **3.3 Research Process**

As described earlier, this study is conducted through an abductive reasoning approach, which largely has permeated the research process. The research process began with an idea of the subject and purpose of the study followed by an initial review of the existing theory about supply risk chain management and the logistic and transport industry. From an extensive literature review, we then identified the research gap to be supply chain risk management during a disruption from the perspectives of GLPs. The formulated research question is thus based on the identified research gap. Then, based on existing theories and International Business methodology, we decided to conduct a qualitative multiple case study. The case selection process and the methodology applied throughout the study follow examples in existing literature and is sought to be best appropriate for the purpose of this study.

As we began to collect our data and compile our empirical finding, we consulted additional literature and theories. Thus, the theoretical background for this study have been revised continuously throughout the data collection and as the empirical gathered data was summarized. For instance, as we carried out the first interviews, we soon realized that our initial perspective on risk management was too narrow and did thus not account for all aspects brought up by the respondents. Secondly, we have consulted more literature regarding the role of GLPs within global supply chains to better understand the activities and business strategies described by the respondents. This process has been necessary as many of our questions were designed to allow for the different perspectives and roles of the respondents, which means that we have not been able to address all relevant literature in advance.

The data collection process began after the sample criteria (see section 3.5.2) were set and few initial interviews were booked. The sampling then continued throughout the data collection until a desired sample of cases and empirical saturation were reached.

Following the data collection there were an extensive process of transcribing all the data gathered by summarizing the findings from each interview and thereafter contrasting these findings to each other to identify differences and similarities to highlight the main findings. During this process, we revised our stand towards the anonymity of the case companies. Initially we decided to keep all empirical findings anonymous, ensuring that no responses could be linked to a particular respondent or company. To be consistent, this level of anonymity was then offered to and approved by all respondents. With this level of anonymity, we intended to list all companies included in the study while then referring to them as “Company 1-11” in the empirical findings and analysis. However, when compiling our empirical findings, we found that the descriptions of the companies became too shallow, and the set level of anonymity prevented us to attain the desired depth in the analysis. Hence, to allow for a more profound description of the companies and a deeper analysis of the empirical findings we decided to exclude the list of company names and thus keeping complete anonymity throughout the study. This enabled us to highlight examples and quotes from the interviews to a larger extent. After the anonymization of companies, the empirical gatherings gained further depth and the finalized empirical material for each of the companies was sent and verified by the case companies, to assure correct interpreted information and to gain higher credibility of our study.

In the analytical process the empirical gatherings were contrasted with the theoretical framework to seek common findings between the cases in relation to theory and have the ability to analyze upon the findings that does not exist within our theoretical framework. The analysis chapter was structured around the risk management in the case companies with the extension of how the risk management was carried out during the ongoing pandemic. This hereby led us to conclude upon the findings and gain further emphasis upon managerial recommendations as well as recommendations for future research.

### **3.4 Multiple Case Study Design**

A case study is defined to be ‘a research strategy which focuses on understanding the dynamics present within single settings’ (Eisenhardt 1989, p.534). Yin (2018) characterizes that for further depth of the case study research it is suggested that the case study design investigates a specific present-day event or action. The arguments from the aforementioned authors strengthens our choice of the multiple case when studying a specific event of disruption, namely the Covid-19 pandemic. With this study being explanatory through guidance of our research question

***How do Global Logistics Providers (GLPs) that participate in global supply chains manage and adapt their risk management strategies during a global disruption?***

the case study design was weighted to be the most suitable research method. Case studies can either involve a single case or multiple cases (Eisenhardt, 1989; Patel & Davidson, 2019; Yin, 2018) and for our study we decided upon the multiple case study to strengthen the quality of our study, but also to generate and identify potential similarities and differences between the cases which goes in line with what Eriksson and Kovalainen (2008) touches upon than rather relying upon a single case. To further pinpoint upon the decision of a multiple case study, Yin (2018) argues that the empirical findings are of greater certainty with multiple sources of data collection, which according to Bell et al. (2019) strengthens the theory-building. The multiple case study stands its basis upon the revelatory case, since the area of research and unique situation have previously not been studied among researchers, as described by Bell et al. (2019). The method used for our multiple case study is defined by Eriksson and Kovalainen (2008) to be of an extensive approach, where the focus is upon seeking common patterns in the context among the multiple cases. This to further elaborate with the existing theory, with the

use of multiple sources of data collection and later contrasted with existing theory elaborating up generalizable findings (Merriam, 1995).

### **3.5 Sampling of Cases**

In case study research, deciding on a sampling method is just as important as deciding whether to conduct a single case or a multiple case study (Buck, 2011). According to Buck (2011) the selection of cases should not be done prior to the establishment of the theoretical framework and research gap and may not merely rely upon the accessibility of the cases. As this study employs abductive reasoning, the theoretical framework was however not finalized before the selection of cases, but the selection is based upon the initial theoretical review. Furthermore, all cases were not determined prior to the data collection, but rather selected and added during the process to attain the desired width of cases. The sampling process in this study is multi-leveled as the selection of location and industry were set first and subsequently acting as a guide for the selection of companies and lastly respondents. Based on the framework provided by Buck (2011), the unit of analysis in this study is the GLPs in the context of the Covid-19 pandemic, whereas the respondents within the GLPs function as the empirical unit of observation. Due to the multi-levelness of the selection of cases, several sampling methods have been applied. The following sections (3.5.1 and 3.5.2) provide detailed descriptions of the sampling process applied in this study.

#### **3.5.1 Selection of Location and Industry**

Selecting the country (-ies) and the industry in which we wish to study organizations are referred to as selection on level one and two by Fletcher and Plakoyiannaki (2011), where the choice of country seems to determine or at least steer the choice of industry. However, we argue that selecting country and industry through sampling is more relevant when the purpose of the study not necessarily relies upon these two, for instance in a cross-cultural multiple case study or when seeking to examine internal management between units in MNCs. In such a case, the sampling of countries must ensure consistency and take potential differences in the unit of analysis and thus apply a suitable sampling method (Fletcher & Plakoyiannaki, 2011). Thus, since the country and industry of choice in this study both strongly relate to the purpose and research question, they have been selected virtually simultaneously. The choice also relies heavily upon the present Covid-19 pandemic. Hence, purposive selection has been applied in this selection.

The selection of the logistics and transport industry was based upon its function within global supply chains, and the large impact they initially suffered from caused by the Covid-19 pandemic. The logistics and transport industry covers a broad range of actors and participants and thus in line with the research question we narrowed the selection of cases to GLPs. This since GLPs play a crucial role in global supply chains, as they are the link between suppliers and consumers and handle an enormous amount of goods daily.

After the selection of industry, the geographical location was set to be the Gothenburg area due to several reasons. Firstly, since the port of Gothenburg is the largest port in Scandinavia providing a global gateway for a great majority of Swedish industry (Port of Gothenburg, 2021) and the nearby airport of Landvetter through which a large amount of air freight passes (Swedavia, 2021) which makes Gothenburg a significant geographical location for the import and export of goods. Thus, there is a high presence of GLPs in the Gothenburg region. In line with the research question and purpose of the study, we decided not to conduct a cross-country multiple case study in order to avoid the external, nonetheless, important factor of national regulations due to the Covid-19 pandemic, which may have affected the management of implications in organizations caused by the pandemic. The international business perspective in this study is thus instead included through the GLPs international operations.

Second, due to the pandemic and travel restrictions set internationally, the physical proximity for us<sup>2</sup> was a factor influencing the choice of location. In the beginning of the study, we had the hope of carrying out face-to-face interviews at each company's office, which we then would have been able to do locally without traveling. Although we later ended up conducting all interviews via Zoom, due to continuous recommendations of distance keeping, we wish to emphasize that since all the companies interviewed are located in the Gothenburg area, we are able to understand the local context and location of each company even without visiting the offices.

### **3.5.2 Selection of Global Logistics Providers and Respondents**

As the purpose of our study is to examine and obtain a deeper understanding of how GLP's have and continue to cope with an ongoing disruption (namely Covid-19) and the uncertain circumstances that such a disruption brings, we sought to include companies that cover a broad range of activities included in the transport and logistics sector. Thus, some of the included

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<sup>2</sup> Both authors were living in Gothenburg at the time of the study

companies offer a variety of activities and modes of transport while others focus more on one or a few activities. Through this selection, we argue that the collected data covers more perspectives than would have been if all included companies were of the same size and provided the same services.

The selection of cases was made through purposive sampling, which is a non-probability sampling method (Bell et al., 2019). Through purposive sampling, we attain a sample appropriate for our purpose. According to Fletcher and Plakoyiannaki (2011) the appropriateness is attained at the expense of representativeness of a population. In this study, this is true concerning the locational context of the companies, yet we argue that our sample is representative to a certain degree since the included companies covers a broad range of activities and international operations within the logistic and transport sector. Our choice of purposive sampling is in line with Bell et al. (2019) who argue that a (multiple) case study should be conducted through appropriate samples and the cases should be included based on certain relevant criterions rather than seeking to represent an entire population.

Thus, the selection of companies was based on certain criterions to ensure both that the cases are comparable and relevant for our study. The criterions thereby limited the selection to companies operating in the logistics and transport sector (1), that have an office and activities in the Gothenburg area (2) and are serving at least one logistical function within global supply chains (3). An additional setting was that the companies must be involved in international operations, which may be done through several activities. For most of the included companies this means having internal operations and/or offices outside of Sweden, while a few companies take part in international operations with the use of agents<sup>3</sup> or other facilitators in the global setting.

After sampling relevant case companies, we contacted company representatives via email and posted information on LinkedIn about our study and case criterions with the aim to gain contact with more companies. We ensured that the companies we contacted via email met all criterions and we had an initial dialogue with the companies who contacted us via LinkedIn to unravel any potential uncertainties. Since risk management is a very broad field, with processes and practices that may be applied throughout many different business activities, we did not decide upon a specific manager or position to interview in each company. When selecting respondents,

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<sup>3</sup> An independent contractor who supports and connects shippers with carriers to arrange transportation.

we thus practiced snowball sampling. By using snowball sampling, we sought to reach the company representative best suitable for the interview (Bell et al., 2019). This was done by sending an initial inquiry (see Appendix 1) including explanatory descriptions of the topic of the interview and the purpose of our study to a company representative that we thought might be suitable. However, we wanted the receiver of our initial inquiry to assess who was the most suitable respondent for the interview and thus we requested the initial receiver to forward the inquiry to the person he or she believed to most suitable (Bell et al., 2019). This request was also communicated to the company representatives that contacted us via LinkedIn.

### **3.6 Data collection**

As discussed by Eisenhardt (1989), Bell et al. (2019), and Piekkari et al. (2008) data is usually collected through several methods and sources when conducting a multiple case study, to strengthen any findings and to avoid reliance upon a single source. However, in this study the data is solely collected through interviews, which according to Eisenhardt and Graebner (2007) constitutes the primary data source in most multiple case studies. The decision to not include additional secondary data relies upon the Covid-19 pandemic being a new and current situation for which there is no relevant data to complement the interviews with regards to the research question. This decision was finalized during the collection process since early findings from the interviews indicated that the case companies are yet to evaluate the long-term implications of the pandemic and the lessons learned.

The interviews ensure a semi-structured format, with a set of pre-formulated questions that will be posed to all respondents (see Appendix 2). In addition, adapted and flexible supplementary questions was asked during the interviews based on the respondents' answers and topics brought up during interviews. The reason for having pre-formulated questions is both to ensure consistency among the interviews as well as addressing the core of the purpose of the study. However, the pre-formulated questions are designed to be both specific and open in a sense that they address a specific topic but allow for that topic to be applied to different business activities in the companies and answered through the respondents' different perspectives. This to ensure that respondents with different perspectives and positions will be able to address the questions properly as argued by Bell et al. (2019) and Kvale (1996). In line with the abductive approach, the pre-formulated questionnaire builds to a certain extent on theoretical assumptions to cover the broader aspects of supply chain risk management such as the coordination of risk

management activities, but with some questions allowing for potential additions to existing theory such as questions concerning risk management during Covid-19.

All respondents received the interview questionnaire a few days prior to the interview. We did not ask the respondents to make any preparations for the interviews besides being given a brief introduction of the company's main operations and the respondent's position. However, giving the respondents a chance to read through the questions in advance enables a greater reasoning and more in-depth answers (Merriam, 1995). Further, this also enabled the respondents to let us know prior to the interview if they would not be able to answer all questions. Despite the proactive measures taken to ensure that a suitable company representative participated in the interview, for two of the cases a second interview had to be carried out to attain the desired data. The decision to conduct a second interview with another company representative was encouraged and agreed upon by the first respondent. The interviews were carried out digitally due to the ongoing pandemic and although limiting additional insights into the working environment of the offices, the digital interview setting provided some benefits that aligns with suggested benefits by Bell et al. (2019). Firstly, it allowed for a higher degree of flexibility both for us and the respondents in terms of date and time. Secondly, the interviews were time-efficient, and we were able to conduct several interviews in one day as potentially oppose to if the interviews would have been conducted face-to-face at each company location. Thirdly, the integrity of the respondents and their company was protected as some of the case companies take caution in allowing visitors at location. As camera was used by both us and the respondents, we could still capture some of the benefits of a physical face-to-face interview as facial expressions could be interpreted.

The final sample thus consists of eleven companies and 13 respondents (listed in section 3.7). Eisenhardt (1989) argue that it is appropriate to include four to ten cases in a multiple case study to enable theory building or development based on enough but not too complex data. However, the author further concludes that although the number of cases above are desirable it should ultimately be determined upon the point at which empirical saturation is reached. This is agreed upon by Bell et al. (2019) who states that empirical saturation rather than the size of the sample determines when enough data is gathered. Empirical saturation refers to the point in the data collection at which no new relevant information is gathered through continuous collection (Bell et al., 2019; Eisenhardt, 1989). Hence, what number of cases to include was not set prior to the data collection but by continuously analyzing the collected data, we reached

empirical saturation at eleven cases and 13 conducted interviews. At this point, we could clearly detect similarities among the responses although brought up from different perspectives. For instance, in the last interviews the respondents described processes in how they identify and manage risks as well as the type of risks considered, which had previously been brought up by earlier interviews. Although each interview brought new findings, at eleven companies the main aspects was repeated. At this point, a large variety of logistics activities as well as companies had also been covered.

### **3.7 List of Companies and Respondents**

Table 2 displays a list of the respondents' managerial level and details regarding the interview session for each case company. The reason for defining the respondents' managerial level is to give a better understanding of what extent we can expect the respondent to have knowledge about the organization as a whole, including different operational activities and their level of insight into risk management and internal policies. The different managerial levels are defined as *Top Management*, *Middle Management* and *Lower Management*. Top Management oversees and controls the organization as a whole, and includes roles such as *Founder/Owner*, *Chief Executive Officer* and *Chief Financial Officer*. Middle Management directs and executes plans within the organization to comply with the internal policies set and works as a connection between top- and lower management. This includes roles such as *Human Resource Manager*, *Supply Chain Manager* and *Key Account Manager*. Lower Management directs and controls certain tasks within the organization, has supervision over employees and is guiding role models on an operative level. This includes roles as *Team leader*, *Account Manager* and *Service Manager*.

Including respondents of different managerial levels and areas within the companies also enables a wider perspective on the same phenomenon to be addressed and thus avoiding potential bias and subjective views, which is discussed by Eisenhardt and Graebner (2007) as a potential concern when relying upon interview data.

COMPANY	RESPONDENTS MANAGERIAL LEVEL	DATE OF INTERVIEW	DURATION OF INTERVIEW
COMPANY 1	Middle Management	4 March 2021	40 min
COMPANY 2	Lower Management	3 March 2021	55 min
COMPANY 3	Top Management	11 March 2021	60 min
COMPANY 4	Lower Management	17 March 2021	50 min
COMPANY 5	Top Management	17 March 2021	100 min
COMPANY 6	Middle Management	17 March 2021	65 min
COMPANY 7	Middle Management A	12 March 2021	35 min
COMPANY 7	Middle Management B	19 March 2021	60 min
COMPANY 8	Lower Management	3 March 2021	50 min
COMPANY 8	Middle Management	11 March	50 min
COMPANY 9	Top Management	23 March 2021	40 min
COMPANY 10	Top Management	24 March 2021	60 min
COMPANY 11	Middle Management	31 March 2021	55 min
	<b>T:4 M:6 L:3</b>		<b>Avg. 55min</b>

*Table 2 List of Companies and Managerial Level of Respondents*

### 3.8 Data Analysis

The data has been continuously analyzed after the each conducted interviews. During the interviews one of us took detailed notes, whereas the other one asked the pre-formulated questions for the interviews. Both were however involved in asking supplementary questions. Following the interviews, revision of the notes was done and thereafter emailed to the respondent for confirmation of our interpretation of the answers i.e., generating a higher accuracy of the interpreted data, which are to be further addressed in the section 3.9 *Quality Criteria*.

The transcription of the interviews followed the data reduction method as described by Bell et al. (2019), where we extract the relevant data for our study from the notes taken of each of the interviews, and these notes facilitated the transcription stage. Following the interviews, we summarized the empirical findings with the relevant data for our study for each of the company

interviews, where summarizing tables were constructed to generate an overview for each case company based in the format of the interviews itself with three categories of *Covid-19*, *Risk Management Coordination*, and *Implemented Measures during Covid-19*, which is emphasized by Bell et al. (2019) as following a thematic analysis approach. Following this data reduction method for each of the interviews we generated a summarizing chapter for the relevant findings and segmentation of the relevant data that were sent to each respondent to verify upon correct interpreted information of the relevant empirical findings.

The empirical data analysis as described concerns the main findings from the conducted interviews, although we wish to emphasize upon the constant and ongoing theoretical analysis in the study which holds strong emphasis of the abductive research approach since the theoretical frameworks has been constantly developed during the study as of the findings of empirical data.

### **3.9 Quality Criteria**

The quality criteria are set to ensure trustworthiness of the study (Lincoln & Guba, 1985; Eriksson & Kovalainen, 2008; Merriam, 1995; Leung, 2015 & Bell et al., 2019). We have moved beyond the more traditional measures set for the quality criteria, where we apply the model of ensuring trustworthiness by Lincoln and Guba (1985) through *dependability*, *credibility*, *confirmability*, and *transferability*.

We wish to highlight that the aim of our study is not to generate any statistically generalizable findings, rather to address a new global phenomenon through the perspective of GLPs and subsequently add to existing literature. Through this, potential analytically generalizable findings may be reached.

#### **3.9.1 Dependability**

To assure trustworthiness through dependability, one must provide the potential for others to trace the development through insights and the analytical process used within a study (Guba, 1981). It is thus of high importance to keep track of the research by providing detailed descriptions of the process. Hence, we provide such details in section 3.3, which outlines our study from start to end, where the analytical process can be closely traced. The interviews have kept the same format and pre-formulated questions asked, in order to keep consistency (Leung, 2015), which is an important aspect of attaining dependability. To seek further dependability in our study we wish to emphasize upon the transparency kept throughout the study, where we

have recorded and transcribed the interviews to gather and extract the relevant data. By being consistent and triangulating our data through two stages of verification upon the empirical findings with the respective respondent in the case companies, we can ensure that the results are aligned with the gathering of empirical data, being in accordance with what Bell et al. (2019) and Merriam (1995) touches upon regarding assurance of dependability through triangulation.

### **3.9.2 Credibility**

The measure of credibility includes the potential of describing a congruent explanation of empirical events (Shenton, 2004). To ensure that the interpretation of our interviews are correct, the notes from each interview were sent to the respective respondent for confirmation of transcription, which is one strategy set for increased credibility of our empirical findings based on arguments by Merriam (1995), where each of the respondents has at two occasions validated the interpreted answers from each respective case company, which allows for triangulation and thereby seeking a higher degree of credibility of our study through member check. Except for two of the case companies, we have interviewed one respondent at each company. Although one respondent per case offers no opportunity of triangulation within each organization, the verification of interpreted information at two occasions strengthens the credibility of the empirical findings. The gathering of eleven case companies highlights the fact of importance in triangulating among the cases rather than for each respective case, which strengthens the credibility of our study in the common findings representing GLPs.

The differences upon the phenomenon sought in theory in contrast to the empirical findings allow interpretation upon the reality and clarification upon what occurs in reality within organizations and the triangulation does play a large importance in the phenomena's contrasted to the actual situations as argued by Shenton (2004).

### **3.9.3 Confirmability**

Confirmability ensures that the study is not influenced by bias from the researchers, and Guba (1981) distinguished confirmability as the measures held on to what extent the investigative bias can be decreased in the study and as Bell et al. (2019) discuss that it is impossible to keep complete objectivity in the study. The continuous search in theories to further expand and describe the risk management processes demonstrates measures taken to decrease investigators bias. Since the empirical analysis provided the opportunity to seek further beyond the

investigators own theoretical knowledge, this hereby led us to gain a better understanding of the risk management processes and its expanded theory. The investigative bias of this study decreased through discussions at seminars held throughout the research process. During these seminars, this study has been continually reviewed by fellow IB students that have provided us with valuable insights and suggestions for improvement. In addition to the seminars, we have received regular guidance and feedback on our study by our supervisor Dr. Johan Jakobsson.

In order to generate a heuristic quality of the study, the formal set structure of the study as well as the connected flow generate confirmability as according by Meriam (1995). Further, the abductive approach ensures confirmability through the understanding of linkages set between theory and empirical findings.

### **3.9.4 Transferability**

Transferability concerns the external validity of our study (Bell et al., 2019), which involves the generalizability of our study as well as the measures taken to contrast the existing theory with the empirical findings of our study. The generalizability of our study does not apply to a specific population in our case, but rather what Yin (2018) emphasizes upon as seeking to have analytical generalizability of our findings. Thereby we do not seek for statistical generalizability (Merriam, 1995) by basing our generalization upon a population or specific sample, rather seeking the potential to generalize based on theory, as well as the possibility of expanding already existing theory with our gathered empirical data as described by Yin (2018).

### **3.10 Ethical Consideration**

To ensure that ethical consideration is kept towards all the respondents during the interviews, measures were set to keep integrity of the individuals and companies participating in our study. Ethical principals were considered throughout the whole study in accordance with All European Academies (2018), Bell et al. (2019), and Eriksson and Kovalainen (2008) which discusses upon the ethical consideration in research, and we have to our own best efforts tried not to interfere with the respondents personal as well as the companies' organizational integrity. Prior to this study all the respondents were informed about the objectives and purpose of our study before accepting participation, thereby no one has to any extent been forced to participate. All respondents were to approve of the interview being recorded and upon the drafting of empirical summary complete anonymity.

## 4 Empirical findings

*This chapter presents the empirical findings from the conducted interviews. The empirical findings are presented per company divided upon the sections of; The impact of Covid-19, Coordination of Risk Management and Implemented Measures by Covid-19. The chapter ends with a summary of the main findings among all case companies.*

Table 3 presents case company 1-11, what logistics services they provide (transport, warehousing, supply chain management solutions) and in which customer segment they operate (B2B, C2C, B2C, C2C). The customer segments include business to business (B2B), business to consumer (B2C), consumer to business (C2B) and consumer to consumer (C2C). For instance, B2B may include logistics services of intermediary goods, B2C final goods to consumers, C2B customer returns of goods and C2C regular mail and packages between consumers. The purpose of this segmentation is to provide an overview of the companies before the findings from the cases are presented. Each section (4.1-11) begins with a short presentation of the respective company to describe the context for further guidance in the analysis.

In terms of logistics services, we have set three categories: transport, warehousing, and supply chain management solutions. The companies may provide one or several of these services, which is indicated in table 3. For some of the companies, the services are provided through internal operations while for others the services may be handled internally but carried out by partners. Transport (T) includes all different modes of transport such as sea, air, and road freight, as well as fleet services such as leasing. However, to ensure anonymity, what mode of transport each company provides is not stated. Warehousing (W) includes storage of goods as well as the split and repackage of deliveries to streamline goods transport from different origins or suppliers to the same final destination. Supply chain management solutions (SCM) refer to the service where the company handle the entire chain of transport of goods from origin to the final destination.

<b>COMPANY</b>	<b>LOGISTICS SERVICES (T, W, SCM)</b>	<b>CUSTOMER SEGMENT (B2B, C2C, B2C, C2C)</b>
<b>COMPANY 1</b>	W	B2B
<b>COMPANY 2</b>	T, W, SCM	B2B
<b>COMPANY 3</b>	T	B2B
<b>COMPANY 4</b>	T, W, SCM	B2B
<b>COMPANY 5</b>	T	B2B
<b>COMPANY 6</b>	T, W, SCM	B2B, B2C, C2B, C2C
<b>COMPANY 7</b>	T	B2B, B2C, C2B, C2C
<b>COMPANY 8</b>	T	B2B
<b>COMPANY 9</b>	T	B2B
<b>COMPANY 10</b>	T	B2B
<b>COMPANY 11</b>	T, W, SCM	B2B

T- TRANSPORT  
W-WAREHOUSING  
SCM- SUPPLY CHAIN MANAGEMENT SOLUTIONS

*Table 3 Segmentation of GLPs*

Sections 4.1-11 present the findings from the conducted interviews. The findings are presented separately for each company and are structured according to the interview questionnaire with subheadings: *The impact of Covid-19 for Company N*, *Coordination of risk management within Company N* and *Risk management measures implemented during Covid-19 by Company N*. For each company, tables 4-15 present the main takeaways. Section 4.12.1-4 then summarizes the general and most relevant findings, including similarities and differences, from all conducted interviews.

## **4.1 Company 1**

Company 1 has its base in Gothenburg and are active in global supply chains through their solutions of warehousing of goods by the port in Gothenburg as well as at three other locations in Sweden. The company reports to its parent firm in North America and prior to November 2020 the firm's headquarter was based in UK, which the Gothenburg headquarter reported directly to, but due to Brexit the UK branch among others were sold off.

The activity within global supply chains that Company 1 provides is the warehousing solution, where their customers deliver their goods by boat, train, or trucks. The goods handled by Company 1 are of a critical composition so there are varying aspects and severity of risk considered within the company on a daily basis.

The respondent of Company 1 is a middle manager with good insights into the operations and management of employees.

### **4.1.1 The Impact of Covid-19 for Company 1**

Company 1 has since the beginning of March 2020 had their employees working from home, but they have not been forced to lay off any staff during the Covid-19 pandemic. The respondent expressed that the biggest challenge brought on an individual level has been the shift to digital communication and meetings, while maintaining the level of quality attained through previously held physical meetings. The main challenge lies within being able to supervise the staff with regards to their well-being and work environment from home as well as the loss of personal interaction with colleagues since the held digital meetings in general are short and concise compared to the more spontaneous physical interactions at the office. Although most employees works from home, some essential staff remains at the office and terminal. According to the respondent, the office recently experienced an outbreak of Covid-19 and they have thus been forced to take additional action to prevent further spread, such as guidelines of keeping distance between individuals, mandatory use of face masks in common areas, and reduced seating in the cafeteria. The internal communication between Company 1's different locations has been somewhat limited due to the ongoing pandemic, where traveling restrictions have forced projects to be set on standby.

On the operational level, the past year was one of the best years economically for the firm. Due to customers valuing storage of their goods which has resulted in a larger amount of signed

long term contracts (as well as short-term), thus generating a good outlook for coming years of the company. At the time of the virus outbreak at the Gothenburg location, the work was limited to urgent operations with a minimum-level of workforce. Hence, certain activities have been put on hold.

#### **4.1.2 Coordination of Risk Management within Company 1**

Risk management measures and risk awareness are incorporated daily on all operational levels to prevent occurrence of risks. The type of goods handled by Company 1 necessitates continuous supervision of all work carried out. The respondent's involvement in risk management concerns staff and the organizational changes where ensuring the health and security of workers is a large part of the daily work.

Within Company 1, the managing director has the ultimate responsibility for potential risks within the organization and the implications thereof as well as the working environment and security. The managing director delegates responsibility for certain areas of risk downwards in the organization and each terminal director is responsible for his or her terminal. Constant awareness of critical risks for the operations permeates the entire organization and the respondent emphasized upon the necessity of critical thinking in each step.

*“There is a constant thought of what critical risk and consequences any action or situation would imply when carried out.”*

Company 1 prioritizes risks on a scale from 1-4 regarding probability vs. consequences. According to the respondent, the highest prioritized risks are the ones having the largest consequences and impacts for individuals, the organization or the society. Regardless of being long- or short-term, economic, or non-economic, all types of risks are always considered. Both risks that may have immediate or future implications are considered on different operational levels.

*“We have the risks in our daily work but as well need to keep in mind the risks we face tomorrow.”*

#### **4.1.3 Risk Management Measures Implemented During Covid-19 by Company 1**

Company 1 was chocked by how rapidly the pandemic came to affect the business. There were no prior set strategies within the firm enough to know how to react and adapt to a global pandemic, so resources were required to shift to the remote way of working and ensure the

safety of the staff present at the office and terminal. The flexible way of working from home was already practiced to some extent within the company although some internal developments with the VPN<sup>4</sup> were required and supplying all staff with proper equipment.

Potential lessons learned from the Covid-19 pandemic and development of new risk management strategies thereof are according to the respondent to be evaluated and developed after the pandemic.

*“We are in the middle of the situation [...] and we need to make it work for now.”*

Currently, the focus lies within making things work for now, rather than the future. What has been learnt so far is the more rational way of thinking and Company 1 has realized the high importance of informing their workers through different and more channels than were used prior to Covid-19.

When asked whether the Covid-19 pandemic have caused more or less implications than other disruptions, the respondent stated that Brexit affected the company a lot more from a business perspective while Covid-19 brought implications on a more individual level. Although both these global events have impacted the firm to a large extent, they differentiate in the sense that with Brexit there was a date set for the company to adapt to, where with Covid-19 it is more of a day-to-day perspective and rapid changes to adapt to. With Covid-19, since it is ongoing there is still no knowledge of what the long-term outcome will be, although it is emphasized by the respondent that their customers have a higher understanding for delays because of Covid-19 contrasted to Brexit.

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<sup>4</sup> Virtual Private Network- enabling the individuals to access the encrypted organizations network from home.

#### 4.1.4 Summary of Findings Company 1

##### Covid-19 pandemic

- Been working from home since March 2020 with no laying off staff.
- Biggest challenge on individual level with shift to digital communication and maintaining quality of meetings that previously was held physically.
- Lack of supervision of staff and loss of social interaction with colleagues.
- Operational performance strong during the pandemic although some projects been put on hold due to travel restrictions.

##### Risk Management Coordination

- Working daily with risks in the organization on all operational levels.
- Respondents risk management concerning staff and organizational changes.
- Managing director holding main responsibility for risk management and delegates responsibility.
- Risk management permeates the organization and risk management measures constantly categorized and prioritized on a scale from 1-4.

##### Implemented measures during Covid-19

- No prior measures set on how to handle a pandemic and implementation of working from home were quickly adapted.
- Focus upon handling the current situations that arise and evaluation will further be evaluated in the future.
- Information being key to have the workers informed through different channels.
- Brexit effecting to a large extent operationally, with some preparation.
- Covid-19 being on a day to day perspective with rapid changes and adaptation.
- Greater understanding among customers for delays caused by Covid-19.

*Table 4 Summary of Findings Company 1*

## **4.2 Company 2**

Company 2 is one of the largest GLPs in the world for sea transport and they participate in global supply chains through transport offering by sea, air and road, warehousing, and supply chain management solutions. The company has a global presence where the Swedish branch has its functional headquarters for sea transports in Gothenburg. The GLP is present in more than 100 countries with almost 1,500 offices and approximately 80,000 employees globally. The activities present in global supply chains are door-to-door services, through the movement of goods from A to B, although at a high complexity through the split of shipments and other alterations of the shipments.

The respondent at Company 2 has had varying roles internally and has a broad experience in sea transports and extensive experience at other logistical firms on an international perspective.

### **4.2.1 The Impact of Covid-19 for Company 2**

Company 2 quickly decided to shift to distance work in March 2020 and has been since, only allowing a small number of staff to remain at the office. The Gothenburg offices normally holds between 50-80 workers but were set to keep only 3-4 workers at the offices at a time.

On the organizational level, the communication between offices has not been impacted to a large extent, the workforce was equipped with laptops and prepared with VPN in order to facilitate the work with the IT-infrastructure set prior to the outbreak of the pandemic. The system of working from home was already set for staff prior to the pandemic, but the more long-term practicalities such as support-tools, extra computer screens and keyboards had to be arranged.

Regarding Company 2's operations and customer handling, no essential problems have been detected because of Covid-19, although certain obstacles have arisen concerning the remote work. In the beginning of the pandemic there were no significant effects on volume, although at a later stage certain segments have experienced rather unpredicted changes. Some segments have experienced a major increase in terms of volume whereas others have seen a large drop. For instance, the demand for electronic goods has increased due to the number of individuals that are now working from home, and the import of food and sanitary products has increased in contrast to the fashion industry which has faced a large drop. In addition, e-commerce has experienced a large boom which means that the pandemic have had different implications on

different customer segments for Company 2. Potential fluctuations in demand for different segments during the pandemic has according to the respondent affected some of Company 2's customers, whereas Company 2's volume have kept steady.

#### **4.2.2 Coordination of Risk Management within Company 2**

The risk management guidelines within Company 2 are set at the headquarter and they include a series of processes that is aligned throughout the organization. Each office and individual need to comply with these processes, and most of them daily. Strategies for financial risk management are set at the HQ whereas the office in Gothenburg mainly works with local and internal risks such as security and health of workers. At the warehouses there are local risk managers focusing on the potential risks within the warehouses.

The respondent's responsibilities of risk management are partly focused on internal soft values such as the workers well-being, working environment and stress. Externally the respondent oversees the service towards the customers by setting teams that are providing customers with the desired service. The risk management processes lie within analyzing potential risks and thereafter develop a plan on how these risks can be avoided or solved before occurring according to the guidelines that are set by the HQ.

Organizationally the risk management guidelines are as aforementioned set by the HQ, but at each location the managers are responsible for that the measures are implemented accordingly. There is ongoing compliance set within the organization of ethical consideration to keep among the employees and keeping knowledge about the international markets. Yearly the employees must take a test and regular courses to maintain and align the knowledge among the work force.

Throughout the organization, each office is responsible for prioritizing risk with short- and medium-term implications, whereas the more long-term perspective is actively worked on by the HQ. The respondent works daily with what possible risks that can be faced tomorrow. As previously emphasized, there is a high importance of the daily communication between employees. Thus, the pandemic has posed certain challenges on that matter.

#### **4.2.3 Risk Management Measures Implemented During Covid-19 by Company 2**

The guidelines within Company 2 set in the beginning of the Covid-19 pandemic related to the guidelines set by the public health authority. Despite the rapid shift to working from home, it never became a practical problem since the IT-structure was already set and all employees

could have a smooth transition to working from home. Since the internal guidelines continuously have complied with the national recommendations there has been no need for further adaption, although there were cases of Covid-19 among the employees.

A lesson learned throughout the pandemic is the importance of being reactive to new national recommendations as well as to internal policies. Although the transition has been rather smooth there has still been realization to always be reactive to new changes which has worked well for over a year. However, there is concern raised about for how long working from home will last and what implications it might have for the employees in terms of communication and personal interaction.

When contrasting the effects of Covid-19 to those of Brexit, the respondent stated that Company 2's customers have been affected the most by Covid-19, although Brexit has posed larger implications Company 2's goods that are transported by sea. The respondent brought up the 2008 financial crisis as a disruptive event affecting the company to a larger extent where recruitment was paused for over a year. Brexit posed challenges on an operational level for Company 2's suppliers although the service level was never affected. The impact of Covid-19 has negatively impacted the acquisition of new customers since face-to-face meetings are an important aspect in the way of doing business.

*“It is hard to gain new customers through a sales pitch over Zoom or Teams, in contrast to the face-to-face meeting and physical interaction with new customers.”*

Lessons learned for future risk management are according to the respondent to increase the awareness of individuals' needs. It is expected that staff will wish to continue to work from home to some extent and that a higher level of personal freedom is valued. Further, communication is important, both formal such as having the camera on in digital meetings as well as the more informal communication between individuals which will continue to be a challenge since it does not occur to the same extent digitally. According to the respondent the key for the future is to find new ways to communicate effectively with the focus on finding solutions that exist, rather than finding new ways of working.

#### 4.2.4 Summary of Findings Company 2

##### Covid-19 Pandemic

- Been working from home since March 2020, minimum of staff at office.
- Prior IT-infrastructure did facilitate the remote work from home.
- Operational volumes has not dropped, although switch in segment volumes were significant.
- The boom of e-commerce has impacted different segments with significant increases in volumes.

##### Risk Management Coordination

- Global HQ sets the risk management guidelines and processes throughout the organization, where local managers has to assure that the standards and procedures are followed.
- Local risks are managed at the Gothenburg office, such as security and health of workers.
- Risk management process of analyzing potential risks and follow guidelines set by global HQ, which the local offices reports to.
- Focus on risks on a short and medium-term perspective locally, HQ deals with long-term risks.

##### Implemented measures during Covid-19

- Strictly following the public health authorities set guidelines and measures of the pandemic.
- Importance of being reactive and adaptable to the constant changing national recommendations as well as internal policies.
- Concern on how long it will work so well with working from home, reflection upon consequences it will have for the future.
- Customers have been the most affected by the pandemic, whereas with Brexit Company 2 has had implications for the goods that are transported by sea on the supplier side but not on the service level towards customers.
- For the future emphasis on individual freedom and flexibility within the organization. Prediction that future work will be both from home and at local offices, high value on personal freedom.
- Communication highly valued, with further development for the future for effectiveness.

*Table 5 Summary of Findings Company 2*

### **4.3 Company 3**

Company 3 participates in global supply chains with the activities of trading their fleets all over the world. The headquarter is based in Gothenburg and the organization is present globally with different kind of shipping solutions. The organization has ownership of their fleet and a varying capacity held through the combination of leasing and renting their fleets. The trade of fleets is active 24 hours a day and the company's business model is built on closeness to customers where they see the world as their marketplace, which is how the organization is built up.

The respondent of Company 3 is a top manager who has a close insight and relationship with the commercial, legal, and strategical units of the firm and maintains a close contact with the CEO.

#### **4.3.1 The Impact of Covid-19 for Company 3**

On an individual level the major implication of Covid-19 has been the shift to remote work and communication having to be carried out digitally. There are thus challenges in the natural flow of the office, although according to the respondent, work on the individual level has become more time efficient, which provides an opportunity to develop processes and routines which the workload prior to Covid-19 did not allow time for.

The organizational impact across offices have been affected. Previously, the respondent travelled a lot to meet international colleagues and customers but now all communication is digital. Further, the information sharing between individuals has suffered, and there is a challenge in knowing who to ask for what information and ensuring that everyone is informed.

On an operational level, the demand for products transported by Company 3 initially declined during Covid-19, but production kept on going which resulted in a larger need for warehousing. This led Company 3 to offer their fleet for temporary warehousing and the company thus minimized potential financial losses. The largest implication and challenge for Company 3 was caused by restrictions and closed borders in certain countries which hindered crews from entering. This situation thus necessitated negotiations in terms of flexibility in order to drop of staff on fleets in ports that allowed entry. Due to the high demand of the company's service this opened up an opportunity in negotiating their contracts with customers and certain clauses could be re-negotiated in contracts with current customers.

In sum, Covid-19 caused the business to boom at the start of the pandemic, whereas a year later the market is declining due to the drop in production of the good transported by Company 3. However, this decline in production does not necessarily solely depend on the pandemic. As a whole the overall effect of Covid-19 has been neither positive nor negative so far for Company 3.

#### **4.3.2 Coordination of Risk Management within Company 3**

Company 3 has a yearly practice and exercise of risk management where potential risks are analyzed along the whole value chain and each risk receives a score based on the probability of occurrence and potential impact. Each year, a number of risks occur causing time loss in the operations and the major risk management strategy concerns how to minimize those losses.

The most salient risks are financial since the segment Company 3 is working within is very volatile and investments in their fleet is normally paid off in 20 years' time. However, Company 3 both rent part of their fleet to other organizations and lease fleet on their own. The composition of the fleet is strategically determined by the management in order to minimize risk as the international market is changing rapidly. The impact of Covid-19 has according to the respondent posed large challenges, but since the product segment that Company 3 works within is constantly subject to fluctuations the company is familiar with rapid changes.

In addition to economic and operational risks, potential political risks towards the operations are also important to consider, where Company 3 has a large network of communication within the organization in order to be able to make rapid decisions. There are short decision paths and managers have large mandates to make necessary decisions.

#### **4.3.3 Risk Management Measures Implemented During Covid-19 by Company 3**

The risk management strategy in place prior to Covid-19 was sufficient in order to be able to work from home and adapt to the situation. Prior to Covid-19 there were a lot of traveling and all employees thus had the equipment to work from home. The very volatile market poses difficulties in terms of forecasts but the strong market during the pandemic enabled the company to negotiate for long-term contracts, which strengthened their position in the market.

For the future, the respondent emphasized on how communication and way of work will change, with worktime split between the office and home. The way of working from home may be functioning well for experienced employees that know the processes and routines, but it

might bring challenges when recruiting new employees, since there is emphasis on the need to learn things while present at the office, due to the dependence upon colleagues. In addition, the respondent stated that the organization has experienced that individuals tend to work more than full time while working remotely, thus raising some concerns regarding how long-lasting working from home might be.

*“The way of working and communicating within the organization will change for the future, we will go back to traveling and go to the office but in a complete new way.”*

For Company 3, Covid-19 have had a larger impact on the operations compared to Brexit, although part of the fleet was English flagged which posed certain challenges regarding taxes and other bureaucratic measures. Another disruptive event highlighted by the respondent is the financial crisis of 2008 and how it altered the way of financing the fleet in terms of loans and financing options. As of the time of the interview, the 2008 financial crisis was out of the three disruptive events stated to have affected Company 3 the most.

For future risk management strategies, Company 3 has already developed a model for the organization which considers environmental, social, and corporate governance where there is heavy emphasis upon scenario planning with certain individual responsibility. According to the respondent, the scenario planning is the most suitable model for forecasting.

#### 4.3.4 Summary of Findings Company 3

##### Covid-19 Pandemic

- Drastic change in the shift from office work to remote working from home.
- Communication being carried out digitally positively impacting the individual effectiveness.
- Travel restrictions giving an opportunity to develop processes and routines.
- Organizational impact regarding traveling and all communication being digital.
- Information sharing has been suffering among individuals.
- Operationally decline at start and new way of providing service on fleet as storage rather than transport developed, thereby mitigating potential financial losses.
- Closed borders have proven some challenges with workers not being able to entry in ports, putting higher pressure on the organizational flexibility.
- High demand for Company 2's service opened up negotiation opportunities in existing contracts.

##### Risk Management Coordination

- Yearly practice and exercises organizationally of analyzing and evaluating potential risks with a score matrix.
- Financial risks being crucial for the organization since the segment operating within is rather volatile. Risk measures taken in ownership and leasing to minimize financial risks.
- Short decision paths and large mandates divided in the management structure which enables rapid decisions in crucial situations.

##### Implemented Measures During Covid-19

- Moving to more digital solutions with working from home was not a big adaptation since many of the workers have been traveling and working from remote locations prior to the pandemic.
- Forecasting for the organization has been rather difficult with the volatile market, but increase in demand enables negotiation of long-term contracts.
- Future way of working has changed and the combination of working from home and at the office is strongly believed upon. Although some tasks has to be learned at the local office regarding routines and dependence upon other colleagues.
- The Covid-19 pandemic has had larger impact upon Company 3 in contrast with Brexit which had implications upon more bureaucratic measures. The financial crisis 2008 albeit did effect to an even larger extent than the pandemic has at the time of the interview.
- For the future risk management there has already been development of a model for the organization with scenario planning, something the respondent strongly believes to be suitable for forecasting.

*Table 6 Summary of Findings Company 3*

## 4.4 Company 4

Company 4 is present in the global supply chain through their activities in warehousing, transport, and supply chain management solutions. The company is globally present and has both own offices and works with agents and partners in a global network. The headquarter is based in Australia with close contact and communication with the subsidiary in Sweden, although with large self-governing responsibility.

The respondent of Company 4 is a lower manager who has previous varying experience within air transport and import/export. The role is focused upon the operational parts from beginning to end with customer contact, budgeting, customs, etc.

### 4.4.1 The Impact of Covid-19 for Company 4

The biggest differences within Company 4 have been the shift to working from home and having no physical meetings. The respondent emphasized that the internal communication has been affected by being less frequent and the contact over phone or chats makes the information flow slower. The respondent however feels that the work effectiveness has increased and that there is a more proactive way of working in the sense of seeking to finish assignments sooner rather than later. Because of this, the respondent works more since the work is always present and it is difficult to quit working in time. With the daily impact of work, the respondent stated that it has been very important to maintain contact with colleagues and to always keep the camera on digital meetings. Weekly meetings are held within work groups and monthly meetings for the whole office.

On an organizational level, the way each office tackle Covid-19 vary, where some are more effective than others who rather use the pandemic as an excuse to be less effective. Although organizationally the respondent feels that they have become quicker in their communication to customers.

*“We have become faster because we want answers and I don’t want to use the pandemic as an excuse for not replying quickly to customers.”*

The respondent emphasized that the imports have truly strengthened during the pandemic in their transport services, whereas exports have strongly declined. The imports have strongly been steered by the fast delivery of necessities goods but with the impact felt of airports shutting down, since around 80% of the goods transported go on passenger air crafts usually.

#### **4.4.2 Coordination of Risk Management within Company 4**

Risk management is a daily part of the work carried out within Company 4. In each country-specific office there are brand managers that carry the responsibility for the risk management operations, but the operative managers are involved to a certain extent as well. Within the segment of Company 4 there are varying types of risks managed, where some are easier to predict than others that they might not even be aware of until they occur.

*“We are constantly working with risk management but I don’t think that we always realize that we do.”*

The specific framework used by the respondent in his or her risk management work is the SWOT analysis<sup>5</sup> that is woven in with budgeting, but the respondent emphasized upon that no specific framework is set within the company. As previously mentioned, there are varying risks that the company faces, where the majority concerns the fear of losing existing customers, working both long- and short-term, but also economic- and non-economic risks. Thereby the respondent has a varying role and interaction with customers since they all hold specific needs and there is an importance of keeping flexibility to maintain customer relations. Much of the customer relationships are situation specific and thereby for each customer many situations can arise and must then be taken into consideration.

#### **4.4.3 Risk Management Measures Implemented During Covid-19 by Company 4**

The risk management strategies previously set within Company 4 proved some limitations when tackling the Covid-19 pandemic, where some of the employees had an easier way of changing towards working from home than others in terms of practicalities such as computer and internet access. As the pandemic has been ongoing for a longer period of time these challenges have been solved and individually adapted towards the working environment to function properly. Although the pandemic is still ongoing, when looking back the respondent feels that the team coordinated by the respondent has found a new way of working that is functioning well and all individuals within the team have taken a great responsibility to make it work. The respondent highlighted that before the pandemic the attitude towards that certain things could not be solved, has completely changed.

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<sup>5</sup> SWOT- Strengths, Weaknesses, Threats and Opportunities analysis model developed by Albert Humphrey

*“Before the pandemic we had situations that seemed unsolvable, but these situations we have been forced to solve during the pandemic. A lesson learned is that we are better than we thought at managing risks.”*

Overall, the pandemic has provided some lessons learned and that certain risks that one might not think can be managed actually can be, individually and organizationally. The respondent discussed that Company 4 sells a service, whereas if they had sold a physical product, they might would have been more impacted by Covid-19. Within the industry there has been a greater understanding upon delays and situations arising by the matter that this is a global pandemic and not just affecting a single country/company/region.

When comparing the Covid-19 pandemic to other global disruptions such as Brexit the respondent identified that Brexit is more affecting one country of import/export, but with Covid-19 there have been alternatives to import/export if one country shuts down. Brexit has affected the import/export regarding the customs and transport-ways which makes a larger difference for the respondent’s UK-based colleagues rather for him- or herself. For the two situations contrasted there are different parts in supply chains that are affected but the common denominator is that both have caused challenges with country import and exports.

For the future risk management strategies, the respondent discussed upon having plans set, but with certain flexibility and adaptable strategies for uncertain situations that may arise, and with high emphasis upon risk management consideration throughout the organizational levels. Lessons learned from the pandemic are mostly circulated around thinking outside of the box and be open towards different alternative solutions that might not seem appropriate at first sight.

#### 4.4.4 Summary of Findings Company 4

##### Covid-19

- Drastic changes for the organization of working from home.
- Internal communication affected by being less frequent and slower flow of information.
- Increase in work effectiveness and tasks being finished sooner, although at the cost of the individuals working more than pre-pandemic.
- Importance of keeping contacts with colleagues where weekly and monthly meeting play a higher importance.
- Organizationally some fluctuations internationally in effectiveness although an increased responsiveness towards customers.

##### Risk Management Coordination

- Risk being considered in the daily work, brand managers keeping the main responsibility for the risk management operations with involvement of operative managers.
- Some risks are easier to predict than others, where some occur without awareness until occurrence.
- Specific framework used by the respondent is the SWOT-analysis combined with budgeting, no specific model set organizationally for risk management processes.
- Varying risks faced by the organization with majority around fear of losing a customer, generating varying flexibility in the needs of each specific customer.

##### Implemented Measures during Covid-19

- Varying adaptation for the employees in working from home, transition phase where challenges arose but resolved over time.
- An attitude towards problems solving has developed and challenges has to be solved in one way or the other.
- Lessons learned during the pandemic and the risks that arose with thought of not being able to be managed has been solved, both organizationally and individually.
- Among parties in the supply chain there has been a greater understanding over the fact that the pandemic is a global situation that do affect all, and not just a single country/company/region.
- Brexit has affected one countries import and export, whereas with Covid-19 there has been alternatives to import and export if one country shuts down. The common challenge of the two disruptions is that there are proven challenges with country import and exports.
- For the future discussion about plans being set are on the rise, although with flexibility and adaptable situations, with risk management permeates the organizational levels.

*Table 7 Summary of Findings Company 4*

## **4.5 Company 5**

Company 5 is present in global supply chains mainly through their Swedish domestic transport of goods to and from the local airport. The goods handled by Company 5 are imported and exported to and from Sweden by air freight. Company 5 is located in the Gothenburg area and although carrying out across border road transport to the south Europe, the company has no international offices. Most of Company 5's transport operations are part of global supply chains in which the company is responsible for the "first and last mile" transportation.

At company 5 we interviewed a top manager with a fundamental role within the organization. The respondent thus has proper insights to the company's operations, transport volumes and risk management processes throughout the organization.

### **4.5.1 The Impact of Covid-19 for Company 5**

Company 5 were quite early on able to adapt to the pandemic and any workers that were able to work from home were asked to do so. The drivers of the transports were limited to 80% work capacity to adjust to the decreased amount of goods that arrived, due to Covid-19. Digitally the company were already set to work remotely, and the distribution terminal could function without physical presence, however in order to keep control supervision remains on location.

The internal communication was not affected to great extent since the assignments internally are set tight on individual level and the collaboration between departments is required since everyone has their own responsibilities with clear set structures.

Organizationally there was a larger impact upon the global customers for Company 5 since the different countries has been impacted and restricted to different extent during the pandemic which caused different difficulties in the communication. This did thereby cause different delays that has caused certain problems, more individually set to each customer.

On the operational level, workload and volumes handled had already prior to Covid-19 decreased due to the higher environmental awareness and pressure socially, where other alternative transport to air transportation has increased in volume and some customers has begun to home-shore part of their supply chains. The pandemic did however speed up the centralization of activities within Europe and since much of the goods being transported by air

mode comes with passenger planes, which nearly shut down due to the pandemic thereby causing a drop in volume of goods being transported for Company 5.

*“We had seen a tendency of less usage of air freight for some years prior to the pandemic due to the environmental aspect and organizations moving towards home-shoring within Europe.”*

#### **4.5.2 Coordination of Risk Management within Company 5**

The respondent is involved in all risk management activities within Company 5 where their set “model” is to measure probability vs. consequences in order to determine what priorities and measures that must be set to avoid and minimize the impact of risk. In combination with these measures there is a process-thinking regarding each measure and consideration internally. Previously, critical events such as the 2008 financial crisis and the 1991 recession has been experienced by the respondent within Company 5. Thus, although the pandemic rapidly had a global impact, the preparation and security within the firm were already set to handle these kinds of rapid events. The emphasis upon keeping internal liquidity to remain in business for a certain period is heavy underlined by the respondent in order to be fully prepared and able to survive.

*“All preparation carried out before the occurrence of risks, it what determines your organizational survival.”*

Within Company 5, any risk management decisions are taken at the higher management level. The overall structure set within is hierarchal organization where communication top-down<sup>6</sup> is required to each respective level below, whereas for the communication bottom-up there are no set structure, and the employees are encouraged to directly communicate to top management when needed.

Company 5 considers different risks, where one previously mentioned is the decreased use of air freight. They mitigate such risks by offering transportation in more niche goods segments. One aim for Company 5 is to keep their, what the respondent call, “temporary monopoly”, where it is set that most of customer relations should be based on respect for each other rather than formal contracts and that the organization seeks to be the only (i.e., best) option for their customers. The respondent stated that if Company 5 provides good services, it would be bad

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<sup>6</sup> Coordination from top management thereafter delegated down in the organization.

for their customers if they ended their services. This is highlighted as a competitive advantage where Company 5 has been able to consolidate goods from different competing customers in the same transports, which is beneficial both from an environmental and economic aspect.

According to the respondent, Company 5 has analyzed all potential risks and one employee is responsible for the environmental and quality aspects. Company 5 works with ISO certificates and the risk management work is described by the respondent to be an important part of the system and that it must permeate the entire organization.

#### **4.5.3 Risk Management Measures Implemented During Covid-19 by Company 5**

According to the respondent, Company 5 were in one way prepared for the pandemic organizationally in the way that they acted immediately rather than waiting for the situation to “pass by”. This were mainly due to prior experiences from the 2008 financial crisis and other global impacts on air transport, with previous volume drop in goods being transported. Company 5 are constantly prepared for that such situations can occur. Although Covid-19 is a new situation, the consequences of it for Company 5 resemble those of previous events.

At the point of the interview there has not been any evaluation of this current crisis, although there has been feedback upon that the measures that were carried out proved that their risk management strategy lasts so far and there has been a larger understanding and humbleness towards different situations. One lesson learned is that Company 5 could have a faster responsiveness towards finding solutions to problems arising, but as well importance of keeping flexibility. In addition to this, it was highly emphasized by the respondent upon the high pressure for free shipping models, although it is strongly underpinned that there is no such thing as “free-shipping” and that everything comes at a certain cost, and that the transport industry must be acknowledged to have its services at a cost.

#### 4.5.4 Summary of Findings Company 5

##### Covid-19

- Early adaption with working from home were set within the company for the individuals that were able to, digital solutions set already before the pandemic.
- The drivers of transport got temporary work relief down to 80% capacity due to the decreasing volume of goods due to the pandemic.
- Internal communication were not effected and the collaboration between department is very tight set with clear responsibilities for all individuals.
- Organizational impact were extensive with long delays in goods which did cause certain problems.
- Operational level were decreased prior the pandemic due to environmental awareness and social pressures, but also more alternative modes of transport appeared as customer centralized their activities within Europe.

##### Risk Management Coordination

- The set model for risk is taking consequence vs. probability in order to prioritize risks and evaluate what measures to implement for avoidance and minimizing the impact of risk occurrence.
- Prior experience of disruptive events has generated precautionous measures for any kind of events, thereby the organization holds internal liquidity in order to remain in business.
- Decision organizationally is set on a hierarchal structure with top-down decision making.
- Rather focus upon strong customer relationships through respect rather than formal contracts.

##### Implemented Measures during Covid-19

- The immediate action by the organization were seen as a strategic move rather than waiting for the pandemic to “pass by”, this from previous experiences of large volume drops.
- Evaluation of the pandemic are to follow, although feedback has been noted from the measures set along situations that arises.
- So far the respondent believes their strategy has lasted during the pandemic with a large understanding and humbleness towards different situations.
- For the future lesson learned is the responsiveness and flexibility to further develop upon for problems that appears, and solutions for them.
- The only similarity contrasted between Covid-19 and Brexit by the respondent is the two being disruptive events.

*Table 8 Summary of Findings Company 5*

## **4.6 Company 6**

Company 6 is a part of global supply chains through transportation, warehousing and supply chain management solutions. Company 6 offers all modes of transport with wholly owned vehicles/vessels as well as domestic and international transportation. The headquarter is located in another European country and there is local headquarter placed in Stockholm, but the company operates and holds an office in the Gothenburg region.

The respondent of Company 6 is a middle manager with large responsibilities within the e-commerce segment. The respondent has profound experience within and knowledge of Company 6 after having employment in numerous positions and been employed within the company for an extensive period of time.

### **4.6.1 The Impact of Covid-19 for Company 6**

On an individual perspective all workers (mostly concerned with B2B) at Company 6 that could work from home, began to do so from the start of the pandemic. However, employees who had to stay at the office (mostly concerned with B2C) have been allowed to, including the respondent whose workload increased rapidly due to Covid-19. The respondent was at first put on temporary work relief but returned to work only after a few days due to the large increase in workload. This increase was influenced by customers of Company 6 who are working with e-commerce, which has seen a rapid growth since the beginning of the pandemic. The respondent highlighted that on the B2C side of Company 6 there has never been this much to do, whereas in B2B there has been a large volume drop. The current situation is thus completely opposite to how it was prior the Covid-19 pandemic.

The internal communication is carried out via Skype or phone calls compared to priorly held face-to-face meetings, and with no travelling between offices which is a large contrast to before when the respondent has traveling to the different offices of Company 6 every other week.

Organizationally the global presence of Company 6 has been affected to a large extent, where offices have been shut down due to local restrictions. Despite this, the respondent feel that the communication has significantly improved with his/her customers since it occurs more frequently than prior to the pandemic. There have been webinars set up in order to still have some kind of activities with current customers to maintain the relationship, although the

respondent expressed that it is more difficult to gain new customers due to the lack of face-to-face meetings.

The significant increase in e-commerce volumes has boosted the industry, and the respondent highlighted the fact that two years ago there was a record in the volumes on Black Friday.

*“During the pandemic the volumes in (B2C) goods have made every day to be like Black Friday.”*

What has entangled the industry is the matter of how much longer it takes to get a container from China to Europe than prior to the pandemic where it would take around 30 days. Currently it takes about 45-50 days, which the respondent described to affect the whole world trade.

#### **4.6.2 Coordination of Risk Management within Company 6**

There are different risks that the respondent must work regularly with in his or her day-to-day work, where the biggest risk is losing an existing customer, which is seen to be more critical than not gaining a new customer, since an existing customer is already in the system. This risk is being carefully managed daily within the organization, however the respondent examines this weekly and the system within the organization keeps close tracking on each of the transports to detect if any customers deviate. Internally there is no individual responsibility towards results, and all employees are working towards different set KPI's. The respondent gets a regular update from the international HQ on each respective terminal's loading and shipping volumes in order to manage the KPI's regularly. Financial aspects and risks are managed daily by another office.

#### **4.6.3 Risk Management Measures Implemented During Covid-19 by Company 6**

The organization has had certain changes, as previously mentioned regarding the change from mostly B2B prior to the pandemic and to being mostly B2C as the pandemic started. However, the organization predicts that this trend will not last and that they will return to B2B after the pandemic, which Company 6 thus prepares for.

In terms of Brexit and Covid, the respondent emphasizes that “Brexit could have been the most stupid thing ever occurring” during the pandemic, with two large events having to be handled at the same time with no clear outcome for neither of them. The greatest impact is thought to be on the end-consumer since the prices of goods will significantly increase.

*“Seeing it long-term, the problems with Brexit will resolve, however with the pandemic on top of it makes things rather complicated.”*

Organizationally the respondent believes that the future outlook is that employees will demand to work from home more than prior the covid-19 pandemic, and thereby the employers must listen and be flexible. This could also entail that the local offices size capacity could be lowered. With more meetings being held digitally, this will generate timesaving for each individual since they might not need to travel to the same extent as before, which will as well be beneficial from an environmental perspective. E-commerce (B2C) and the environment are the “winners” of the pandemic while B2B trade have suffered. Another aspect discussed by the respondent is “free shipping” that is offered to consumers where he/she stated that there is no such thing, the shipping fee is added to the price of the products. Environmental aspects will be of high importance in the future where Company 6 has a vision to largely decrease their environmental impact to align with future regulations.

#### 4.6.4 Summary of Findings Company 6

##### Covid-19

- Encouraged all workers that could to work from home at the start of the pandemic to do so.
- Shift in workload, large volume drop in B2B but significant increase in B2C with the rapid volume increase in e-commerce.
- Travel restrictions and all communication occurring over digital solutions.
- Large impact of the pandemic on the operational activities, offices being shut and no traveling between offices occurs.
- Communication have had a significant improvement towards customers and importance of maintaining strong relationships.
- Difficulties in attaining new customer relationships due to the lack of physical interaction.

##### Risk Management Coordination

- Largest risks for the respondent is the fear of losing a customer, being constantly monitored.
- Varying risks that are constantly being worked with on a daily basis.
- Internally working with KPI's and no single individual has a responsibility regarding results.

##### Implemented measures during Covid-19

- Preparing for the situation to return to “normal” and back to the regular volumes on the B2B side of the organization after the pandemic.
- Brexit being emphasized to the largest extent affecting the prices for the end-consumers.
- For the future the organization will have demand from the workers to work from home and as an employer this requires flexibility and opportunity in lowering the local office capacity.
- Time saving with digital meeting and less traveling giving a better environmental perspective.

*Table 9 Summary of Findings Company 6*

## 4.7 Company 7

Company 7 is a GLP with international operations throughout the world. The offering of services within logistics and transportation are warehousing, transports as well as forth party logistics (4PL) services<sup>7</sup>. The global operations offer transportations of all types of goods. Within the Swedish operations, a large share of handled goods concerns packages including e-commerce.

At Company 7 we interviewed two middle managers, with different organizational and industry experience. The second interview was carried out since the first respondent did not feel confident enough nor held the right knowledge to answer all our questions. The empirical findings presented in the following sections combines the results from both interviews.

### 4.7.1 The Impact of Covid-19 for Company 7

Company 7 has since March 2020 had their employees working from home. The office has remained open, although with extensive restrictions, to allow employees that cannot work from home to stay at the office. The respondent exemplified these office restrictions with the fact that no more than one person is allowed in the elevators and that you keep one side in the corridors. Previously the respondent travelled a lot to customers globally which has now completely shifted to the digital solutions and communication. According to the respondent, digital communication is more time-effective, although the creativity and spontaneous parts are being lost. The social interaction is crucial for the customer relationship, especially for new customers that the respondent interacts with which has generated certain challenges in the daily work. In the segment of health care, the criticality of medical supplies has dramatically changed, and the requirement put for delivering goods on a global scale.

*“The way of working has drastically changed individually, but at the same time this is happening on a global scale which does give perspective.”*

(Lower manager, Company 7)

The communication between colleagues has been negatively impacted to a certain extent and the regular contact has been suffering, whereas the importance of maintaining contact with current customers has been largely enabled and more effective through digital solutions. While

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<sup>7</sup> A fourth party takes over the service of the whole supply chain.

the volume in packages increased due to the large increase in e-commerce, other segments within Company 7 have experienced certain volume losses.

#### **4.7.2 Coordination of Risk Management within Company 7**

The risk of losing customers is a large pillar in the risk management strategies within Company 7, since such losses would largely impact the whole organization. The contracts kept with the customers of Company 7 is a crucial part in the customer relationship where several risk management measures are kept preventing the occurrence and impacts of risks. In Sweden, Company 7 has 28 terminals, each serving an important part in the distribution chain. Thus, if one of these would have to close, it would have large impacts on the company's operations. Risks that might infer such implications is thus carefully monitored. The first changes that were implemented as a risk preventing measure was to keep capacity to be able to handle the large pressure put upon the fast shipping of medical supplies as well as the drastic increase in e-commerce.

*“The rapid growth in e-commerce has already been expected to increase, but now the volumes we handle every day is something that previously was predicted once a year for the event of Black-Friday.”*

(Lower manager, Company 7)

The respondent highlighted that the volumes increase and a situation that previously occurred once a year (Black Friday) has now become the daily volumes, which generate a high pressure on the operational level and efficiency of the organization.

#### **4.7.3 Risk Management Measures Implemented During Covid-19 by Company 7**

With the occurrence of the Covid-19 pandemic, Company 7 did not have previously set risk management strategies enough to handle the constantly changing environments, with so many situations occurring at the same time. However, the circumstances were addressed, and risk management processes was soon set to develop strategies. One large problem within the transport of goods was that drivers were not allowed into any of the terminals, generating troublesome situations for the individual employees and thereby challenges for the organization. The respondent expressed that it was a stressful period at the start of the pandemic with the handling of the goods and how to manage and maintain the flow within the distribution chain. An important risk aspect that came with the pandemic and the distribution of goods was the liability of who has the responsibility of the goods when the drivers are not allowed into

the terminals to drop of the goods. The solutions have been adapted along with the changing situations during the pandemic. The large use of digital solutions is a critical risk management consideration with the work force now working from home. However, a lot of prior preparations had been done that facilitated the remote working and use of tools such as Teams. The rather quick implementation of necessary risk management strategies in response to the pandemic enabled Company 7 to avoid real losses.

For the future, the respondent believes that there will be great opportunities for employees who wish to continue to work from home to do so, and he/she expects that there will be a 50/50 split of working from home and being at the office. There were fears within Company 7 that the efficiency would decrease as a consequence of remote work, however it has been the complete opposite, which is positive for the organization and its coordination within which has enabled this rather than to regard remote work as an obstacle. Overall, the future workplace will thereby give opportunities for the organization to keep lower costs for office space, but with the same work force and opportunity for the individuals without losing efficiency on an operational level.

#### 4.7.4 Summary of Findings Company 7

##### Covid-19

- Mainly working from home since the start of the pandemic, if the individuals are able to, unless strict measures are put at the local office.
- Social interaction being crucial for the customer relationships and the pandemic has generated certain challenges in the daily work.
- Communication internally has been suffering to a certain extent, although the external communication with customers has largely improved.
- Volume drop in certain segments.

##### Coordination of Risk Management

- Risk of losing customers is carefully monitored within organization.
- Contracts with customers large part of the customer relationship and risk management measures set in order to prevent risk occurrence.
- Importance of coordinating capacity with the significant increase of fast shipping of medical supplies.
- Large volume increases during the pandemic has generated high pressure on operative level and efficiency.

##### Implemented measures during Covid-19

- At first challenges during the pandemic of the constant changing environment.
- Radical period at start in order to manage the flow of goods within the distribution chain.
- Future opportunities for the organization will be the continuing remote work in combination with office work.
- Efficiency have not been lost despite remote work but might be a concern for the future of working from home.

Coordination and efficiency proven to be strong among the work force when taking the current situation in consideration.

*Table 10 Summary of Findings Company 7*

## **4.8 Company 8**

Company 8 is a large GLP with operations and offices all over Europe. Company 8 is divided into segments with different service offerings of road and sea transport and handling mostly of cargo although they offer transportation of people as well. The headquarter is placed in a large European country and the Gothenburg region holds a terminal and office.

At Company 8 we interviewed two individuals, one lower manager and one middle manager. The second interview was carried out since the first respondent did not feel confident enough to answer all our questions and the findings presented below are thus based on the interview with the middle manager.

### **4.8.1 The Impact of Covid-19 for Company 8**

The majority of Company 8's employees have since the beginning of March 2020 been working from home, with currently (as of March 2021) keeping 80% of the work force working from home. Previously held physical meetings have been replaced by digital communication via Teams where the respondent strongly believes that most meetings will remain digital post-pandemic as well. Something that has been lost with most of the workforce at home is the social factor and interaction with colleagues. This also applies to information sharing which is lost to a certain extent due to not overhearing one another at the office and some information might be hard to retrieve without having any discussions with colleagues at the office. On an operational level the impact of the pandemic was drastic where in April 2020 there were no goods to ship since countries were closing and the operations almost decreased to zero. Part of the work force was thus put on temporary work relief, which has been a large impact on the whole organization and is still affecting the operations. According to the respondent, there have been large fears within the industry concerning the spread of Covid-19 and the implementation of Brexit, which has largely affected the organization.

### **4.8.2 Coordination of Risk Management within Company 8**

Company 8 faces many risks, and it is important to keep risk management in mind on a daily basis, to maintain the operational flow. The risks concerned are highly centralized around different safety measures, such as who have access to the locations and goods. The respondent stated that:

*“Sometimes implementation of risk measures occurs without actual realization that is for the prevention of risks, since it holds such a natural flow in my daily work.”*

The risk management practice to identify safety risks is to be updated yearly to ensure the operational flow. Environmental aspects, such as emissions caused by Company 8, and the assessment of such risks also permeates the organization.

Each level within the organization holds risk management in their assignments, however the decision making is centralized at the upper management level. Each organizational unit has its own responsibilities and coordination of risk management. Risks are normally assessed by weighing the likelihood of risk occurrence to the impact of the risks, although short- and long-term aspects are also considered. The respondent stated that the short-term risks are often prioritized as they must be managed *now* and when those are handled you can think about the more long-term perspective. Concerning the likelihood and impact of risks, what is prioritized depend on the situation. Sometimes the least likely risk might have the largest impact and then you cannot disregard such risks solely because it is unlikely that they will occur. Risk management procedures vary depending on the situation, but potential risks are always kept in mind in everything that is done.

#### **4.8.3 Risk Management Measures Implemented During Covid-19 by Company 8**

There were large changes when the pandemic hit and there were no previously set strategies organizationally of what do when such a disruption occurs. The respondent expressed that within the organization, Covid-19 was initially thought to be a flu that would “pass by” whereas the enormous fast spread made the organizational realize that they needed to act quick.

*“We were maybe not so prepared but we adjusted quickly.”*

The way of working has functioned well, and operations are running smooth, but the risk management strategy is currently more about “making it work for now” during the crisis and thereafter the hope is to move back to more office work. For the future, the respondent predicts that there will be about 50/50 for digital and physical meetings and less traveling than prior to the pandemic.

When contrasting Brexit to the Covid-19 pandemic, the respondent stated that with Brexit there have been more questions and concerns regarding customs and the handling of shipments with learnings necessary for the long-term perspective. When discussing the impact of the pandemic

the respondent stated that country borders and companies closing due to spread has largely impacted the social aspect, which is strongly underpinned by the respondent.

*“Brexit is in some way more of a controlled chaos, whereas Covid-19 is out of our control.”*

The further evaluation and assessment of risk management measures implemented during the pandemic is to be examined later, to generate some guidelines and measures for the future of crisis management, where the ongoing documentation of measures will be valuable as well to evaluate lessons learned for the future.

#### 4.8.4 Summary of Findings Company 8

##### Covid-19

- Working from home from March 2020, currently keeping a capacity at 80% at the local office.
- Digital meetings since the start of the pandemic, respondent strongly believes this will remain post-pandemic.
- Lack of social factor and interaction causing some information loss from the prior knowledge sharing at the local office.
- Operative level drastically dropped at the start of the pandemic causing temporary work relief for large share of work force.
- Industry holds large fear for spread of the virus.

##### Coordination of Risk Management

- Risk occurrence natural flow in the respondents daily work.
- Varying of risks faced by the organization, but centralized around different safety measures.
- Risk assessment through probability vs. consequence of each risk.

##### Implemented measures during Covid-19

- No organizational plan were existing prior to the pandemic in how to handle a disruptive situation to this extent.
- Currently no evaluation has been addressed, where the priority is to making the situation work for now .
- The future is to move back to office work although the digital meetings seen to remain to a large extent and less traveling than prior to the pandemic.
- Brexit has influenced largely, where more learnings for the long-term perspective.
- Social impact by the pandemic strongly influences the organization.
- Further evaluation and measures for disruptions like the pandemic are to be carried out with constant documentation along the current situation.

*Table 11 Summary of Findings Company 8*

## **4.9 Company 9**

Company 9 operates with its fleet and participates in global supply chains through their transport of goods within Europe. Company 9 was recently founded through a joint venture of two shipping operators in Sweden, with the goal of developing transports with higher efficiency, while reducing the environmental footprint. Company 9 currently has ships being built with the newest technology and innovation, in order to further reduce their environmental impact with their transports.

The respondent of Company 9 is a top manager who has long experience within international shipping from Gothenburg to Europe. The respondent has profound experience within the shipping industry, both from an operational and management perspective.

### **4.9.1 The Impact of Covid-19 for Company 9**

Since the outbreak of Covid-19 in Sweden in March 2020, the employees of Company 9 have been working from home which is described by the respondent to be a big change from previously having the attitude that “you do your work when at the office and when at home you are off work”. However, the respondent feels that this change of working from home has worked very well within the organization and believes that even after Covid-19 most employees will continue to work from home for at least 2-3 days a week. The internal communication has functioned well and there have been regular meetings and communication kept between management and employees. The respondent even experiences that the communication has improved than prior to the pandemic. The largest fear on an operational level has been that the virus would spread among the crew at any of the ships, which so far has not occurred. Thus, no challenges have occurred on the operational level and any challenges on an individual level have been overcome.

### **4.9.2 Coordination of Risk Management within Company 9**

Risk management is always, anytime and any day considered within the organization and the respondent emphasized that this industry is “the industry with the most risks” with the basis upon the high capital held and that all activities carried out involve large risks.

*“We don’t think so much about it, the daily work is risk management.”*

The market Company 9 operates within is very volatile and thereby there are frequent and large changes and thus risk management measures are kept enabling quick handling and action. The container market has turned significantly for the past year, where the respondent expressed that:

*“Containers are stuck in places they shouldn’t be.”*

It is expected to take another year until the container supply is balanced again globally. The coordination of risk management permeates throughout the organization, and no single individual is assigned the management of risks for the organization, rather it is to a certain extent part of each individual roles. The main risks concern the operational activities where Company 9 has a set system to ensure the management of such risks, including processes and exercises to establish practices. The system is complex, and the respondent emphasized that risks do occur on a regular basis but the importance of keeping measures ready for implementation is fundamental to minimize the likelihood of occurrence and the impact of the situation. Severe risks rarely happen but when they do, the impact might be devastating. Financial risks are present daily, through currency, price of fleet and rents. Company 9 lease their fleet and according to the respondent volatile prices can hit extremely hard. The respondent stated that Company 9 can forecast a price but then that price decrease.

The respondent highlighted that it is of high importance to evaluate the long-term risks although the organization is focused on the day-to-day operations. Financial investments are made on a long-term basis. Currently, the organizational emphasis is put on what the future will look like, to keep up with the industry and its markets. Environmental aspects will play a large role and the respondent stated that it is important to be aware of that development and what regulations that will be applied to the logistic and transport industry. This is currently managed by ensuring that the fleet being developed keep high digitalization and advanced technology in order to remain competitive for the future. The more long-term aspects are important to consider as investments in a fleet is a long-term investment that takes many years to pay off.

#### **4.9.3 Risk Management Measures Implemented During Covid-19 by Company 9**

Company 9 drastically adapted to the restrictions of the pandemic, although they expected the pandemic to be over rather soon. The respondent believes that there will be a lot less traveling than prior to the pandemic. However, he or she emphasized that the physical meetings with

new customers are important and that the time spend outside of working hours are of high importance for the customer relationship, which are thought to remain important in the future relationship building with new customers. The constant changes have not impacted Company 9 to a large extent and the organization has proven to be flexible with all different implemented measures in response to Covid-19 restrictions. One reason for Company 9 not being affect largely on an operational level is that the product segment they work within has not been impacted. The respondent believes that Covid-19 has caused China to appear vulnerable and that more MNCs will reallocate their production closer to other activities, to protect their supply chains, where there is belief of more production moving to Europe. Such a development would infer a large opportunity for Company 9 since they are a large player within the European market.

From the pandemic, lessons-learned and measures implemented will for sure be kept for the future to be more prepared if anything similar will occur. The office locations have proven less important since the way of working from home has proven to be successful, and there is less reliance upon presence at office, working more with digital solutions. When contrasting the pandemic to Brexit, the problem with Brexit from the respondent's perspective was more about "what will happen the day it is implemented", whereas the pandemic has impacted to a larger extent on all organizational levels. Individually the respondent believes that it is important for the future to listen to the will of the workers and allow for the flexibility in order to have a healthy work-life balance, and that individuals are valued more than just for their work performance.

#### 4.9.4 Summary of Findings Company 9

##### Covid-19

- Been working at home since the March 2020 with the entry of the pandemic to Sweden.
- Completely change in working culture from prior being that you only work at the office and not at home.
- Future perspective that parts of the work will be done from home.
- Internal communication remained effective and regular communication kept between management and employees, highlighted to been improved during the pandemic.
- Largest operational fear for virus spreading on the ships.

##### Coordination of Risk Management

- Risk management organizationally kept within the operations due to the high risks involved within the industry.
- Risk coordination is distributed across the organization and all individuals does keep a certain extent of it within their roles.
- Risks regarding the operation of fleet is within a complex system.
- Risks does occur but measures are kept and implemented to minimize the occurrences and impacts.
- Long-term risks are important although the daily analysis and measures are carried out daily.
- The future is a large risk for the industry with rapid development and competitiveness.

##### Implemented measures during Covid-19

- Drastic measures were implemented in the organization to handle the pandemic.
- Lack of physical meetings does impact the customer relationship, especially in the start of a new customer relationship, likely to remain in the future.
- Flexibility within the organization has enabled the adaptability to the constant changes and restriction.
- The home-shoring (or closer to home) will largely benefit the organization for the future.
- Lessons learnt will be kept for the future and location of offices has proven to be less important due to the ability to work from home.
- Flexibility within the organization thought to be of large importance for the work force.

*Table 12 Summary of Findings Company 9*

## **4.10 Company 10**

Company 10 is a GLP that participates in global supply chains through their transport services in which they offer transport of containers and air freight. The headquarter is placed in Gothenburg and the company operates internationally through their partnerships with agents in an extensive global network. The network focus is upon “local heroes”, with focus to connect with the local expertise at each location.

The respondent of Company 10 is a top manager with profound experience within the transport sector. The respondent has profound experience within the industry and oversees the organization.

### **4.10.1 The Impact of Covid-19 for Company 10**

Company 10 has experienced both sides of the coin during the Covid-19 pandemic, where there was an initial large drop in volumes by 70% in the beginning of the pandemic due to the closing of Chinese production and thus exports. This impact appeared about six weeks after the Chinese production shut down due to the transport time from China and the only transports carried out at that time were orders that were filed prior to the pandemic. This left Company 10 unoccupied for some time and staff was put on temporary work relief, until the production commenced again. The volumes then increased significantly. The air freight increase was largely impacted by the pressure on fast deliveries of medical supplies and the large boost of e-commerce during the pandemic enabled Company 10 to recover from the larger crisis at the start of Covid-19. The customer base of Company 10 has grown rapidly during the pandemic and the respondent highlighted that this situation is not for all freight forwarders within the industry and that the organization has been a large part of their customers growth for the past year.

*“In one quarter we have set a record of volumes previously handled during a whole year.”*

There have been large obstacles due to the pandemic such as delays and different country restrictions impacting the shipping, where the respondent hopes for recovery to stabilize and return to more lean operations.

Company 10 put in restrictive measures due to the pandemic where all employees were allowed to work from home, and only having a limited of number of individuals at the office to avoid any spread at location. The largest focus has been upon the individual need of each employee and that the company supports with all available. Organizationally the industry operating

within follows a more traditional way of communicating and business is usually done through contacts and the existing network, but due to the Covid-19 the personal meetings have been replaced by digital communication. The respondent although emphasized upon that the personal meetings and events such as customer dinners after working hours are very important to maintain and develop new business contacts, which has been limited due to the pandemic.

#### **4.10.2 Coordination of Risk Management within Company 10**

The largest risks faced by Company 10 lie within their customer base, where a lot of actors in the market have gone out of business due to markets suffering during the pandemic. Company 10 have had customers that has gone out of business, which left Company 10 with goods that they did not get paid for due to reconstruction of businesses. To minimize the impact of such situations, Company 10 sells the goods at a price that covers their shipping fees, but no profit is made on the goods. The larger turnover that Company 10 has, the larger extent the risk management measures are carried out for the handling of customers. There are operational risks in terms of losing customers, ensuring that customers pay for Company 10's services and a lot of currency transactions are carried out to remain in business. Another risk management measure kept is to always keep up to date to the future of the industry, how the markets may change in terms of digital solutions or other changes, so that Company 10 keep up with the market and its competitors. The day-to-day risk management precaution is always kept within the organization.

#### **4.10.3 Risk Management Measures Implemented During Covid-19 by Company 10**

Prior to the pandemic Company 10 had set up an air freight terminal in Stockholm which was a large contributing factor to how they were able to manage the pandemic. The high demand for express deliveries of pharmaceutical and hygiene products provided Company 10 with an opportunity to carry out the import to the Swedish market. This illustrated why the diversification of services are important to remain in the industry, proving flexibility to their customers and the speed of their services according to the customer's needs. As soon as the market returned to more faster transport times after the first chock of the pandemic Company 10 had a continuing flow of goods and shipping services for their customers, due to the fact that they were able to act and deliver at a fast pace initially.

When contrasting the pandemic with Brexit, the pandemic affected Company 10 to a larger extent. With Brexit Company 10 now must assist their customers with help concerning

customs, which the respondent stated has benefited Company 10 since they now can offer more services.

What the respondent highlighted as lessons learned for the future is that Company 10 do deliver a high service level as well as that Company 10 (as well as other GLPs) can charge a higher price for the service they provide when customers understand the importance of it. Prior to the pandemic there was a high price-pressure for logistical services within supply chains but now the respondent feels that Company 10 can fight for the costs for the services being provided, in order to be competitive in the market.

#### 4.10.4 Summary of Findings Company 10

<p>Covid-19</p> <ul style="list-style-type: none"><li>□ There were immediate restrictive measures at the office location with a maximum limit of individuals at the office. The flexibility of working from home has been adopted towards each of the individual's needs.</li><li>□ Were largely impacted by China closing down at the start of the pandemic, where 90% of import activities for Company 10 comes from China.</li><li>□ Rapid increase in air freight transportation with medical supplies and strongly influenced by the boost of e-commerce.</li><li>□ The organizations keeps close growth with their customers.</li><li>□ Obstacles during the pandemic by delays and country restriction, hope for stability and more lean operations.</li><li>□ Working digitally has proven challenges in keeping the customer relationship, where the social around the work day with customers generates deeper relationships.</li></ul> <p>Coordination of Risk Management</p> <ul style="list-style-type: none"><li>□ Large share of risks surrounds the customer relationship.</li><li>□ The larger turnover by the organization, the larger extent the risk management measures are carried out.</li><li>□ Operative risks concerns the fear of losing customers, getting paid for the services and risks regarding currency transactions.</li><li>□ One large industry risk is of what the future holds and market changes.</li><li>□ Day-to-day risk precaution kept organizationally.</li></ul> <p>Implemented measures during Covid-19</p> <ul style="list-style-type: none"><li>□ The recently set-up air freight terminal in Stockholm was a large contributing factor in how Company 10 were able to manage the pandemic, relatively new market to supply services within.</li><li>□ Diversification of services proved important within the industry along with flexibility and fast delivery of services.</li><li>□ Lesson learned from the pandemic so far is that the service they provide does serve high importance and thereby the prices can be set according to this.</li><li>□ Higher emphasis to fight for the cost of the service, rather than focus upon price-pressuring.</li></ul>
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*Table 13 Summary of Findings Company 10*

## **4.11 Company 11**

Company 11 is a GLP with international presence and participates in global supply chains through the transport of goods, warehousing, and supply chain management solutions, which are handled by different segments. The organization historically has extensive experience on a global perspective and holds different branches and parts globally, along with ownership of ports. The Swedish headquarter is based in Gothenburg and has recently upgraded the service offering stretching along the whole supply chain of their customers.

The respondent of Company 11 is a middle manager with extensive international experience within the logistics and transport sector. The respondent has close daily contact with customers basis and the implementation of the company's service offering from start to end.

### **4.11.1 The Impact of Covid-19 for Company 11**

The biggest differences for Company 11 since the start of the Covid-19 pandemic is that only 30% of the workforce is allowed at the local office. Employees, including the respondent, that work more towards international customers have been able to work almost completely from home as travel restrictions prevent them from travelling and visiting their customers anyways. Although the initial contact with new customers preferably is taken during physical meetings, a large part of the continuous communication is even under normal circumstances carried out digitally. Thus, the readjustment to solely digital communication during Covid-19 has been relatively smooth. One challenge highlighted by the respondent is that now, during Covid-19, most meetings are scheduled and relying solely upon digital communication allow little room for spontaneous contact with colleagues. On the organizational level, communication among international offices was already carried out digitally so according to the respondent, Company 11 has thus not experienced any major difficulties concerning organizational communication during Covid-19. The biggest change on the operational level has been the shift in demand for certain goods due to Covid-19. Due to the large increase in e-commerce, warehouses have been full and thus not able to handle incoming deliveries leading to a challenge where containers have been kept in the ports.

### **4.11.2 Coordination of Risk Management within Company 11**

The respondent works mainly with more short-term risks regarding the structure of each customer's supply chain, how it may develop within the coming year and how Company 11 can prepare and implement solutions into the customers current supply chain. The more long-

term risks are kept in mind, but the respondent does not actively work with those risks compared to the active role he or she has in terms of managing short-term risks.

The largest risks on an operational level for Company 11 is drastic changes in the market, which are extremely difficult to predict, and rely heavily upon changes in the stock market. There are great challenges in predicting the future but there is strategical planning in each of the customers supply chain and the spread of risks in different markets. For unforeseen risks, such as the Covid-19 pandemic and natural disasters, Company 11 mitigate the impact on customers supply chains through clauses in the contract<sup>8</sup>.

Prioritizing risks within Company 11 is of large importance and risks that come with market fluctuations are prioritized and the company must be agile and maintain flexibility to act on such risks as they occur. Different country markets face different social and political risks which are constantly kept in mind within the company to ensure that measures towards those risks are in place. The respondent provided one example

*“We do transport a lot of military and aid cargo to special locations, and for those transports we need military escort. For some destinations, we don’t expect to get our container back.”*

Company 11 must therefore extensively consider security risks, both concerning the safety of the goods being transported as well as the employees transporting the goods.

#### **4.11.3 Risk Management Measures Implemented During Covid-19 by Company 11**

For the overall processes and strategy measures that has been put in place at Company 11 during Covid-19, there was not much alteration due to the pandemic itself but rather due to the intensive period of changes in transport volumes for different country markets. What has been the largest impact and alteration organizationally for Company 11 has been towards the prioritization of goods and orders (mostly from China) as well as what customers and markets that should be prioritized. The largest problem globally appeared in China in terms of shortage of containers, which forced Company 11 to use more creative solutions, such as the use of switched off refrigerated containers for non-refrigerated goods, as well as shipping empty containers to China.

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<sup>8</sup> Force majeure

According to the respondent, Company 11 has been able to adapt to the changing circumstances during Covid-19. The largest changes have been in the larger volumes and change in services that Company 11 has undergone, some departments have more to do than prior to the pandemic and the allocation of employees between departments have shifted with staff supporting more busy departments. Most situations that have occurred during the Covid-19 pandemic have been solved thanks to the end-to-end supply chain solution that was implemented within the company before the pandemic. Although not implemented as a precautionary measure but as a business development, this solution enables the company to manage the entire supply chain for their customers. Thus, they can avoid problems that often occur when overlapping services with third or fourth parties.

When contrasting the Covid-19 pandemic to Brexit there was an integration of a custom-firm in the U.K by Company 11 which allowed them to provide customers with the end-to-end supply chain solution. Although this allowed the organization to offer the whole solutions and facilitate the Brexit implementation, there were still certain obstacles to overcome by the organization. Brexit did however only affect one department within Company 11 whereas Covid-19 has impacted overall to a larger extent. For the future of risk management within Company 11, the respondent emphasized that certain flexibility must be kept internally, and that the different departments need to integrate to one another to a larger extent in order to remain efficient during times of larger volumes without added pressure on individuals work capability.

#### 4.11.4 Summary of Findings Company 11

##### Covid-19

- The pandemic forced the measure to keep a maximum of 30% capacity that can be allowed at the local office.
- Digital communication existed earlier with customers, where the largest change was the switch of digital tool. Physical contact proven important with customers at start of new projects.
- Operative level been impacted to the extent that there has been a switch in markets and demand for certain goods.
- Large increase in e-commerce generated certain challenges in warehousing and the handling of containers.

##### Coordination of Risk Management

- The short-term risk are of high importance for the respondents on a daily to yearly basis concerning the customers supply chain
- Largest operational risk is changes in the markets active within and any sudden changes in the stock markets that would influence the organization.
- Future risks are of large concern and the risk minimizing measures is the spread in different markets.
- Importance of prioritization of risks along market fluctuations, where the organization needs to be agile and flexible to act towards.

##### Implemented measures during Covid-19

- Largest changes has been the prioritization of goods and orders as well as customers and markets that needs prioritization.
- Shortage of containers globally has largely impacted the organization and industry, where more creative solutions has been used.
- The constant changing circumstances has influenced the organization, where a large increase in volumes as well changes in organizational services has occurred during the pandemic.
- The end-to-end services provided by the organization has been positive for the management of the pandemic and avoidance of problems that would occur with third- and/or fourth-parties.

*Table 14 Summary of Findings Company 11*

## **4.12 Summary of Findings**

Following is a summary of findings of all interviews for respective section of *Impact of Covid-19, Coordination of Risk Management* and lastly, *Risk Management Measures Implemented During Covid-19*. This section seeks to highlight the most relevant and interesting findings to identify similarities and differences.

### **4.12.1 Impact of Covid-19**

It has been highlighted in all interviews that when the outbreak of Covid-19 commenced in China and later when the spread began in Sweden, none of the companies at first expected it to impact the way of work and operations to the extent it soon did. All companies quickly responded to set national restrictions and implemented strategies to prevent the risk of a large spread at the offices and terminals by allowing only a small number of (essential) employees to be present at the office and terminal at one time. There was thus a rapid change to remote work from home which has worked rather well for all companies but nonetheless posed some challenges. By relying solely upon digital communication, spontaneous interaction between and across employees and managers have been limited and it was highlighted by several respondents that it is difficult to maintain close contact and ensure the well-being of employees. Some of the companies has implemented practices of daily or weekly informal meetings to 'catch up' with the employees. More formal meetings are held on schedule and no severe impacts have been brought up regarding deterioration of information sharing. One respondent stated however that sometimes it is difficult to ensure that you inform all relevant colleagues in a particular matter, in comparison to at the office where a lot of information is shared through overhearing. Although recognizing some benefits with remote work such as flexible work hours, some respondents stated that they have experienced a tendency to work more than before, contrasting prior the pandemic of maintaining office hours. In other words, it is difficult to know when to stop work since the work is always available at home. A few of the companies have been forced to put employees on temporary work relief but no respondent stated that employees have been laid-off.

Regarding communication, both improvements and deteriorations was brought up. Some stated that although the communication with local colleagues do not come as naturally as before the pandemic, it has been easier and more natural to contact colleagues at other offices than before when a lot of communication was made by visiting other offices. Many of the respondents

highlighted the importance of physical meetings and communication when signing contracts with new customers. Although most communication functions well digitally, the initial contacts held with new customers is difficult to replace with solely digital communication.

The main challenges on an operational level described by many respondents have been the quick market change and the initial production stop in China caused by Covid-19. Most respondents stated that their respective company has now returned volumes handled prior to Covid-19, however many have had to change their operations in terms of goods or transportations routes handled. As demand for some goods normally handled by the companies decreased, some of the companies adjusted their operations and began transporting goods whose demand rapidly increased, such as sanitary products and healthcare protection gear. Other respondents stated that while they have handled larger volumes of e-commerce than ever before, other segments of their business have suffered. In addition, there has been a high pressure on fast deliveries. The supply of containers has been strained, mostly due to paus in production in China. When the production returned to higher levels, not enough containers were available at the right time and location, which has forced some of the companies to ship empty containers and even using refrigerated containers for non-refrigerated goods, which has impacted the efficiency.

#### **4.12.2 Coordination of Risk Management**

When asked about the respective company's risk management strategies, some respondents stated that they do have set strategies, either determined at each location or at the organizational headquarter which is then signaled throughout the entire organization. However, most respondents stated that to their knowledge there are no organizationally set strategies rather there are risk management processes and practices in how the company should work with risks. The level of coordination of risk management seems to depend on the size and international spread of the companies. Financial and more long-term risks are in general managed by top management, mainly on headquarter level, and according to the respondents pursue set assessment practices. The same goes for organizational uncertainties about the future, namely how organizations will comply with environmental standards and changing markets, which are considered at top management level. It was highlighted by some respondents that the logistic and transport industry is subject to high financial and organizational risks, both due to its role within global supply chains where the GLPs is dependent upon other participating companies

and the type of long-term investments that for instance fleets require and volatile goods markets.

Some short-term risks apply to all included companies while others are more specific to the type of goods handled and mode of transport offered by each company. Certain goods handled by some of the companies bring security risks with potentially more severe impact, both for the company and its surroundings. This requires these companies to constantly consider security aspects and to some extent even terrorist threats. Different destinations also come with various levels of political risks. Short-term risks and frequent, known risks are continuously considered by all companies and in general the management of such risks are carried out by all individuals on all managerial levels. Each location within the companies implements risk measures depending on the activity and service they provide. The main finding regarding risk coordination is that although certain risks and risk management strategies are handled and set at top management level, risk management is practiced by all respondents. Although not always being regarded as risk management as it is part of the daily work.

#### **4.12.3 Risk Management Measures Implemented During Covid-19**

From a risk management perspective, it can be concluded from the interviews that none of the respondents nor their respective organization at first expected that the Covid-19 pandemic would affect to the extent that it has, so far. Both initial consequences and subsequent risks by Covid-19 have been continuously managed by the companies. In terms of virus spread and the safety of employees, all included companies have shifted to remote work, although to varying extent. Essential staff, such as terminal workers and a small number of additional staff have been allowed at the office, and digital solutions have been set in place to facilitate the work from home. These measures have been implemented to constantly align with national guidelines and restrictions. Remote work has forced many of the organizations to arrange and develop a digital setup that they did not have prior to Covid-19.

To manage and adapt to market changes due to Covid-19, the companies have ensured flexibility in terms of what goods they can offer transport and logistic services for, as well as more innovative solutions to ensure those transports and services. With the fast-developing Covid-19 situation, the focus has lied upon the management of short-term risks and ensuring that the flow within global supply chains is maintained.

In contrast to other disruptions, especially Brexit, some of the companies have been more affected than others, although all respondents stated that Covid-19 has impacted the organization as a whole to a larger extent. Brexit mostly brought challenges on some of the companies' customers with a heavy load of customs documentation. One company has managed this by offering in-house customs guidance to their customers, which has proved beneficial. Another company experienced a reorganization where they had their headquarter moved from UK, something the respondent stated to be (at least partly) due to Brexit.

Some respondents stated that their companies have begun to evaluate the impact and mainly their handling of and responsive measures towards the pandemic, however most stated that a final evaluation is yet to be carried out. Some concerns for the continuance of Covid-19 pandemic were highlighted, such as for how long the remote way of working will last. On the operational level, digital communication has worked well but in terms of informal communication and the well-being of staff, it was raised that digital communication and work from home might result in a negative impact soon. Most respondents stated that they believe that there will be a new way of working after the pandemic, where employees will split their time between the office and home, and it will therefore be important for managers to recognize and listen to the will of their employees.

So far, the respondents stated that one lesson learned is the importance of maintaining flexibility both within the organization and for the operations. Companies must remain flexible to respond to quick market changes and supply chain disruptions and there must be an understanding of the entire supply chain to minimize delays.

#### **4.12.4 Additional findings**

What has been evident throughout the interviews is that not all respondents have previously realized that their work tasks include risk management. Some of the companies have certain management positions that explicitly work with risk management, however, most individuals with no expressed risk management responsibilities have risk management activities incorporated in their work.

Another aspect that was expressed by some respondents is that transport and logistics services are often disregarded in the sense that some participants within global supply chains just expect these activities to work and run smoothly. The Covid-19 pandemic has not only illustrated vulnerability of supply chains in terms of production stops, but also the importance of the

transport and logistic industry. One respondent stated that with a higher recognition of the industry and the services it provides, GLPs might be able to charge a higher price for their services. This was touched upon by another respondent who stated that “there is no such thing as free shipping”, which aims at that within e-commerce consumers are often offered the alternative of free shipping.

## 5 Analysis

*This chapter analyzes the empirical findings of this study in contrast to the applied theoretical framework. First, in section 5.1 the empirical findings concerning the case companies' implementation of risk management processes and practices prior to the Covid-19 pandemic are analyzed. Section 5.1 is sought to serve as a benchmark to section 5.2 where the Covid-19 impact on the companies and their risk management strategies in response to Covid-19 pandemic are analyzed.*

### 5.1 Supply Chain Risk Management

Within the theoretical framework of this study, supply chain risk management have been presented through the processes of *identification, assessment, mitigation, response, and risk management coordination*. The following sections in 5.1 seek to account for these processes by analysing the empirical findings concerning the GLPs implemented processes and practices thereof as well strategies prior to Covid-19 and thus then mainly concern organizational risks.

#### 5.1.1 Identified Risks

What is evident in the empirical findings is that the case companies are subject to different types of risks and do make prioritizations within their risk management strategies thereafter. Although all being global logistics providers participating in global supply chains, the case companies provide different services, transport modes and are active in various product and customer segments, as well as markets. Thus, certain types of risks, such as financial and customer related risks were highlighted in almost all cases while other risks, such as security, seem to be if not company specific, at least specific to the type of goods a company provide for, as well as in what country markets the company is active within. This is thus in line with theoretical assumptions by Sodhi and Tang (2012) and Hopkin (2017) about how the identification and subsequently categorization of risks depend on subjective internal and external organizational settings.

In terms of set processes and practices for the identification of risks, which is described by Waters (2007) to be a necessity in avoiding too subjective assessments and disregarded risks, few companies could provide detailed information of how such identification processes are carried out (i.e., practiced). Instead, a general finding is that each individual responsible for a certain segment or task is also responsible for identifying potential risks. For instance, the respondent of Company 4 personally uses SWOT analysis to identify risks and opportunities,

but the respondent could not account for any set practices within Company 4. Most companies stated that although identification and categorization of risks are carried out, it is difficult, if not impossible to account for all potential risks. Company 5 stated that they have clear set practices for this and was the only company to state that they have identified all potential risks. This statement however contradicts the findings of all other case companies and we argue that it refers to most of the organizational risks but with disruptions as Covid-19 it is difficult to identify *all* potential risks.

Following is a review of the different types of risks identified in the interviews. All risks do not apply to all case companies but have in general been brought up by many of the respondents. We then contrast the findings to the theoretical framework on identification and categorization of risks to provide an overview of what risks global logistics providers are subject to.

### **5.1.2 Risks for GLPs**

Most risks that bring negative impact cause financial loss in one way or another, however certain risks are pure financial ones. Such risks were brought up to a large extent in the interviews although the source of risk varies among the companies. For Company 3 and 11 the main source of financial risk is drastic market fluctuations. In addition, Company 3 investments in fleet are made upon expected long-term return which then makes them vulnerable towards large market fluctuations. Due to the type of good handled by Company 1, whose price and demand depend heavily on stock-market, fluctuations of the stock-market infer financial risks. Company 10 exemplified another source of financial risks related to customers' liquidity, with which they have experienced issues when customers have gone bankrupt. These potential sources of risks align with definition of financial risks by Yilmaz and Flouris (2017), who further discuss organizational liquidity as a financial risk. The financial position through solidity was touched upon by one case company, who expressed that they have a certain level of organizational solidity which enables the company to manage potential financial losses caused by other risks. This hereby enables the organization to remain in business for a certain period of time without any income as a measure to manage what Yilmaz and Flouris (2017) touches upon with organizational liquidity as a risk. Thus, organizational liquidity has not clearly been expressed as a risk by the case companies.

Potential risks relating to customers were discussed by some of the companies. They expressed how customer risks partly concern ensuring that the company can provide the service asked for

and expected by their customers to avoid the risk of losing existing customers. Thus, the risk of losing customers was mainly described as an internal risk. However, customers can also be lost for reasons unrelated to the own organization and is therefore denoted as both an internal and external risk.

Security risks was brought up by many of the companies, where for some companies this relates largely to the type of goods they handle while for others it concerns the safety of staff and avoiding accidents at the terminals. Company 1 stated that all employees present at the office and terminal must be aware of such risks, due to the goods handled and since depending on the location of the office and terminal it could lead to severe impacts if an accident were to occur. For instance, the respondent of Company 1 stated that due to their location they may potentially, although unlikely, be exposed to terrorist threats. For Company 11, security risks rather concern potentially unsafe destinations for which the safety of goods and staff must be considered. Company 8 exemplified another security risk to be unauthorized individuals gaining access to the goods and offices. From the examples provided by the companies, it is evident that security risks may arise both internally and externally.

Environmental risks were discussed by many of the companies both regarding current risks such as accidents causing leakages and high emissions caused by transportation. However, environmental risks seem to be expected by most companies to be of larger concern in the future, where future regulations must be complied with and with a larger demand of sustainability among customers and consumers. In addition, future environmental risks are by the companies rather viewed as potential risks if the companies for some reason will not be able to keep up with the development it requires.

Organizationally, risks related to human relations concerning employees' well-being and working environment have been exemplified throughout some of the interviews. Such risks are usually maintained, and practices and controls are implemented to avoid negative consequences affecting the employees. Under normal circumstances, companies are rather concerned with maintaining employees' well-being and good working environment at the office, and potential risks may mainly arise on individual levels. During exceptional circumstances, such as during Covid-19, it has however become evident that such risks may occur to larger extent. Although the likelihood of occurrence and impact of such risks increase during disruptions, the source of risk is still internal.

All companies stated that Covid-19 is a completely new situation, although some emphasized upon certain similarities to previous disruptions in terms of organizational consequences. Thus, disruptions risks were discussed among most companies and were naturally exemplified by Covid-19, but also the 2008 financial crisis and natural disasters. In contrast to above mentioned types of risks, disruptions risks were described by the companies to be impossible to identify in advance and that it is an event that occurs externally. The difficulty or even impossibility to identify disruption risks as stated by the respondents are also emphasized in the supply chain risk management literature (Waters, 2007).

From the interviews we have thus identified the following types of risks; *financial risks*, *customer risks*, *security risks*, *environmental risks*, *human relations related risks* and *disruptions risks*. Table 15 illustrates the different types of risks and the source of risk, which is limited to internal, i.e., the risk arises within the organization or external, i.e., the risk arises outside of the organization.

TYPE OF RISK	SOURCE OF RISK	THEORETICAL CATEGORIZATION
FINANCIAL RISKS	External	Organizational
CUSTOMER RISKS	Internal and external	Organizational
SECURITY RISK	Internal and external	Organizational
ENVIRONMENTAL RISK	Internal	Organizational
HUMAN RELATIONS RELATED RISKS	Internal	Organizational
DISRUPTION RISK	External	Disruption

*Table 15 Categorization of risks from the empirical findings, compiled by authors*

Since most risks have to some degree been described by all Companies, it is evident that these risks are the most prominent for global logistics providers. In the previous theoretical

categorization of risks in section 2.4, various categorizations based on risk sources, risk consequences or organizational segmentation have been presented. The empirical findings prove a large emphasis upon how most risks are handled daily, and we therefore argue that the identified risks are more appropriately categorized by how they are managed within the case companies than by the source of risk. Although such aspects are to various extent included in all categorizations described in the theoretical framework, the most suitable and best explanatory categorization is the *organizational* and *disruption* risks by Choi et al. (2016), which are denoted in the third column in table 15. This categorization thus relies upon the empirical findings in which the risks identified among the case companies are either described to be regular and frequently managed risks, i.e., organizational risks, or rare and uncertain risks, i.e., disruption risks. Other categorizations emphasized upon in the theoretical framework, such as Sodhi and Tang (2012) and Yilmaz and Flouris (2017), also concern the management of risk as a basis for categorization, however Choi et al. (2016) clearly distinguishes between organizational management and disruption management.

Although the second column in table 15 denotes the source of risk as either internal or external which aligns with the categorization of Juttner et al. (2003), Basu and Wright (2017) and Waters (2007), we argue that since the empirical findings mostly concern *how* risks are managed rather than the source of risks, the final categorization is more appropriately denoted as organizational versus disruption based on the type of management of risks. The source of risk should however not be disregarded as it provides a more nuanced picture of the identified risks. We wish to highlight that the above categorization of risks only concerns the risks identified by the case companies and the respondents' descriptions of whether these (mainly) occur internally or externally and if they are managed daily (i.e., organizational risks) or not (i.e., disruption risks). We can thereby not exclude that the identified risks are subject to other sources of risks.

Concerning the remaining theoretical categorizations presented in the theoretical framework, which are Hopkin (2017), Talluri et al. (2013), Tomlin (2006) and Chopra and Sodhi (2004), we argue that although some of their different types of risks may bare some resembles to our identified risks, they include categories that are not evident in our empirical findings. For instance, Hopkin (2017) include the *opportunity risk* category, which is not applicable to our identified risks as the emphasis in the empirical findings is upon risks with negative impact.

We further argue that a categorization mainly based upon the consequences of risks, such as the ones by Talluri et al. (2013), Tomlin (2006) and Chopra and Sodhi (2004), is deficient in this case as the empirical findings illustrate that the consequences of risks may be severe both for organizational and disruption risks although they are usually more severe in case of the latter. Likewise, disruption risks do not always infer as negative consequences as expected.

With the risks identified in the empirical findings, we need to return to the definition of risk applied in this study, that is the uncertainty of an event, either with complete uncertainty and unidentified occurrence or with uncertainty of the likelihood of occurrence and/or the impact of the event. This definition builds on the concept of uncertainty by Knight (1921) and resembles the definition of Sodhi and Tang (2012) while it distinguishes somewhat from the definition in the International Organization of Standardization risk management guidelines (ISO, 2018) and by Waters (2007). The applied definition in this study allows for risks to both be viewed as the occurrence of an uncertain event, which aligns with the definition by Waters (2007) and the International Organization of Standardization risk management guidelines (ISO, 2018) while as well as regarding risk as a known event but whose likelihood of occurrence and impact are uncertain. It is evident from the empirical findings that although risks with complete uncertainty, or genuine uncertainty which it is called by Knight (1921), do occur, most risks subject to the GLPs in this study rather concerns uncertainty of if and when it will occur. Thus, the uncertainty is rather a matter of occurrence and potential impact than uncertainty about the risk itself since the risks are normally identified. In section 5.1.2.1 follows an elaboration and analysis of how such risks are identified within case companies.

### **5.1.3 Risk Management Processes**

Following the discussions upon different risks, the whole risk management process serves a crucial factor upon risks through the identification, assessment and mitigation processes, a finding that we see being taken into consideration within the case companies. As according to Sodhi and Tang (2012) the risk management processes and following strategies are a determining factor of how organizations can maintain operational levels during a disruptive event.

Previous sections have analyzed what risks that are commonly considered within the case companies and how different risk management processes are implemented to identify, assess, and mitigate from these risks. Thereby the following discussion concern the respective part of

the risk management processes, the practices thereof and what characteristics of these have been found in the empirical gathering.

#### 5.1.3.1 Risk identification process

There is a great consensus within the supply chain risk management literature that set practices for the identification of risks within organizations are necessary to develop proper risk management strategies (Basu & Wright, 2017; Sodhi & Tang, 2012; Manuj & Mentzer, 2008; Waters, 2007). However, the previous section briefly touched upon how findings from the interviews indicate that organizationally set risk identification practices are not implemented within the case companies to the same extent as argued for by the literature. Rather, a general finding is that managers and employees are responsible for identifying potential risks within their specific area of responsibility. Although certain risks are recurring and thus understood throughout the organization, different risk identification practices seem to be implemented at different managerial levels. Yet, there are some exceptions highlighted by a few of the case companies where practices are implemented on a regular basis with a purpose of communicating identification processes throughout the organization. Within Company 3, there is a yearly exercise that serves to identify any potential risks throughout the entire supply chain. At Company 2, although each local office is responsible for identifying and assessing local risks, there are set organizational guidelines on how such processes should be implemented (i.e., practiced) and all employees must take a yearly test and regular courses to keep up to date with organizational practices and market developments to enable identification of relevant risks. Within Company 8, practices to identify potential security risks are updated on a yearly basis.

Thus, although distinct risk identification practices have not been detected from all case companies, there seems to be large awareness among the employees of the companies regarding what risks to consider. Further, no respondent expressed any concerns regarding this. Throughout the interviews, many respondents stated that often they work with risk management without considering it to be risk management and it has been described to be such a natural part of the daily work, which aligns with suggestions by Sodhi and Tang (2012). Thus, it is possible that despite this lack of identified organizational set practices in the empirical findings, the process of identification is carried out and practices on how to identify risks may be set in reality but perhaps on a more local or even managerial level than organizationally.

### 5.1.3.2 Risk Assessment Process

Risk assessment processes and mitigation strategies seem to be largely implemented within the companies. Risk assessment is described to permeate the organizations and kept in mind of employees in each part of their work. Frequent organizational risks are assessed and managed daily or at least regularly within the companies which aligns with the proposed supply chain risk management routine by Basu and Wright (2017). Further, as there seems to be a practice of incorporating management of such risks in the daily work it might also align with Sodhi and Tang's (2012) argument that normal risks should not be the focus of supply chain risk management but rather included in supply chain management.

When assessing risks, the literature suggest that organizations should estimate the likelihood of the risk to occur and the potential impact of the risk to enable prioritization of risks (Sodhi & Tang, 2012; Basu & Wright, 2017; Waters, 2017). This assessment practice has been emphasized upon in most of the interviews and is thus proved to be the most used method to assess risks within the case companies. The supply chain risk management literature further suggest that organizations should prioritize risks with the highest score (by rating likelihood and impact from low to high) (Waters, 2007), meaning that a risk with the lowest likelihood but with the largest impact would be equally prioritized as risks with the highest likelihood but smallest impact. However, the empirical findings provide a somewhat more nuanced picture by illustrating that prioritization depend on situational aspects in addition to likelihood and impact. Such situational aspects described by the companies are mainly the short- and long-term perspective, where most companies prioritize short-term risks, although it was emphasized that long-term risks are always kept in mind. The short-term perspective includes both the estimated occurrence of risk as well as whether the risk will bring consequences for the company in the near or far future. This prioritization thus focuses on the most urgent risks and the respondents stated that first when short-term risks have been assessed, the focus could shift towards the less urgent more long-term risks.

The case companies who did not state that they use the assessment method of likelihood and impact of risks, did not either clarify what other particular practice that is used, rather they seem to prioritize certain types of risks. Based on the empirical findings, what types of risks that are prioritized depend on what segment and organizational department the respondent works within. Thus, different types of risks may be prioritized depending on the relevance to

each employee's responsibility. Whether the rating of likelihood and impact of risks is applied within these types of risks for prioritization was not established during the interviews.

#### 5.1.3.3 Risk mitigation processes

The empirical findings clearly demonstrate how all case companies through different practices have implemented assessment processes that enable a suitable prioritization of risks for each respective company. According to the supply chain risk management literature, the assessment of risks is carried out to determine a suitable risk management strategy, which will enable organizations to continuously manage regular market fluctuations while during exceptional circumstances, such caused by Covid-19, maintain a basic operational level (Tang, 2006; Sodhi & Tang, 2012). Based on the empirical findings, it is evident that this is not just an aim among the case companies, but all have implemented risk management strategies that have proven to successfully serve this purpose.

Implementing mitigation strategies that seek to decrease the likelihood of risk occurrence and the impact of risk is the most salient strategy within all case companies. During normal circumstances, regular market fluctuations bring recurrent financial risks for which some of the case companies have implemented pervading mitigation measures. For Company 3, financial risks are a matter of fleet investments and volatile markets that highly depend both on demand and stock-market fluctuations. Their strategy to mitigate from the impact of such financial risks is to strategically compose their fleet of owned and leased ships. In addition, contracts for leased ships are also determined based on predicted and potentially unpredicted market fluctuations to minimize financial losses. For many of the companies, losing existing customers is one constantly present risk, which occurrence they seek to mitigate through continuous maintenance of customer relations. Company 4 described how this requires a high level of flexibility as each customer relation calls for specific matters. Both above examples of how the respective global logistic provider seeks to mitigate the impact of risk concerns organizational risks. Further implementations of risk management strategies in relation to impacts of Covid-19, i.e., disruptions, are analyzed in section 5.2.

According to Waters (2007) there is a tendency among organizations to either not realize or solely disregard that even rare or unlikely risky events may occur. The empirical findings however show no such tendency among the case companies, but the respondents rather expressed that no risks are disregarded, and that risk management strategies are implemented with a purpose to account for all potential risks. The empirical findings demonstrate that

alternative risk management strategies such as solely accepting the risk or transferring the impact of the risk once it occurs (Waters, 2007.; Basu & Wright, 2017; Sodhi & Tang, 2012) are not actively implemented by the companies. A strategy of transferring the impact of risks is only implemented when there is no better alternative in order to minimize the negative impact on the own organization. Considering the Covid-19 pandemic, the respondents emphasized that some risks are naturally difficult or even impossible to identify, assess and thus proactively mitigate towards. Hence, when such situations occur companies may be forced to employ another strategy. Disruptive events, such as the global financial crisis and natural disasters, are the most prominent examples for which organizations may to a certain extent prepare for the possibility of occurrence but are limited due to the lack of knowledge of when and where such risks will occur. One transferring strategy towards such risks was exemplified by Company 11 who described how they transfer the impact to their customers by including certain clauses in their contracts. In other words, Company 11 release themselves from responsibility of incomplete services as a result of unforeseen external disruptions. However, to transfer the consequences of risk does, according to Waters (2007) not necessarily imply that all impact is transferred from the organization. This is true, however the literature presents this strategy as a simple and perhaps more naive strategy that is implemented instead of seeking to mitigate risks that actually could be mitigated. The above example from the empirical findings however illustrates a situation where a particular risk cannot be mitigated and in which transferring the impact of risk resides as the only option to minimize losses for the own organization. It is evident, both from the supply chain risk management literature and the empirical findings that, when possible, proper risk mitigation strategies are preferred to best reduce both the occurrence and impact of risks.

Whenever risks occur, the utmost important aspect is how effectively organizations respond to the risk, since it determines to what extent the organization is affected (Sodhi & Tang, 2012, Waters, 2007). How quickly and effectively risk responses may be implemented rely upon previous set risk management strategies. This was highlighted by Company 5 who stated that learnings from previous disruptions such as the 2008 financial crisis enabled them to employ a quicker response strategy when Covid-19 hit. The empirical findings concerning risk responses implemented within the case companies largely revolve around the Covid-19 pandemic and is thus analyzed in section 5.2.

#### **5.1.4 Risk Management Coordination**

Previous sections have analyzed what risks that are commonly considered within the case companies and how different risk management processes are implemented to identify, assess, and mitigate from these risks. Considering these risk management processes, it is evident from the empirical findings that although the coordination of such varies among the case companies, there are some identified patterns. Any identified variations seem to be company specific and determined by the general organizational structure and coordination. Based on the empirical findings, we have not detected any variations concerning risk management coordination that evidently depend on the type of product segment and services offered by the case companies or on the size of the companies and the type and extent of interaction between different organizational units.

Within the empirical findings, it has been largely emphasized upon that risk management processes are incorporated in practically each respondent's and other employees' daily work. This to a degree where it is not even always considered to be risk management but rather just a natural part of work assignments, which supports the statement by Sodhi and Tang (2012) regarding how normal and frequent risks are handled continuously within organizations. The set risk management processes, whether set on HQ or local level, seem to serve its purpose as no respondent raised concerns about how it is managed. According to the supply chain risk management literature, the most important aspect of risk management coordination is to communicate the importance the processes and practices thereof throughout the organization so that regardless of the hierarchical structure, each individual is aware of their respective risk management responsibilities (Hopkin, 2017; Basu & Wright, 2017). Based on the empirical findings, it is evident that importance is acknowledge and while the respondents did not account for whom within the organization that is responsible for each identified type of risk, they could all clearly account for what their own particular risk management responsibility is.

One pattern that has appeared among the case company concerns the locality of risk management coordination, where at each terminal and warehouse, there are assigned managers responsible for present risks, which according to the respondents mainly revolve around security. This pattern extends to local offices as well, where each office manages each specific risk relevant to their activities. The general finding aligns with Hopkin's (2017) outlined stages of risk management responsibility where the setting of required risk standards is either done at top management level locally or by HQ and followed by the implementation of risk management standards which is continuously practiced by individuals at all managerial levels.

Regarding the final stage described by Hopkin (2017) which is the monitoring of risk performance, some companies stated that this responsibility falls on the chief executive officer while being continuously evaluated individually as well to draw from any lessons learned and thus improve their future risk management. One respondent stated that employees are not responsible for results, but their strategy is to work towards set KPI's and that performance is monitored by the HQ who provides each terminal with regular update of the KPI development.

The daily managed risks at a local level seem for some of the case companies to include all types of risk, while for others certain risks that require extensive forecasts or is more of a long-term character and that are relevant for the entire organization are managed at top management level. This was especially exemplified for financial risks, for which the responsibility within Company 2, 3 and 6 is expressed to be coordinated either to the HQ or another specific office.

Concerning the hierarchical structure of risk management, the empirical findings demonstrate that good organizational communication plays a key role to enable quick action. Communication and set decision structures are emphasized upon within the literature as well, where Basu and Wright (2017) state that having clear set structures for decision-making and risk management responsibilities could lead to better decisions for organizations. Within Company 3, the respondent described how they hold a large organizational communication network that facilitates rapid decisions. The decision paths are short, and each organizational unit thus holds an autonomy when having to make quick decisions but with organizational coherence rather than organizational inertia. Within Company 5, the risk management processes are to a certain extent coordinated throughout the organization but there is one assigned employee responsible for some types of risk. All final risk management decisions are taken by top management. The hierarchical structure is designed so that decisions and matters set at top management level, must be communicated downwards by degrees to each responsible lower manager and then employees whereas for down-top matters and concerns, employees are encouraged to communicate directly to a manager of their choice. The hierarchical structure thus seems to vary among the case companies. Concerning the two above examples, the former who described short decision paths and high autonomy in decision-making is a substantially larger organization than the latter. That fact might be one contributing factor to why decision paths must be short whereas for Company 5, although there is a clear top-down hierarchical structure for decision-making in risk management, the decision-paths might in reality be similar to those of one organizational unit of Company 3.

## **5.2 Risk Management measures during Covid-19**

When the pandemic started, the case companies were forced to take further measures organizationally as the spread increased and measures had to be implemented to mitigate the risks that would have an impact on the organizations. To manage the risks associated with the pandemic there were required alterations among the case companies risk management strategies, as emphasized, there were no set measures organizationally of how to handle a global pandemic.

### **5.2.1 Risk Management Strategy**

The risk management strategy has shown to be a fundamental basis for how organizations handle risk, supported by our empirical findings and the theoretical framework developed. Sodhi and Tang (2012) emphasizes that the consequences of risks is not caused by the risk itself, rather than the response to risk, thereof how it is handled by an organization.

#### **5.2.1.1 Acceptance of risk**

For the strategies set during the Covid-19 pandemic, the disruptive and rather unforeseen global situation did to a large extent force the organizations to find strategies for how to cope with this and accept the ongoing disruption. Waters (2007) emphasizes upon how the most appropriate strategy regarding infrequent disruptive events, such as the Covid-19 pandemic, is to firstly accept the risk, as it could not be mitigated. Although the consequences for any risk is about how you choose to handle it, what can be concluded from the empirical findings is that the uncertainty about the pandemic did force the companies to firstly accept the situation of the pandemic and focus on designing a response strategy, which required organizational and individual flexibility among the case companies.

#### **5.2.1.2 Response and flexibility**

Chopra and Sodhi (2004) argue over flexibility to be the most cost-efficient approach towards risks and that organizations should develop a mitigation strategy that covers as many risks as possible, and the empirical findings show that flexibility has proved by to be a fundamental factor organizationally when handling a crisis of a disruptive event. The case companies have managed the disruption through a flexibility approach where one shifted their service offering by using their fleet for warehousing, while others adapted their services to allow for the transportation of goods whose demand largely increased with Covid-19. Although with the

pandemic, no one saw this coming and initially thought that it would impact to the extent it now has on a global scale, the case companies have managed the disruption and minimized sequent consequences. Among the case companies it is found that flexibility has increased organizationally and adaption towards different scenarios during the pandemic which Sodhi and Tang (2012) emphasizes upon facilitates the organizational recovery from any risks occurred.

Along with flexibility it is emphasized among the companies that agile processes are fundamental in this situation and thereby generate flexibility towards the customers. Choi et al. (2016) discuss upon that organizations should ensure that their logistics and supply chain processes are agile in order to manage disruptive events. Although there were no explicit set strategies in how the organizations should handle a pandemic, the flexibility and adaptability has generated strategic operations for the situations among the companies to make the situation work for now and serve their customers service needs.

For global logistic providers, it seems more suitable to maintain flexibility towards risks rather than implementing a redundancy approach, which is the alternative to flexibility (Chopra & Sodhi, 2004; Talluri et al., 2013). Since this study concerns the service provided by GLPs within global supply chains and not GLPs potential internal production or sourcing of goods such as vehicles or containers, an approach of flexibility rather concerns the ability to respond to fluctuations in demand of various goods by ensuring that the logistic services may be provided for a wider range of goods and markets.

We argue that the redundancy approach in the theoretical framework by Chopra and Sodhi (2004) and Rice and Caniato (2003), is more relevant for producers as it rather concerns keeping redundant suppliers or inventory, whereas for GLPs the focus is upon the transport and logistics services they provide. It is emphasized by the respondents that the diversification of markets, services and for what goods the services can be provided, is an approach both towards minimizing the reliance upon certain customers and to manage disruptions. The strategy to enable quick diversifications within the transport and logistics operations thus illustrate a high emphasis upon the flexibility approach for GLPs.

### **5.2.1.3 Communication during a disruption**

The empirical findings illustrate that during the pandemic, both internal and external communication has proved to be a critical organizational factor. In beginning of the pandemic, it arose as a challenge in terms of how to communicate internally when most of the work force

is working from home, and obstacles has been overcome and adaptations has occurred to make the situation work very well as of now.

Larsson (2014) accentuates that communication serves as a fundamental basis for organizations to function for individuals and the organizations, both in a formal and informal context. Concerning the pandemic, communication has been brought up as challenging by the respondents, by instead of physical distribution of information (i.e., physical meetings), the majority occurs over digital solutions (i.e., teams, email, phone calls). The individual knowledge sharing has proved difficult in the sense of making sure that everyone that should have the information receives it, as well as the loss of knowledge through overhearing that would occur at the office location prior to the pandemic. Not only is the information and knowledge sharing a loss among the individuals, as well a large social aspect of the workplace has been limited due to the solely digital interaction.

Communication between employees have been described by the case companies to not occur as naturally when working from home as when being at the office location prior to the pandemic. Among the case companies the management transmits most of the information through digital meetings on a weekly basis, which we argue to be the most prominent formal communication held among the case companies during the pandemic. Kraut et al. (1990) identify the formal communication to be the most prominent form of communication with set meetings by management to transmit information within the organization.

Communication internally has thus proved to be a fundamental factor in informing and updating the employees about the ongoing situation. In addition, the external communication with customers has been somewhat limited among the case companies. Although the majority of the companies emphasized that the contact with existing customers has improved to a large extent and now occurs on a more frequent basis thanks to digital communication tools, the procurement of new customers has been difficult over the matter that meeting face-to-face serves as a fundamental basis of new relationship building.

The use of digital communication was implemented within the companies prior to the pandemic due to the digitalization of societies, but the pandemic brought challenges since it forced the organizations to solely rely upon digital communication. However, despite these initial challenges that along with the continuance of the pandemic to a large extent have been overcome, the organizational quick adaptation to working from home has increased the organizations' digital capabilities. In the beginning of the pandemic, Sforza and Steiniger

(2020) emphasized upon how these capabilities, will partly determine the *teleworkability* of organizations and that this in turn will determine the survival of organizations during Covid-19. From the empirical findings, it is evident that the increased teleworkability has enabled the continuance of the organizations while minimizing the spread Covid-19.

### **5.2.2 Measures Against Disruptions**

The measures set organizationally against disruptive events and other risks have proved fundamental for the handling of the pandemic. Although the organizations had no prior developed strategy to manage a pandemic in particular, due to flexibility and adaption, the organizations were able to develop measures and adjust according to them. From the empirical findings it is evident that all the case companies had to implement measures towards the disruption and the most prominent impact upon the operations was a switch in markets and the effects on the international business environment and global supply chains from the initial stop in Chinese production, which caused a large drop in volumes globally at the start of the pandemic. Condon et al. (2020) predicted at an early stage of the pandemic the effects and how those will vary among logistics suppliers depends on what goods they transport and through what routes. From the empirical findings, it is evident that the prediction of Condon et al. (2020) has come true, since although all case companies have been affected to some extent, the nature of the impact on the companies vary depending on what services they offer.

The effect of the change in markets and heavy pressure upon deliveries generated a positive impact upon the companies providing air freight services, since goods that prior to the pandemic were transported on passenger planes, have during the pandemic been booked through air freight service providers. The diversification of services proved beneficial by the increased demand for air freight services, where Company 10 recently prior to the pandemic had opened an air freight terminal being highly beneficial for the business and its survival during the pandemic. Diversification of services was touched upon by several of the respondents in terms of covering larger spans in the supply chain, generating a greater span across supply chains. What can be summarized from the empirical findings is that the case companies had to diversify due to the rapid change in markets, with a huge volume increase and priority transport upon health supplies and protective gear for the health industry.

The switch in markets have required flexibility within the organizations where the significant increase in goods in e-commerce did put a higher pressure upon the B2C segments in Company

6, where the respondent emphasized that the daily volumes experienced now was something that prior to the pandemic was only experienced once a year for Black Friday. Although the increase in e-commerce was evident prior to the pandemic, the rapid increase due to the pandemic was not expected, which generated a high pressure upon the logistics and transport services related to e-commerce. A large contributing finding from the empirical findings is that the logistics and transport sector is pressured and the concept of transports and shipping being free of charge is brought up by several of the companies, where it is underpinned that the service carried out does come at a certain cost. Dicken (2015) emphasizes upon the fact that the logistics processes are perhaps not always valued but rather just expected to function. This matter was discussed by Company 10 who underpinned upon the fact that they can charge a higher price since the pandemic has illustrated the importance of the valuable service that is carried out, and thereof the argument of the service cost is strongly relevant.

With the implemented measures, the case companies have during the disruption managed to minimize the impact on the operational level. By employing quick flexibility in response to the initial impact upon the operational levels, the companies have almost returned to operational levels prior to the pandemic. A successfully implemented supply chain risk management should according to Sodhi and Tang (2012) infer that organizations can maintain a basic operational level during disruptions. It is evident from the empirical findings that the implemented measures during the pandemic have enabled the case companies to do so, and for some the operational level has not only been maintain on a basic level but returned to the pre-Covid-19 levels. However, we must acknowledge that the implemented measures are not the sole contributing factor for the operational performance as for some of the case companies, the particular goods market they operate within has not been affected by Covid-19. For other, with already diversified operations, the increase in certain segments such as e-commerce has to some degree offset the larger impacts to other segments.

### **5.2.3 Future Risk Management**

The empirical findings demonstrate that the Covid-19 pandemic has affected global logistic providers to varying extent, however as the disruption is still ongoing there are no final evaluation reached. It is emphasized among the case companies that they have adapted to the disruptive situation caused by Covid-19 by implementing measures such as working from home and through a diversification of service offering.

On an organizational and individual level, the largest impact of Covid-19 has been the shift to remote work. Although posing certain challenges regarding communication and information sharing in the beginning, the remote work is emphasized to now function so well that most respondents predicted a combination of working from the office and working from home after the pandemic. The use of digital meetings is assumed to remain after the pandemic, for efficiency reasons. Further, any “unnecessary” traveling will be replaced by digital meetings while meetings that require physical presence, such as important customer meetings will remain, although to a smaller extent than prior the pandemic. Although, remote work has proved to enable a higher efficiency for individuals within the organizations, concerns about decreased social interaction have been raised, as the communication serving the social factor, which is emphasized by Larsson (2014) to be an important factor of organizational communication. This has caused an uncertainty among the case companies for how long the remote work will remain well-functioning. For the future of risk management, there is an emphasis upon maintaining a higher flexibility in terms of allowing for split time of working at the office and working from home, thus ensuring proper means of communication among individuals. On the operational level, diversification of services offered has been brought as a lesson learned among the global logistic providers, where there is again a high emphasis upon flexibility but in terms of being able to respond to market changes by adapting services and for what goods the services can be provided.

A final evaluation of the managing of Covid-19 remains to be done, however some case companies stated that documentation of measures and implemented strategies regarding the handling of the situation is recorded for the later evaluation of the pandemic. So far, with the impacts of Covid-19 and implemented risk management strategies in response to Covid-19, global logistic providers must evaluate what business segments and markets that have been affected more and which have been affected less, where the gathering of findings from an evaluation after the pandemic can be accounted for in the future risk management strategies of organizations.

## 6 Conclusion

*This last chapter presents the main results of our study and answer to the research question, which lead up to the concluding remarks of the study. Further, we outline the theoretical and practical contributions of this study. Lastly, our recommendations for future research are presented.*

This study has sought to provide a deeper understanding of how risk management processes and practices are implemented within global logistic providers that participates within global supply chains. By studying these previously implemented processes and practices, we can further study how risk management strategies have been adapted to manage the impacts of the Covid-19 pandemic, we have been able to examine supply chain risk management during a global disruption. The aim of this study is to answer the research question of “*How do global logistic providers that participate in global supply chains, manage and adapt their risk management strategies during a global disruption?*”. The development of the research question was based upon an identified research gap within the supply chain risk management literature of how organizations manage an *ongoing* disruption, since most of the existing literature provides a pre- or post-perspective to disruptive events. To answer the research question, we first reviewed existing literature on to get acquainted with the supply chain risk management subject. In order to attain the desired depth of the study, we conducted a multiple case study on eleven global logistic providers within the Gothenburg region with an active role within global supply chains. The empirical findings were then analyzed and contrasted to the applied theoretical framework to identify parallels and synthesize additional findings that adds to the existing literature.

From the conducted analysis we can draw upon several main findings concerning risk management within the case companies included in this study. Firstly, it is evident that regardless of managerial level and organizational position, risk management responsibilities permeate work of individuals within the case companies to such an extent that it is not always perceived as risk management. This is shown by the fact that organizational risks have been described to be identified, assessed, and managed on a regular basis among individuals throughout the organizations. Thus, the responsibility of risk management does in general not accrue to only one or a few managers. However, this study demonstrates that although the processes of risk management are part of each individual’s responsibility, some of the global logistic providers seem to lack organizationally unified and clearly stated practices of *how* risks

should be identified, assessed, and managed. This potential lack is illustrated through the unawareness of such practices among the individuals. The conclusion is accentuated by the fact that individuals can specify their individual risk management responsibility and provide an organizational perspective concerning what risks are usually identified and prioritized but not clearly describe how the processes of identification and assessment are practiced throughout the organization. Although risk management practices seem to not be clearly established organizationally within all global logistic providers, the analysis show that the risk management processes of identification, assessment and managing nevertheless are functioning for all. This conclusion is based upon findings demonstrating that individuals within these organizations seem to overcome the lack of organizationally unified practices by implementing well-functioning risk management practices in their own work, such as a SWOT analysis. The potential lack of organizationally unified risk management practices within organizations would according to the existing theory infer a malfunctioning organizational supply chain risk management (Waters, 2007; Basu & Wright, 2017, Sodhi & Tang, 2012; Hopkin, 2017). However, this study provides a more nuanced perspective to that theoretical assumptions as our findings show how organizationally unified risk management practices are not the sole determinant of a successfully implemented supply chain risk management.

Secondly, we can establish that the case companies who have proved most resilient towards the disruption of Covid-19 have done so by holding operational flexibility. It is evident that the pandemic has caused varying impacts on the different case companies and that these impacts largely correlate with what types of services a company offers and for what types of goods. Global logistic providers that launched quick responses to the disruption by either extending or shifting their services offering or adapted their logistic activities to account for a larger variety of goods, have successfully minimized or even completely mitigated risk consequences on an operational level. For global logistic providers that already prior to the pandemic offered a wider range of services and for various types of goods, the importance of flexibility rather concerns quick organizational adaptations to manage change in volumes across segments. Thus, this study demonstrates that the flexibility approach serves as a fundamental strategy for global logistic providers in managing risks during a disruptive event. This conclusion aligns with and strengthens the emphasis upon flexibility as an efficient risk mitigation strategy within the supply chain risk management literature (Chopra & Sodhi, 2004; Rice & Caniato, 2003; Sodhi & Tang, 2012; Choi et al. 2016).

Thirdly, this study demonstrates that the global logistic providers' operational levels have, if not to a full extent, at least almost returned to the levels prior to the pandemic. At the time of this study, the pandemic has been ongoing for about a year, so the operational recovery of the global logistic providers is, of course, partially due to the overall recovery of international business and global supply chains. Nonetheless, this study displays that the risk management strategies and risk responses implemented during a disruption determine how quickly global logistic providers can recover. The risk response is thus shown to be of significant importance to mitigate any subsequent consequences of the pandemic, which aligns with arguments by Sodhi and Tang (2012) and Waters (2007).

### **6.1 Theoretical Contribution**

This study examines the supply chain risk management processes and practices implemented by global logistic providers and how strategies have been adapted during the ongoing disruption of Covid-19. By taking the perspective of global logistic providers and by studying their risk management during a disruption, we have been able to add to the existing theory on supply chain risk management.

Within the existing theory, disruptions are described as rare and unforeseen external events that cause large implications for organizations participating in global supply chains (Sodhi & Tang, 2012; Waters, 2007; Basu & Wright, 2017; Yilmaz & Flouris, 2017; Talluri et al., 2013), and the emphasis of risk management processes and practices mainly concerns a pre- or post-perspective. With the ongoing Covid-19 pandemic, which is a new and global disruption, there is an opportunity to study organizations' implemented and adapted risk management strategies *during* a disruption. By taking this perspective, this study adds to existing literature by examining how organizations initially was and continue to be affected by the disruption and how they have and continued to manage subsequent risk consequences thereof. This provides a unique opportunity to elaborate on the current implementation of risk management strategies as opposed to evaluating the outcome of such posteriori.

Further, this study adds to existing literature by examining supply chain risk management during a disruption from the viewpoint of global logistics providers, who serves a fundamental role within global supply chains. However, their importance is somewhat overlooked, which is emphasized upon by some of the case companies who problematized the concept of "free shipping". In addition, Dicken (2015) states that the services provided by transport and logistics

suppliers are by other actors within supply chains sometimes just expected to function and he thus argue that it is an industry that needs further acknowledgement. We argue that this tendency is also present within the existing theory on supply chain risk management, where many researchers, such as Hopkin (2017), Sodhi & Tang (2012) and Waters (2007), among others, focus mainly is upon the perspective of producers and suppliers. With this study, it has become evident that stated risk management processes such as identification, assessment, and mitigation, and practices such as prioritization of risk through estimated likelihood and impact, which are accentuated within the existing literature, are implemented within global logistics providers as well. However, certain highlighted management strategies such as the flexibility or redundancy approach are within the literature described from the perspective of producers and suppliers. Although we earlier concluded the flexibility approach to be the best strategy for global logistic providers to increase resiliency towards disruptions, we argue that there is a need for a wider supply chain risk management perspective that includes all types of participating actors within the literature to account for broader interpretation and implementation of such strategies.

## **6.2 Managerial Implications and Recommendations**

With this study, we wish to emphasize upon some managerial implications regarding the implementation of risk management processes and practices, as well as risk management strategies to manage disruptions, that the management of global logistic providers should take into consideration.

Firstly, this study shows that the flexibility approach as a risk management strategy serves as a prominent foundation to manage risks during a disruptive event. Regarding operational activities, managers should ensure that flexibility is attained and maintained to enable quick adjustments or extension of the logistics activities offered in response to rapid and unforeseen disruptions. However, the benefits of employing flexibility do not only accrue to disruptions but will enable organizations to better manage frequent organizational risks as well. Global logistic providers that are already diversified by offering a broad range of logistic activities for many markets should instead focus upon keeping organizational flexibility. Such organizational flexibility will generate a greater preparedness and quicker adjustments in times of rapid changes in volumes across segments and infer temporary transfers of employees from business segments experiencing volume losses to support business segments experiencing increase in volumes.

Secondly, as demonstrated, the implemented risk management processes within the global logistic providers are functioning. However, due to the seemingly lack of organizationally unified risk management practices within some of the companies, we wish to emphasize upon the possibility for managers to seek a higher organizational consistency concerning what practices that should be implemented throughout the organizations. This since unified practices can serve a high importance in keeping track of and recognize the processes and measures implemented within organizations. If in fact such organizational risk management practices are already established, these must be distinctly communicated throughout the organization to ensure that all individuals are aware of and align with stated practices.

### **6.3 Future Research**

This study has discussed how the supply chain risk management literature mainly concerns the producer and supplier perspective within global supply chains, where this study adds to existing literature by taking the viewpoint of global logistic providers. For further research one could further examine this viewpoint by studying other influencing factors upon why this industry has previously been overlooked and merely expected to function, and one could seek upon the importance of activities that the transport and logistics services provides.

This study has investigated the implementation of risk management measures *during* a disruption and demonstrated the importance of such in addition to existing literature with the perspective of pre- and post-disruption. For further research one could seek to further examine the performance of risk management measures implemented during a disruptive event by comparing the findings of this study to final evaluations of the impact of Covid-19, that could be studied in a post-perspective. Since Covid-19 is a completely new disruption, such research could add to existing literature by providing more detailed suggestions on how organizations within global supply chains can better prepare for and manage ongoing disruptions.

This study has been presented from the context of global logistics providers based in Gothenburg with participation in global supply chains. Hence, the viewpoint of the participating case companies could be further expanded by going beyond the Gothenburg context of the study one could seek a further international perspective of including respondents in the same organizations but with another international locations. Elsewise, the opportunity in seeking additional viewpoints within the same organizations could be through interviewing additional assigned roles and gain a further depth to provide a more nuance internal perspective.

The additional question asked in the interview guide (Appendix 2) regarding the future of GLPs and global perspectives of environmental aspects could be further examined from a risk management perspective concerning how GLPs should adapt to future changes concerning sustainability or apparent trends in international trade.

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# Appendix

## Appendix 1 Email request for participation

Dear receiver,

Our names are Vera Stafström & Johanna Nevalainen, and we are students at the Master of Science in International Business & Trade at the School of Business, Economic & Law in Gothenburg. During this spring we are writing our thesis in Supply Chain Risk Management with the research focus upon how businesses in global supply chains are handling the effects of a global disruptive event, in this case being the ongoing Covid-19 pandemic. Our keywords are: *Supply Chain Risk Management, Global Disruption, Covid-19, Transport & Logistics Sector, Global Logistics Provider.*

The organizations of interest for our study are within the transport- and logistics sector which is an important part of the global supply chains, and has been largely impacted by the Covid-19 pandemic. When countries have been closing their borders and implemented national restrictions this has affected all international trade, which has generated our research of interest of how organizations are handling and adapting to these drastic measures and situations.

We are contacting you with a request to participate in our study through an interview, since we see your organization as interesting and your operative activities are within the scope of companies we wish to include in our study. We wish to interview one individual with good insight into your global operations, and preferably as well within the risk management processes.

If you as the receiver of this request believe that you are not the right candidate for this interview, we are thankful if you could forward this request to a more appropriate individual, alternatively provide us with a name and contact details.

We plan to conduct our interviews during March 2021 and are flexible in terms of date and time.

Thank you in advance.

Kind Regards,

Picture of Vera	Picture of Johanna
-----------------	--------------------

**Vera Stafström**  
abc@student.gu.se

**Johanna Nevalainen**  
abc@student.gu.se

## Appendix 2 Interview questionnaire

### General information about the company

1. What is your organization's international presence and where is the different functions located?
2. What modes of transport and services within the logistics chain do your organization offer? (Modes of transport, warehousing, Supply Chain Management)
3. Do you know if your organization is using the ISO 31000:2018 Risk Management guidelines? Are you aware that this industrial standard does exist?

### Covid-19 Pandemic

4. What impact has the Covid-19 pandemic had on your individual day-to-day work?
5. What impact has the Covid-19 pandemic had on an organizational level, in terms of work and communication across (international) offices?
6. What impact has the Covid-19 pandemic had on an operational level and how has the business itself been affected?

### Risk management

7. Can you describe how you work with risk management in general and how involved you are in the company's risk management processes?
8. Who is responsible for the risk management? Is it team- or individual-based decision-making in the risk management?
9. In general, what does the risk management process look like? Do you use any specific model? *E.g., identification, assessment, mitigation, monitoring*  
- Why have your organization chosen to do it that way?
10. What do you usually consider a risk and what types of risks do you identify?
11. How do you prioritize different risks on an operational level? *Short-term or long-term risk, economic, non-economic etc.*
12. Describe what types of risks you always consider within your organization? How alarming does the risk need to be for you to take caution?

*As of today, we have dealt with the Covid-19 pandemic for little over a year, which has resulted in a quite unique situation that allows us to study risk management during an ongoing disruption. The following questions are therefore related to how your risk management strategies was designed prior to the pandemic, how they have developed during the pandemic and your thoughts on the future focus of risk management strategies.*

13. With the Covid-19 pandemic in mind, which is an unforeseen, global non-economic disruption, were there any already established, enough mitigation strategies within your organization's risk management processes, to manage the Covid-19?
14. The pandemic has been ongoing for more than a year now, how have you dealt with the everchanging uncertainties?

15. Have your organization's managed to establish new risk management strategies to handle similar events in the future?
16. In what activities/operations were the already established risk management strategies enough to deal with the effects of the Covid-19 pandemic?
17. In comparison to other recent disruptions to trade, for example Brexit, has the Covid-19 pandemic affected your operations to a lesser or larger extent?
18. From an individual perspective, how would you like to apply risk management in the future?
19. From an organizational perspective, what can be learnt from this pandemic to be brought to future risk management strategies?

*Extra question: In recent years, there has been a trend of increased awareness among consumers, demanding multinational companies within supply chains to keep proper CSR policies and sustainability focus. There is also an increased trend of buying locally produced goods. Further, Trump in the USA and Brexit pose as examples of increased protectionism among world leading economies. Covid-19 have exposed the vulnerabilities of supply chains which on one hand might be in favour for the trend of home-shoring and de-globalization. On the other hand, E-commerce have displayed a major increase during 2020, which cause a demand for logistics and transportation of goods.*

What are your thoughts about these trends? Do you think that Covid-19 has accelerated the possible trend of home-shoring and de-globalization or will globalization continue to increase? Based on this, how will the logistics and transport sector develop in the coming five years?