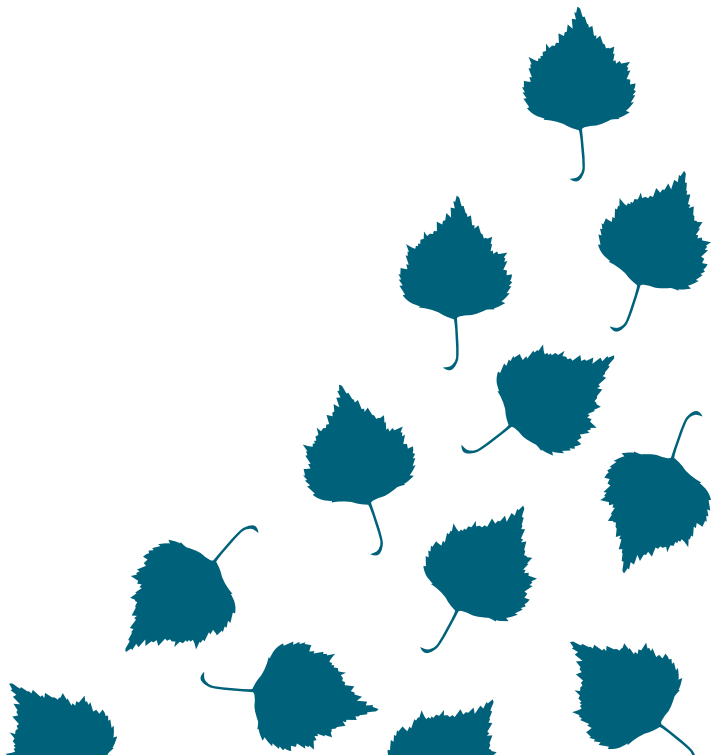
EKONOMI OCH SAMHÄLLE
ECONOMICS AND SOCIETY

HANKEN

MANAGING SUPPLIER SUSTAINABILITY RISK

HANNA-RIITTA HARILAINEN



Ekonomi och samhälle
Economics and Society

Skrifter utgivna vid Svenska handelshögskolan
Publications of the Hanken School of Economics

Nr 266

Hanna-Riitta Harilainen

Managing Supplier Sustainability Risk

Helsinki 2014

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Key words: Supply Chain, Sustainability, Risk Management, Sourcing

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Hanken School of Economics
ISBN 978-952-232-220-3 (printed)
ISBN 978-952-232-221-0 (PDF)
ISSN-L 0424-7256
ISSN 0424-7256 (printed)
ISSN 2242-699X (PDF)

Edita Prima Ltd, Helsinki 2014

ACKNOWLEDGEMENTS

> There is no value in life except what you choose to place upon it and no happiness in any place except what you bring to it yourself. – Henry David Thoreau

The process of writing this thesis took a long time and changed me in many ways. As a novice researcher, I followed leads that ended up being discouraging and led me questioning my motivation for following through. This thesis would not have seen daylight without me finally finding a methodology that suits my perspective of life. In choosing it, I was able to show what I believed in. I am also indebted to the many who let me freely follow my own happiness.

My deepest appreciation goes to my thesis supervisor Prof. Gyöngyi Kovács, whose support and insightful comments were invaluable during the course of my study. She taught me how to navigate in the academic seas of supply chain management and advised me to get out of my own shadow, to do what I needed to do. My sincere thanks goes also to Prof. Karen Spens for always trusting my research proposals and her unquestionable belief that I will make it one day.

I thank all my fellow Ph.D. students in Supply Chain Management and Corporate Geography who, over the years, commented on my work in the seminars and gave me invaluable ideas. Special thanks goes to Maria Ehrnström-Fuentes for great talks and Ira Haavisto for her positive outlook on life. Thanks also to Dr. Daniel Ekwall for giving me the inspiration to explore supply chain risk management and to Prof. Árni Halldórsson for his wise words in the manuscript seminar. I thank my pre-examiners, Dr. Anu Bask and Prof. Dr. Constantin Blome, for valuable academic insights on the manuscript.

I would like to express my gratitude to the Marcus Wallenberg Foundation, The Foundation for Economic Education (Liikesivistysrahasto), the Jenny and Antti Wihuri Foundation, and the Funds at Hanken for their financial support for this project.

This journey would not have been possible without the support from my whole family. Special thanks goes to my dear spouse, Ari, for the philosophical discussions over the project and to my children, Kaisla and Kaius, for the inspiration to play a little. And thank you, Universe, for giving me this unique opportunity to grow and learn about myself.

This thesis is dedicated to my father, Taavi Harilainen, who by being so proud of his daughter, unknowingly encouraged me to finalise the thesis when I was about to quit.

Espoo, March 2014

Hanna-Riitta Harilainen

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1 INTRODUCTION

A product is only as sustainable as the practices of all the companies involved in manufacturing it are. Supply chains are complex, often very long and not very transparent. Environmental and social conduct of the supply chain members as a whole affects how the product is perceived by the consumers as well as the efficiency of the supply chain in question (e.g. Pagell et al. 2010:57; Carter and Easton 2011:46; Carter and Rogers 2008:360; Foerstl et al. 2010:118). After decades of outsourcing trends and searching for competitive advantage through lower costs, companies are beginning to see the various risks associated with supply chains, which often reach developing countries (e.g. Manuj and Mentzer 2008b:192). Various taxonomies of these risks have been presented and categorized into, for example, supply, demand, operational and security risks (Manuj and Mentzer 2008b:192), or they have been classified more precisely into supply, demand, process and control risks & environmental and sustainability risks (Christopher et al. 2011:67).

Recent events in the Bangladesh textile industry sparked widespread media attention (McClearn 2013:48). The Guardian (Butler et al. 2013) reported seven killed and over 50 injured in a fire at a factory making fabric used by global brands such as H&M, Asda, Marks & Spencer and Next. This happened less than six months after a collapse with more than 1,100 casualties of another textile factory in Bangladesh. The brands have been held responsible for their suppliers' neglect of social responsibility, and the brands' reputation in the eyes of consumers is at stake. This is all taking place despite the industry's supplier sustainability development efforts (PM Network 2013:14) in the region.

Reputational risk serves as one of the key drivers of investments in improved sustainability within a single company. The same reputational risks are apparent in the supply chain context. If the suppliers do not follow the laws, regulations and conventions, the reputation of the buyer company is also at stake, affecting the demand for their products. The topic has become increasingly important with the trend of supply chains becoming longer and often reaching developing regions, while various industries experience an increased pressure to implement sustainability programs across the supply chain. The media and consumer groups increasingly pay attention to the brandname companies' suppliers and their misconduct events, creating pressure for such actions. From a risk perspective, reputational risk is the risk category most readily thought of when considering the company's own and supplier's sustainability risk (Minor and Morgan 2011:40; Scandizzo 2011:41; Unerman 2008:362). However, in the sustainable supply chain management context, the reputational risk is not the only risk to consider.

The environmental and social performance of another supply chain member can cause significant risks other than the demand-side reputational risks. The supply of goods and services needed in the production of a product can be at risk even if the demand side is not immediately affected. When a supplier is irresponsible in its operations, it jeopardizes not only its own and its customers' reputation but also the smooth flow of supplies. Examples of this are strikes, the losing of a license to operate due to polluting the environment, and line stops caused by breaking the supplier requirements of the customer. These incidents are related to the environmental and social behaviour of the supplier. While the incidents can be devastating in a social or an environmental sense, they may never reach the media or consumers' consciousness. In cases where there is media attention, the connection may not be made to the buying company at all.

However, such incidents pose a significant threat to supply. Because of the fire at H&M's Bangladeshi textile supplier's factory, in addition to the human suffering and loss of reputation, H&M cannot bring their newest T-shirts to the consumer market until they find the capacity at another supplier to supply the needed fabric. The aftermath of the incident takes time and creates additional costs for H&M.

Together, the demand- and supply-side risks for the buying organization related to upstream supply chain members' environmental and social performance form *supplier sustainability risk*. When managing these risks, supply chain management strategies applied by the buyer company become important in addition to a potential sustainability agenda directed at the supply base. If there is an incident in the supply base causing a stop in the flow of materials, the alternatives to supply have to be readily available. This requires incorporating the environmental and social topics into the overall risk management strategy and managing them in parallel in different parts of the organizations. Sourcing plays a key role in supply chain risk management due to its unique position, ensured by daily contact with the suppliers. How well the supplier sustainability risks are managed is dependent on sourcing's actions and proactivity towards the supply base. The current literature on sustainable supply chain management, sustainability risk and supply chain risk management does not offer a clear view on what factors influence the level of risk in the supply chain and why some companies are more proactive than others in managing these risks or properly acknowledge the supply risks derived from sustainability issues.

The focus of the thesis is on the intra- and inter-organizational factors that managers assess to estimate the amount of risk, the proactive or reactive management of it, and the focus on either supply or reputational risk at the company level. This thesis uses grounded theory methodology (Glaser and Strauss 1967) with the Glaserian approach (Glaser 1978). Grounded theory was chosen because supplier sustainability risk is emerging as a research area, and the methodology allows for valuable insights (Denk et al. 2002; Manuj and Menzer 2008b; Randal and Mello 2012). Corporate reports, videos, and in-depth interviews with the managers of six multinational companies – ranging from doing business in metals and services to packaging and information technology – comprise the data. The outcome of the thesis is a theoretical framework grounded on the gathered data. The logic of grounded theory methodology determines the way the research is presented in this monograph. The introductory chapter begins with an outline of the research aim and the research questions. The grounded theory-based research approach is introduced as well as the contributions of the thesis. The research is then positioned briefly within the supply chain risk management, sustainability risk and sustainable supply chain management literature. The delimitations and contributions of the study are also discussed. Finally, the structure of the thesis is explained in detail.

1.1. Research Aim and Research Questions

The broad topic of this thesis is sustainable supply chain management (Carter and Easton 2011:46; Christopher et al. 2011:67; Sarkis 2012:202), which is defined by Carter and Rogers (2008:368) as "the strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its supply chains". The broad topic was derived from my interest in the field as a sourcing professional and supplier auditor specialized in the environment and ethics. At the beginning of the

research, before entering the field, I purposefully did not identify a predetermined research problem in order to minimize preconceptions and keep an open mind towards emerging conceptualizations. Sustainable supply chain management is a rather new area of study, so there are still various unexplored academic areas. To me, it was important to understand what the practitioners – the managers involved in sustainable supply chain management – perceive as problematic or challenging in the area and bring a contribution to both academic literature and practitioners. The choice of the context employed was partially that of convenience as I already had experience with the supply chains of multinational companies as well as with the topic of sustainability, and I had access to a number of companies that could potentially provide rich data. However, the context employed also fit well with the topic of sustainable supply chain management that I was about to study.

Over the years working with sustainable supply chain management, I observed frustration over the implementation of the lofty goals of sustainability in the supply chains of companies. The topic was often included in managers' official "speeches" and seemed to gain importance in various organizations, but what intrigued me was the overall slowness of development in this area. The media were still full of reports of unfortunate incidents in the supply chains of brandname companies, and the guidelines reputable consultants gave to companies on managing sustainability-related issues in the supply chain seemed old and superficial. According to my observations, the practitioners in the field lacked an understanding of what drove development and what was slowing it down. Practitioners needed frameworks to analyse theirs specific situation and understand what in their organizations was needed to drive sustainability goals in their supply chains.

This study utilizes an interpretive, inductive research approach in order to capture the social and behavioural side of sustainable supply chain management. In the initial phases of the research, the objective was determined by identifying a relevant problem for the practitioners. Based on this early field work, the aim evolved into an exploration of supplier sustainability risk identified by the core category of "risk of suppliers' environmental and social performance". The concept of "supplier sustainability risk" was discovered later in the process but is used in the introductory chapter for clarity. In this research, the *supplier sustainability risk is defined as the demand- and supply-side risk to the buying organization related to suppliers' environmental and social performance*. The demand-side risk is referred to as the reputational risk, which is the component of risk that affects consumer behaviour through the image of the company. The supply-side risk is defined as the adverse impact to the supply of goods and services from the supply base. The overall aim of this research is to construct a framework for managing supplier sustainability risk. In this study, the perceptions of managers are used to relate the findings at the firm level. Therefore, the unit of analysis is an organization. In order to fulfil the above-stated overall aim, after identifying the problem, theoretical sampling and selective coding was employed to answer the following research questions:

1) What challenges are perceived in managing supplier sustainability risk?

2) How is the ownership of supplier sustainability risk distributed across an organization?

3) What explains the different approaches to risk management related to the sustainability of suppliers in manufacturing companies with global supply chains?

In question 1, the perceptions of managers in terms of supplier sustainability risk management are the key focus. This reveals the current state of understanding of these risks in organizations regarding the severity of the risk and the reach of the company upstream in the chain as well as any organizational factors affecting it.

Question 2 addresses the ownership of supply chain risk to understand where in the organization the responsibility of managing these risks lies versus where it belongs according to managers. This question aims to reveal whether "risk silos" exist in the organizations and in the collaboration between different parts of organizations to mitigate the risks.

Question 3 explores the drivers of the proactive or reactive approaches organizations have towards the sustainability of their supply chains. Some organizations are more active than others in introducing sustainability programs into the supply chains. Why is this so? What can the factors be explaining the variation?

The initial research questions, which were formulated after entering the field, provided direction for the theoretical sampling for further data analysis – in grounded theory terms, the core variables – which guided the inquiry from there forward. Significant observations outside the research questions were not omitted; on the contrary, they were welcomed.

1.2. Research Design

This research is designed on the methodological principles of grounded theory (Glaser and Strauss 1967), and more specifically, it adheres to the Glaserian grounded theory – a stream of grounded theory advanced by Barney Glaser after the initiation of the methodology (e.g. Glaser 1978; Glaser 1998). It takes an interpretive epistemological standpoint (Burrell and Morgan 1979) in which reality is seen as people's interpretations of situations and things, not as objective facts. The chosen methodology aims at creating a theory as an end product, not verifying a hypothesis.

Grounded theory is in principle an inductive method, meaning that the reasoning moves from specifics to broader generalizations and theory (e.g. Kovacs and Spens 2005:132). Theory is seen as rising from the data though systematic generation, providing a particular framework for the research as a whole: how it is conducted, what the aims are and how the findings are reported. Grounded theory is a qualitative methodology mainly using interviews as data (Goulding 2002:60) but also considers "all" to be data applicable for theory creation. Based on these assumptions, I designed this inductive study to explore the research questions stated above.

Grounded theory methodology was chosen as supplier sustainability risk is an emerging area both in the business world and in the literature, and the methodology allows for very valuable insight. Grounded theory is exceptionally well-suited to situations where there is no previous research conducted on the topic (e.g. Goulding 2002; Mello and Flint 2009:107). Moreover, the supply chain management literature has seen an interest in grounded theory research recently (Mello and Flint 2009:107; Randall and Mello 2012:863; Manuj and Pohlen 2012:784; Denk et al. 2012:742). Manuj and Menzer (2008b:194) see the ability to handle a complex phenomenon such as risk management as another advantage of grounded theory. This is due to the methodology's emphasis on the need for developing multiple concepts and identifying their linkages in order to capture the central phenomenon.

The companies studied were identified according to grounded theory principles via theoretical sampling. Theoretical sampling "is the process of data collection for generating theory whereby the analyst jointly collects, codes and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges" (Glaser 1978:36). Theoretical sampling should not be confused with "selective sampling", which refers to the calculated decision to sample a specific locale according to a preconceived but "reasonable" initial set of dimensions (Glaser 1978:37). At the beginning of the research, the sample decisions were left open, and the final set of companies was confirmed only after all codes were saturated; that is, no new information came up with further data collection. As Glaser and Strauss said in *The Discovery* (1967:61): "the sociologist trying to discover theory cannot state at the outset of his research how many groups he will sample during the entire study; he can only count up the groups at the end".

The study consists of three parts, Study 1 (Chapter 3), Study 2 (Chapter 4) and Study 3 (Section 6.3.). Study 1 describes entering the field, where the first company's (C1) primary and secondary data are presented. After entering the field, the core category to be studied was determined, and the research questions were formulated. Study 2 consists of analysis of the primary and secondary data of four different companies (C2–C5) adding to and finally saturating the categories discovered in Study 1. Finally, Study 3 describes a workshop for "member checking", or external review of the emerged theory, held after the framework had emerged and discusses how the framework was understood by practitioners.

The final sample (in studies 1 and 2) consists of five Finland-based multinational companies that are involved in manufacturing and whose supply chains reach to varying extents to developing economies (see Appendix 1). The global supply strategies of companies were important for the analysis, and specifically the presence of some form of low cost country sourcing (e.g. Beebe et al. 2009:26), in order to better reveal the issues in suppliers' environmental and social performance. It was considered important to choose Finnish companies with large enough operations to have hired a dedicated sustainability manager, which in turn tells about the company's dedication to environmental and social issues. Theoretical sampling followed the grounded theory methodology and the data collection informed sample selection along the process. The idea was not to find all fitting companies and then be able to make generalizations. During the theoretical sampling process, the position of the company in a supply chain became an important factor in the analysis. Two of the companies represented true consumer brands, two operate in the business-to-business realm and one of the brands is very visible to the consumer, but purchase decisions are made by industrial customers. The sixth company involved in the workshop of Study 3 was similar to the companies in studies 1 and 2 but was farthest away from the end-consumer in the supply chain.

The data were collected through company reports, videos and interviews (see Appendix 1 for the full list of data). The interviews formed the primary data, while reports and videos served as secondary data, giving important background information on the companies, supply chains and the environment and served as the backdrop against which the interviewed practitioners mirrored their perceptions (Figure 1). The secondary data also supported the formulation of the research problem as well as reflected a sense of urgency regarding the topic of supplier sustainability risk had in the studied companies. The company reports – the annual and sustainability reports – were collected from the public websites of the companies. Company reports and videos gave valuable background on the companies' operations, supply chains and values directing

the extent of sustainable practices. The interviews gave a deeper understanding of the problem areas practitioners experienced and how they, as managers, perceived the company's situation beyond what was publicly announced. As Goulding (2002:60) states, "by far the most common source of data used in grounded theory and qualitative research in general is interviews". The interviewees were managers responsible for mainly either supply chain management or sustainability or both. The selection was based on the assumption that "supply chain managers are in a particularly advantageous position to impact – positively or negatively – environmental and social performance, through for example supplier selection and supplier selection, modal and carrier selection, vehicle routing, location decisions, and packaging choices" (Carter and Easton 2011:47). Interviews were semi-structured and conducted in conversational style so that the perceptions of the managers could freely emerge and new concepts could enter the discussion instead of forcing the data into predetermined categories. Semi-structured in this context means a certain set of ideas being built up from previous interviews and analysis that were formulated as free-format questions during the interviews.

This research highlights managerial perceptions of supplier sustainability risk and is focused on the practitioners' perspectives on the topic, the findings of which are related to the company level. The secondary data's weakness in this respect is that they are created for the public. Their purpose is to support the public image of the company and bring facts to the media and investors, not to reveal the perceptions of managers. However, the vast secondary data (Appendix 1) used in this research have strengths. They reveal the sense of urgency that the companies involved in this study had for supplier sustainability risk and justify from their perspective the research problem. The primary data consist of six interviews with five different managers and a workshop with another two managers (Appendix 1). A larger number of interviews may have revealed the saturation of categories better. On the other hand, the workshop (Study 3) gave support to the framework as well as the concepts discovered.

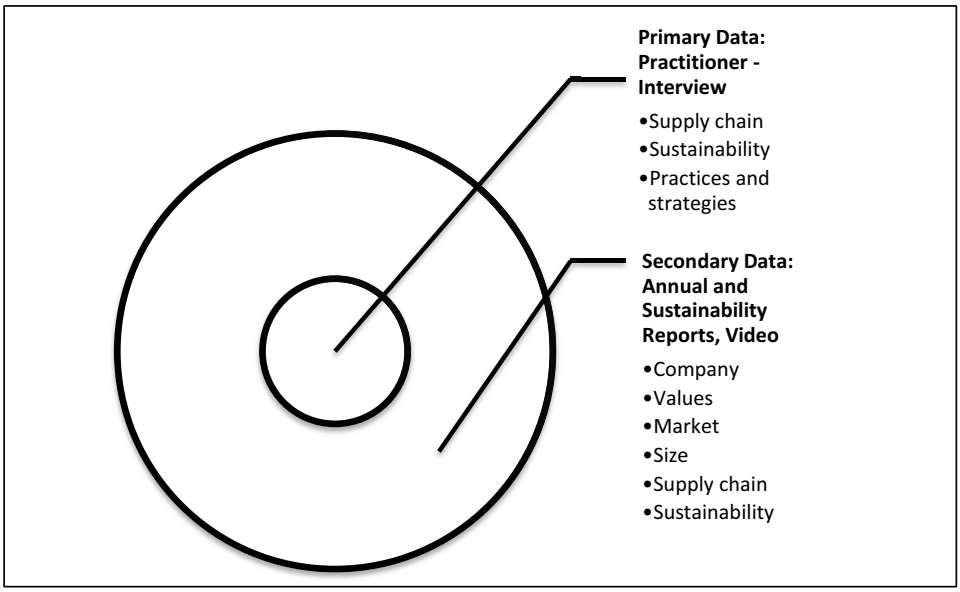

Figure 1 Data Sources

The set of ideas, or codes, dealt with in each company report or interview expanded or narrowed depending on the analysis via the grounded theory work, or theoretical sampling. The theoretical sampling on any code ceased only when it was saturated, elaborated and integrated into the emerging theory. The very first interviews were already conducted and company reports analysed before the aim of the research was formulated in order to establish "what is going on in the field" (Glaser 1998:125). The first interviews were conducted with the sourcing sustainability head of a company that considered itself as a pioneer in supplier sustainability matters and was also rewarded internationally for its sustainability efforts (C1SR). The interviews provided ideas about the problem area and helped to narrow down what is challenging about the environmental and social aspects of the supply chain.

The QSR-Nvivo10 (NVivo) data analysis tool was used in all analysis phases to code the data, write memos and, later on, to sort the memos for writing up the analysis. NVivo has been successfully utilized to facilitate the grounded theory approach as it is found to help in many of the key processes of grounded theory (Hutchison et al. 2010:283). The company reports were imported in PDF format, and the NCapture feature of NVivo was utilized to download YouTube videos. The recorded interviews were uploaded to NVivo and then loosely transcribed. All except the first two interviews (C1-Ii and C1-Iii) were recorded. In fact, Glaserian grounded theory methodology does not encourage the recording of interviews (Glaser 1998:107), but rather relies on one's notes and first impressions from the situation. As Holton (2010:25) states: ". . . selecting to use field notes enables the researcher to dispense with the meticulous and time-consuming efforts required to record and transcribe detailed interview data and mitigates being overwhelmed by its descriptive detail . . . field notes enable the grounded theory researcher to capture the essence of the participant's main concern and how that concern is resolved without the burden of laborious transcribing followed by the tedium of reading through and coding lengthy transcripts". However, listening to the tapes right after the interview helped me to distinguish my own thoughts from those of the interviewees. Coding categories, or "nodes" in NVivo, were kept open for variation for as long as possible to prevent forcing data into certain categories too early in the analysis.

With software tools, there is a risk of treating data too clinically. As Suddaby (2006:638) states, "The researcher is considered to be an active element of the research process, and the act of research has a creative component that cannot be delegated to an algorithm. Qualitative software programs can be useful in organizing and coding data, but they are no substitute for the interpretation of data. . . . It is the on-going interaction between researcher and data that generates the fundament of successful grounded research". The attempt in this research has been to be open to new and unexpected interpretations of the data, and the software program NVivo was used only for organizing and coding the data as well as writing the memos.

Grounded theory gives clear guidance on setting up the research project, and I followed those guidelines as much as possible during the research. The coding of the data, the constant comparison of incidents, theoretical sampling and the sorting of memos were often done simultaneously. The interview data were coded in NVivo right after each interview in an open coding fashion, then later on with theoretical codes. Open coding is the process of breaking down the data into distinct units of meaning (Goulding 2002:76) and is at the core of grounded theory methodology. In addition, "memoing", or taking memos, is an important part of grounded theory methodology. It is done at all times to organize thoughts and theorize on the concepts and their relationships. The thesis chapters 3–6 are mainly written based on sorted memos that were created

during the research process out of the raw data while constantly comparing the incidents. Analysis includes excerpts from the interviews as examples of behaviour. Higher level conceptualizations follow the cumulative understanding of the memos.

Literature was included in the analysis after the theory had already emerged from the data. A focused literature search was conducted in academic databases with key concepts from the framework. The emergent theory was then set side by side with the relevant literature and integrated from the suitable parts (Section 5.2.). Glaser (1998:67) states grounded theory's very strong dicta: "a) do not do a literature review in the substantive area and related areas where the research is done and b) when the grounded theory is nearly completed during sorting and writing up, then the literature search in the substantive area can be accomplished and woven into the theory as more data for constant comparison". This is to keep the analysis open for the discovery of concepts and interpretations from the data – not from previous literature. Although the literature had an impact on the discovered theory in the later stage of the process (Chapter 5), the literature is further discussed (in Section 6.2.) to position the emerged theory as a whole. Chapter 2 further discusses these grounded theory principles.

1.3. Scope and Delimitations

As stated above, the problem area was determined based on the initial data collection (Study 1, Chapter 3) to follow the inductive grounded theory principles. The initial analysis of C1 determined where to go and what to look for next in data collection. The scope for this research was thus determined by the problem area found in the field and voiced by the practitioners rather than extracted from the literature. The initial data suggested various alternative core variables to be taken in as a focus of the research. The broad topic of sustainable supply chain management is an emerging topic in the corporate world also, and there is still significant grey area to be sorted out in the managerial understanding of the topic. The risk perspective was just one of the interesting topics during the initial data gathering but was apparently the most burning challenge at the time of the interview in the company in question (C1). As the first company in the data set was considered a pioneer in the field, and ranked high in various sustainability indexes over subsequent years (C1AR, C1SR, C1YT), the aspect was assumed to be an emerging challenge in other companies as well, but naturally, that was left open for further data gathering and analysis.

The core variable, "risk of supplier's environmental and ethical performance" (later supplier sustainability risk) was discovered after entering the field, and the study was delimited to exploring the related variables only from that point forward. The unit of analysis is a company and this study is limited to companies with global supply chains, and risks associated with environmental and social performance of suppliers and supply chain. The concepts used in this study are mostly from the exact words used by the practitioners. Companies may simplify the concepts and use them more freely and less problematically as compared to academic literature. This is shown in the looser usage of concepts when describing the analysis phase before introducing the higher level conceptualizations and previous literature. The scope naturally determines where the contribution of this study lies in the academic literature. The next chapter describes the literature to which this research makes a contribution and thus positions the thesis within the literature.

1.4. Intersection of Supply Chain Risk Management, Sustainability Risk and Sustainable Supply Chain Management

This section positions the substantive area of the thesis within the existing literature. What follows is not an exhaustive literature review of the named areas but rather a section designed to give the reader an idea of the positioning of this research. Literature is more widely used towards the end of the thesis (chapters 5–6) when the emerged theory is discussed in relation to previous knowledge. Prior to the research, I was already aware of most of the relevant literature due to previous studies I had conducted in the broad area of study. However, during the research I tried to minimize the impact of that knowledge on the emergent theory by staying open to any new ideas coming from the data without labelling them with previous conceptualizations.

The position of the subject area of this research derived from empirical data, supplier sustainability risk, is illustrated in Figure 2 in relation to key literature. There are three significant streams of literature to which this research contributes: supply chain management, sustainability, and risk management. The streams are briefly overviewed below with the emerging literature streams combining the three areas of literature, namely, supply chain risk management literature, sustainable supply chain management literature (including variations such green logistics and supply chain corporate social responsibility) and finally sustainability risk literature (mostly dealing with reputational risk) together with emerging area of supplier sustainability risk.

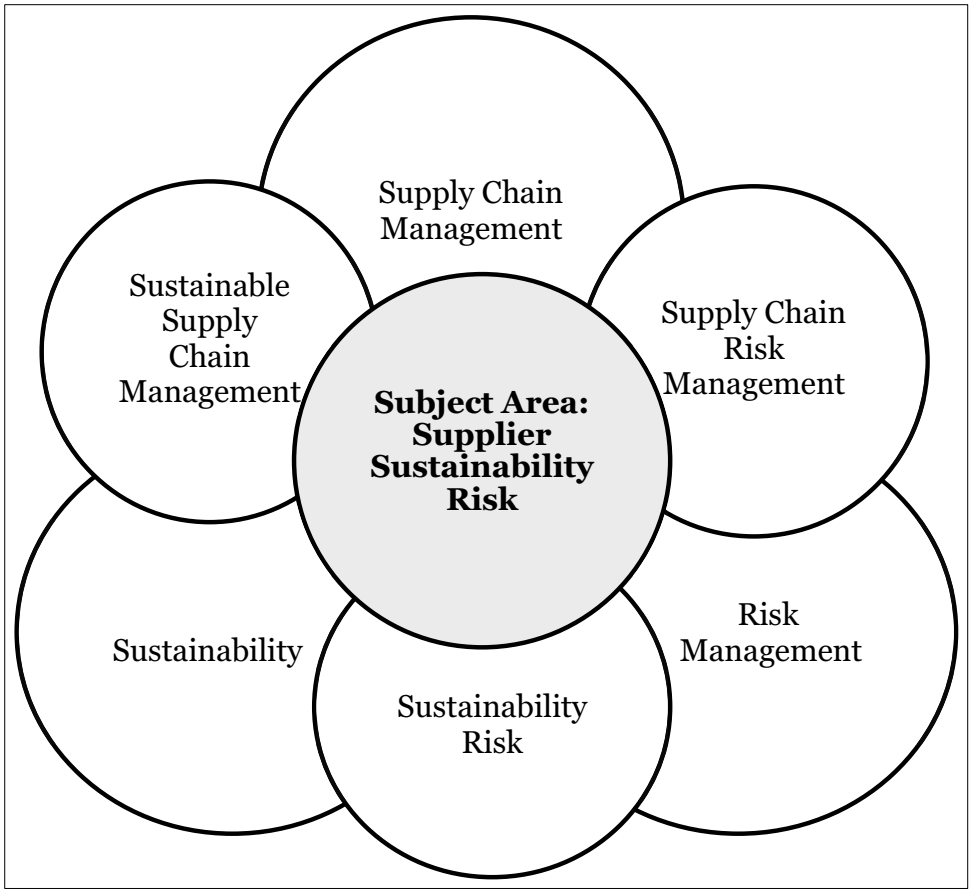

Figure 2 Positioning

1.4.1. Supply Chain Risk Management

Until recently, risk management has been in the background in the supply chain management literature, although there is wide acknowledgement of the risks and uncertainties in global supply chains (Manuj and Mentzer 2008b:192). Supply chain management overall became a prominent area of study already in the 1960s. Supply chain management has been defined, for example, by Lambert et al. (2006:1) as "the integration of key business processes from end-user through original suppliers, that provides products, services, and information that add value for customers and other stakeholders", where the process integration is in focus, while Mentzer et al. (2001:4) definition of a supply chain – a "set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer", stresses the collaboration of different parties.

Risk is defined in the literature in many different ways. In general it's the probability of variance in an expected outcome. Often, the term "risk" has been used to refer only to negative outcomes (Frosdick 1997:165); for example, The Royal Society Study Group

(1992:2) define risk as "the probability that a particular adverse event occurs during a stated period of time, or results from a particular challenge" and also risk management as "the making of decisions concerning risks and their subsequent implementation, and flows from risk estimation and risk evaluation (1992:3)". The probabilities of an event are at the core of the definition: "Risk is the chance, in quantitative terms, of a defined hazard occurring. It therefore combines a probabilistic measure of the occurrence of the primary event(s) with the measure of the consequences of that/those event(s) (1992:4)". Widely acknowledged actions for risk management are to avoid, reduce, transfer, share or take the risk (e.g. Norrman and Jansson 2004:438-439).

The aim of supply chain risk management is to protect a business from adverse events (Colicchia and Strozzi 2012:404). Supply chain risk management combines concepts, frameworks and observations from the supply chain management and risk management literature. Some scholars relate supply chain risks only to the logistics activities in companies' flows of material and information, such as Normann and Jansson (2004:437), while, for example, Jüttner (2005:122) states that the key feature of supply chain risk is, by definition, that it "extends beyond the boundaries of the single firm, and, moreover, the boundary spanning flows can become a source of supply chain risks", giving emphasis to all flows involved. Jüttner (2005:124) defines supply chain risk management as a managerial activity that is: "an exposure to serious disturbance arising from supply chain risks and affecting the supply chain's ability to effectively serve the end customer market".

Manuj and Mentzer (2008a:133) categorize risks relevant to the global supply chain context into supply risks, operations risk, demand risks, security risks, macroeconomic risks, policy risks, competitive risks and resource risks. They state that the four first ones are those most closely associated with supply chains. Supply risk is defined by Zsidisin et al. (2004:397) as "the possibility of an event occurrence associated with inbound supply that may cause failures from supplier(s) or the supply market, such that the outcome results in the inability of the focal firm to meet customer demand within anticipated costs, or causes threats to customer life and safety". Manuj and Menzer (2008a:139) define the demand risk as "the possibility of an event associated with outbound flows that may affect the likelihood of customers placing orders with the focal firm, and/or variance in the volume and assortment desired by the customer". Both supply and demand risk are at the core of this research as the research process has shown clear implications of the environmental and social performance of suppliers on both risk categories.

Manuj and Mentzer (2008a:133) presented a five-step process for global supply chain risk management and mitigation, including: 1) risk identification, 2) risk assessment and evaluation, 3) selection of appropriate risk management, 4) implementation of supply chain risk management strategy(s) and 5) mitigation of supply chain risks. Ritchie and Brindley (2007:303) present a model including 1) risk sources and profiles, 2) risk and performance drivers, 3) risk and performance consequences, 4) risk management responses and 5) risk and performance outcomes. Their model is based on key risk sources and risk drivers of environmental variables, industry variables, organizational strategy variables, problem-specific variables and decision-maker-related variables. According to them, these variables influence both risk and the potential performance. Norrman et al. (2004:439) offer what risk reduction could be in practice. They state extra inventory, multiple sources, back-up sites/resources identified, sprinklers in buildings, having risk managers and emergency teams appointed and parallel systems or to diversify as examples. In the case of

environmental and social performance-related risks, the risk management tools may be even more specific.

1.4.2. Sustainable Supply Chain Management

In their literature review, Carter and Easton (2011:46) provide an overview of literature related to what they call sustainable supply chain management. Carter and Rogers (2008:368) define sustainable supply chain management as "the strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its supply chains". They base this definition on the Elkington's (1998:37) triple bottom line adding dimensions of risk management, transparency, strategy and culture.

There is a wide selection of terms used in the literature for sustainable supply chain management. Sarkis (2012:202-203) lists the variations of the term to include: sustainable supply network management, supply and demand sustainability, corporate social responsibility networks, supply chain environmental management, green purchasing, environmental purchasing, green logistics, environmental logistics and sustainable supply chains. Pagell et al. (2010:57) introduced a definitions table for the area. The definitions seem to vary due to the slightly different emphasis on environmental topic, environmental and social topics, or the full triple bottom line as well as whether the perspective is more widely in supply chain management or more specifically in sourcing's actions. This research utilized the above-mentioned Carter and Roger's definition. Pagell et al. (2010:57) define sustainable sourcing as "Managing all aspects of the upstream component of the supply chain to maximize triple bottom line performance". They also give a list of possible synonyms of sustainable purchasing, green purchasing, responsible purchasing and ethical purchasing. Sourcing in general within this thesis is understood as the strategic sourcing of goods and services. I use the term "sourcing" instead of "purchasing" to highlight the strategic nature of it.

The concepts of sustainability and corporate social responsibility (CSR) (see, e.g., Carroll, 1999 for the development and definitions of the concept) are often used interchangeably in the literature. This thesis uses the term "sustainability" with the triple bottom line approach (Elkington 1998). However, when quoting the authors in the next section, I use CSR when the authors have used it in their text in order to avoid misconceptions regarding often differing definitions of CSR and sustainability.

1.4.3. Sustainability Risk and Supplier Sustainability Risk

Environmental and social risks have been widely discussed in the literature of corporate social responsibility in the area of management and business ethics. Stakeholder theory emphasizes a broad range of social responsibilities for business that stakeholders – that is, those individuals or groups who may affect or are affected by the organization – require from a company, and this in turn creates pressure on a company to protect its brand (Amaeshi et al. 2008:223). Reputation is seen as an asset and poor CSR as putting that asset at risk (e.g. Salam 2009:357). Thus risk is seen mainly from the reputational perspective. In the supply chain context, the literature has focused on mitigation of these reputational risks by considering, for example, the social sustainability of supplier selection (Ehrgott et al. 2011:99), codes of conduct (Prieto-Carrón 2008) or social reporting (Salam 2009:357).

The supplier sustainability risk in this research means both the supply and reputational risk to the buying organization deriving from the environmental and social performance of the upstream supply chain member. Supplier sustainability risks are a new area as a sole focus in the literature. Froestl et al. (2010:119-120) use the concept of supplier sustainability risk and state that ecological and social supply risks are generally not, or at least not in their entire content breadth, part of the supply risk management discussion. They also state that "little is known about how firms reach the decision about their sustainability risk of their suppliers and how they structure supply risk management to assure sustainability". Hofmann et al. (2013) talk about "sustainability-related supply chain risks" and aim to provide a concise description of how these risks materialize for focal firms. Often, supplier sustainability risks are mentioned as a part of a broader framework and their focus has almost invariably been in the reputational, demand-side risk. For example, Carter and Easton's (2011:46) framework for sustainable supply chain management acknowledges risk management as one of the supporting facets or facilitators for sustainable supply chain management. Risk management, in their framework, includes contingency planning for both the upstream and the downstream supply chain.

In their literature review, Seuring and Mueller (2008:1699) highlight a strategy of risk and performance as a trigger for supply chain CSR activities, where a major fear of those following the strategy is a loss of reputation if related problems arise. Spekman (2004:414) highlights six areas of supply chain-related risks – one of them being CSR – and states: "the extent to which supply chain members' reputation and image can be tainted by the actions of another member who engages in activities that result in public sentiment or outcry or, even worse, is accused of criminal behavior where liability extends up and down the supply chain". He mentions demand considerations and legal liability as the main reasons firms want to influence their partners' CSR. Outsourcing results in less control over performance, and this lack of control can ultimately create problems for the firm that far outweigh any cost or strategic advantages gained from the supply chain (425).

Overall, reputational risk is the element at the core of the current literature on sustainability risk. That alone can be considered a good reason to invest in sustainability as a corporation's reputation among its economically powerful stakeholders is a valuable asset which needs to be protected and developed (Unerman 2008:362). Minor and Morgan (2011:40) state that reputational risk is one of the key business risks that firms face and suggest a rationale for CSR: It acts as a powerful form of reputation insurance when a firm suffers an adverse event. For firms whose reputation is a key source of competitive advantage, understanding the link between CSR and reputation provides a solution to a "missing markets" problem – how to (partially) insure against reputation risk.

What if the demand does not suffer from sustainability misconduct in the supply chain or if the reporting and "doing good" image prevent the focal company's sales from suffering? Are there then no supplier sustainability risks to consider? According to the literature, there are good grounds to argue that this is not the case and that there is a significant supply risk present. There is very little mentioned about the supply risk in conjunction with sustainable supply chain management. Foerstl et al. (2010:118) offer a rare exception in their study on managing supplier sustainability risks. They studied the chemical industry and proposed that mature and sustainable supplier management capabilities are a source of competitive advantage in terms of lower exposure to reputational risks and enhanced operational performance. Hofmann et al. (2013) have also very recently looked at sustainability-related supply chain risks from the

perspective of how sustainability issues manifest as risks and create losses for the focal company.

While Seuring and Mueller (2008:1699) in their literature review highlight a strategy of risk and performance as a trigger for supply chain CSR activities, where a major fear of those following the strategy is a loss of reputation if related problems arise, they also state that the risk can derive from environmental or social performance, but also from disruptions of operational processes as discussed in "conventional" supply risk management. Unfortunately, they do not give further support for the statement in the literature, which may thus have been non-existent at the time they conducted the literature review.

What could these "conventional" supply risks be – disruptions of operational processes? Norrman and Jansson (2004:434) state that "Risk sources are the environmental, organizational or supply chain related variables that cannot be predicted with certainty and that affect the supply chain–outcome variables". When considering the process of sustainability management, two potential sources emerge. First of all, if a company is committed to sustainability and has a code of conduct extending to how it expects the suppliers to operate, misconduct in the supply chain leads to actions, regardless of immediate demand effect. This may lead to disruption of operational process and is thus a source of supply risk. Another source is even more inevitable. If there is a serious break of environmental, ethical or social conduct at any of the suppliers resulting in a labour strike or a malfunction of the manufacturing line, there is a direct impact on the supplier's ability to deliver. The impact of such events is naturally related to the supply strategies of the company but nevertheless poses a significant threat to supply.

The supplier sustainability risk in this research means both the supply and reputational risk to the buying organization deriving from the environmental and social performance of an upstream supply chain member.

1.5. Intended Contribution

This research intends to contribute to the above-mentioned streams of literature, namely supply chain risk management, sustainability risk and sustainable supply chain management. The previous literature has only cursorily covered the area of supplier sustainability risks. There are "silos" detectable in the research as sustainability literature has traditionally looked from the single company perspective and only recently extended to the broader supply chain realm. Risk management has also only recently started to cover the supply chain perspective. The results of this research provide valuable insight to supplier sustainability risk. Moreover, companies have increased interest in understanding the risks related to the supply chain, and thus practitioners are likely to be interested in the findings of the study.

A grounded theorist expects to make a clear contribution to the practitioners. After all, the research problem is solely derived from the practitioner's own world, from something that is important to him/her. The goal of Glaser (1998:244) was to develop a methodology that gave knowledgeable people in the substantive area something of value for their problems. He called it the "layman trust". Grounded theory could give the laymen a conceptual grasp over what they were experiencing at the incident level. This study's "laymen" are the sustainability and supply chain professionals. This study

contributes to these practitioners in the form of useful interpretations of processes that they can apply in real-life situations.

In this study, grounded theory methodology is applied in a rather fresh context, supply chain management. Mello and Flint (2009:107) encourage the use of grounded theory in logistics research. Also Manuj and Menzer (2008a:133) utilized it in an early attempt. Carter and Easton (2011:46) also encourage researchers to delve into theory development efforts and innovative approaches to traditional analyses in sustainable supply chain management area. Various scholars (Randall and Mello 2012:863; Manuj and Pohlen 2012:784; Denk et al. 2012:742) have called for more rigorous grounded theory research in the supply chain management field. This study has attempted to strictly follow the tenets of the Glaserian approach to grounded theory and thus increase the rigor of this particular research.

1.6. Structure of Thesis

This thesis follows the traditional Ph.D. monograph thesis structure modified for the purpose of accommodating a viable reporting of grounded theory research (see Figure 3). The introduction in Chapter 1 gives the background of the study by funnelling down the research data from the broad problem to the research problem. The research objective and research questions are presented in Section 1.1. Section 1.2 discusses the research design – that is, the methodological choice, sampling and data gathering and analysis techniques – while 1.3 covers the scope and delimitations of this research. The literature review within Chapter 1 (Section 1.4) is purposefully rather short. It gives the reader the understanding of the literature to which this research contributes and thus positions the thesis, but it does not elaborate with aims to create any theoretical framework before the analysis chapters and the theory rising from the data. It also introduces the reader to some of the key vocabulary by offering definitions of the core terms. The aim of the structure is to allow the reader to follow how the research was conducted and how the theory evolved, and thus the literature is extensively addressed only when findings are compared to the existing knowledge on the topic. Finally, Section 1.5 discusses the contribution of this thesis to both the literature and practical supply chain management.

The research methodology is introduced in detail in Chapter 2. Section 2.1 talks about the foundation of grounded theory methodology and the key themes. The interpretive assumptions from ontological and epistemological standpoints are presented in Section 2.2. Two streams of grounded theory and the choice of approach are explained in 2.3. The chosen methodology's suitability for this particular study is discussed in Section 2.4. Section 2.5 brings light to the key elements of the grounded theory research process such as coding, constant comparison, theoretical sampling and the creation and sorting of memos and finally, Section 2.6 discusses the determinants of quality in grounded theory research, namely fit, relevance, workability and modifiability.

The analysis part follows the research process in the steps taken to finally reach the saturation point of data leading to the emergence of the theory. The reader is guided through examples of coding and analysis regarding how the conceptualizations have emerged. Chapter 3 presents the data from entering the field, or Study 1. The analysis of data from the rest of the five companies in the final sample is presented in Chapter 4. Section 5.1 identifies the key elements of "risk of suppliers' environmental and social performance" which represent the interpretations of the interviewed managers on the topic and then moves further to a higher conceptual level. In Section 5.2, the

relationships between the described elements are discussed in detail and the emerged categories are compared with previous literature. The theory is woven into the broader realm of literature, and the literature works as another set of "data" which is constantly compared to the rest of the data, codes and memos. Finally the discovered theory is presented in Chapter 6. Each category of the model is described in detail, and the relationships between categories are discussed. The emergent theory as a whole is also discussed in relation to previous literature. Previous literature is discussed in Section 6.2 in relation to the whole framework, while it is discussed in relation to each element of the framework in Chapter 5.2. Section 6.3 presents the workshop held (Study 3), where it is shown how practitioners understand the discovered framework.

Chapter 7, Conclusions, takes a look back at the research questions set forth right after entering the field. The questions are answered based on the emerged theory, and a more appropriate research question is formulated – one that is actually answered by the theory. Chapter 7 also estimates the quality of the study measured by Glaserian criteria. Finally, the academic and practical implications and limitations of the study are discussed as well as suggestions for further research.

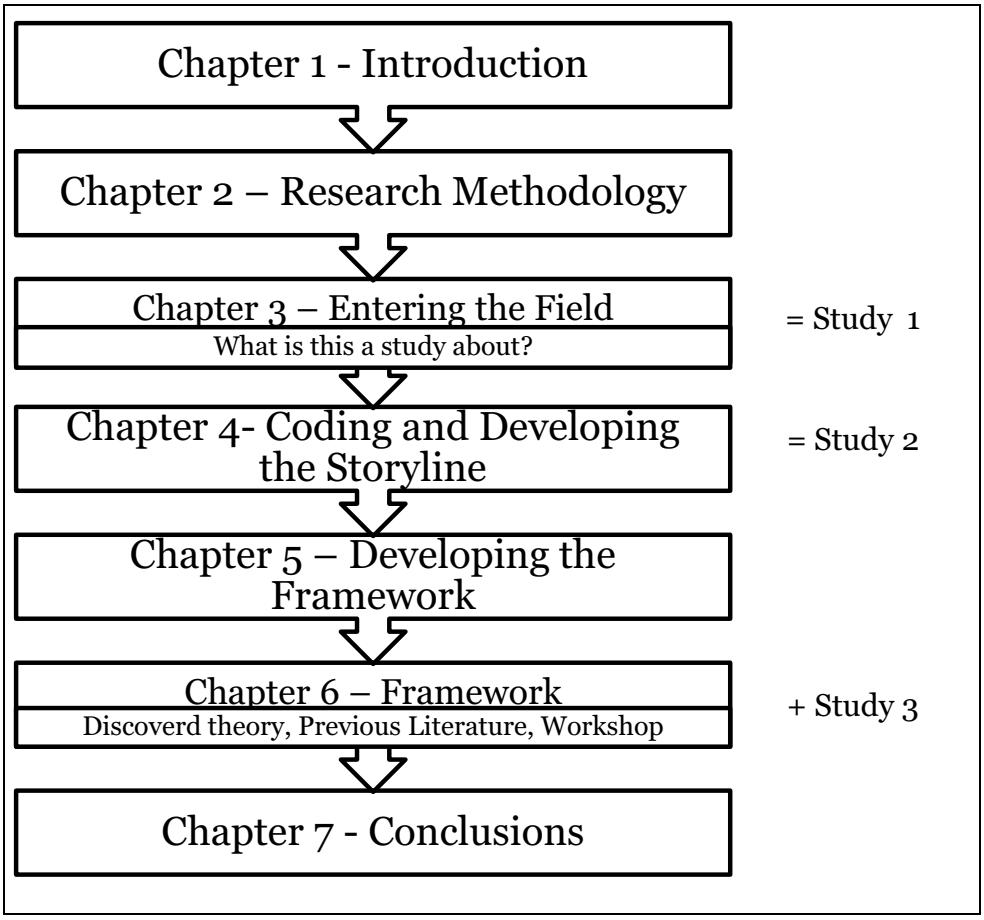

Figure 3 Structure of Thesis

This introductory chapter has presented the research questions as well as the aim and objective of the thesis. A brief literature review positioned the thesis in the wider academic context. The research design based on grounded theory methodology was briefly discussed. Finally, the scope, limitations, contribution of the study and structure of the thesis were presented.

Table 1 summarizes the key concepts and their definitions used in this study. It is important to note that as this research is based on grounded theory, the conceptualizations, except for "sustainable supply chain management", have been chronologically taken place towards the end of the study, while the manuscript format presents them at the beginning of the thesis. Until the theory emerges, I use "risk related to suppliers' environmental and social performance", which is the core concept discovered upon entering the field. Later, the lengthy expression was crystallized into "supplier sustainability risk".

Table 1 Definitions of Key Concepts

CONCEPT	DEFINITION
Supplier sustainability risk	Supply and reputational risk to the buying organization deriving from the environmental and social performance of the upstream supply chain member. (Chapter 5)
Suppliers' environmental and social performance	Upstream supply chain member's performance in environmental and social issues, i.e. adherence to laws and regulations and compliance to, e.g., the buying company's supplier code-of-conduct. (Chapter 5)
Sustainable supply chain management	"The strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its supply chains" (Carter and Rogers 2008:368)

This concludes the introductory section of the thesis. Chapter 2 will present the chosen research methodology in detail. It discusses the foundations of the grounded theory methodology, the philosophical assumptions behind it and its suitability for this particular research. The key processes are described as well as the applicable measures for judging the quality of this research.

2 RESEARCH METHODOLOGY

This research is designed on the methodological principles of grounded theory (Glaser and Strauss 1967). It takes an interpretive, epistemological standpoint and aims at creating a substantive theory. Grounded theory is an inductive methodology, meaning that the reasoning moves from specifics to broader generalizations and theory. Theory is seen as arising from the data though a systematic process, providing a particular framework for the research as a whole: how it is conducted, what the aims are and how the findings are reported.

This chapter introduces the grounded theory methodology, how it fits with the subject area under study, what its implications are for the research design and what the ontological and epistemological assumptions are behind the research. The first section introduces the background and key principles of the grounded theory method, starting from the 1960s when Glaser and Strauss first discovered the method (Glaser and Strauss 1967) and moving on to the division of the authors' standpoints during later decades. Then, in Section 2.2, the interpretive assumptions behind the method are presented. Section 2.3 discusses the applicability of grounded theory to the study of supply chain management, and this particular study is discussed in detail with a few examples of application in the supply chain management research as well as more broadly in management and organizational research. Then, the grounded theory signature elements of the research process are described in Section 2.4, namely coding, theoretical sampling, memoing, sorting of memos, and writing in a specific way. Finally, Section 2.5 presents the criteria for determining the quality of a grounded theory research study.

2.1. Background of Grounded Theory Methodology

Grounded theory (GT) is a research tradition created by Barney G. Glaser and Anselm L. Strauss in the 1960s. Their monograph *The discovery of grounded theory: strategies for qualitative research* (1967) laid the foundation for the methodology. American pragmatism and, in particular, sociology's symbolic interactionist school of thought constitute the disciplinary traditions that helped to inform grounded theory. Glaser states (1998) that grounded theory in large measure had its roots in quantitative methodology and qualitative math. While grounded theory is currently thought to be prominently a qualitative approach, this warrants an explanation. "Grounded theory uses probability statements asserting patterns or preponderance of behavior. Numbers are not necessary to understand qualitative hypothesis. . . . Whether the theoretical statement is reduced to mathematical formula or substructed to a qualitative assertion depends on the data and the researcher" (22). Glaser was educated at Columbia University, where the quantitative influence originated from. Strauss, on the other hand, had a background in The Chicago school symbolic interaction and qualitative research, bringing in the view of the social construction of reality by symbolic interaction making meaning through self indications to self and others. From Strauss, Glaser learned that "man was a meaning making animal" (Glaser 1998:32).

Grounded theory was born to give an alternative to the extreme positivistic research in social sciences at the time. It was an attempt to avoid highly abstract sociology (Goulding 2002:41) and the common deduction without theory building. The name grounded theory reveals the foundation of the method. It reflects the source of the

developed theory which is grounded in the behaviour, words and actions of those under study (Goulding 2002:40). The theory evolves though continuous interplay between data collection and analysis (e.g. Glaser and Strauss 1967; Glaser 1998; Corbin and Strauss 1990). It's the systematic generation of theory from data that explains most of the variation in the data. First of all, theory emerges from data. For a grounded theorist, all is data, although analysis is often considered to utilize qualitative data only. Grounded theory allows for a wide range of data, provided the data have relevance and are fit to the study, although as with most other forms of qualitative research, the common sources are interviews and observations.

Grounded theory is used to understand social processes that are problematic for the people involved. The purpose is to build theory, not answer questions such as "what happened?" Ultimately, the aim of the grounded theorist is to develop theory which goes beyond mere description. Grounded theory conceptualizes the data, raising the level of abstraction about them to a higher level with few concepts that indicate many seemingly separate incidents (Glaser 1978). According to Glaser and Strauss (1967:3) theory should: "(1.)enable prediction and explanation of behavior, (2.) to be useful in theoretical advance in sociology, (3.) to be usable in practical applications – prediction and explanation should be able to give the practitioner understanding and some control of situations, (4.) to provide a perspective on behavior – a stance to be taken toward data and (5.) to guide and provide a style for research on particular areas of behavior". The elements of the theory created by comparative analysis are the conceptual categories and their conceptual properties as well as hypotheses or generalized relationships among the categories and their properties (Glaser and Strauss 1967:35).

Grounded theory is an inductive methodology with some deduction included. While most of the grounded theory research is inductive, the process of theoretical sampling is deductive: "it is the carefully grounded deduction from an inducted category or hypothesis of where to go next for data to compare" as Glaser (1998:43) states. Some would thus call the methodology abductive (Suddaby 2006:633). According to Goulding (2002), grounded theory has a built-in mandate to strive towards verification through the process of category saturation – that is, sampling data for the category until no new data can be found. It may even be argued that grounded theory is also validational owing to the symbiosis of induction and abduction during constant comparison of data. Suddaby (2006:639) notes that "The notion of abduction has become incorporated into grounded theory as 'analytic induction', the process by which a researcher moves between induction and deduction while practicing the constant comparative method". Strauss (1987:12) concludes that induction had been overemphasized in grounded theory research. He is of the opinion that whenever a researcher conceptualizes data, he is involved in deduction, induction and verification. The interplay between induction and deduction is needed in all research. While pure deductive studies present hypotheses and then complete a study to test them, grounded theory often offers hypotheses for further verificational research. As Randall and Mello state (2012:867), "This methodology differs from quantitative approaches that deductively test theory based upon a priori assumptions".

The two authors of *The Discovery* (Glaser and Strauss 1967) eventually drove the grounded theory method in two slightly different directions during their careers. The defining difference between Glaser and Strauss regarding theory generation is in the level of analysis used in generating theory (Mello and Flint 2009:117). Manuj and Pohlen (2012:790) describe the difference between the approaches as follows: "One philosophical paradigm is emergent (following Glaser), and the other is more formulaic and directive (following Strauss). Other variations such as the constructivist approach

by Carmaz have also emerged". Goulding (2002) instructs to carefully decide which method, Glaserian or Straussian, best suits the researcher's personality and preferred modes of working before embarking on the research. Denk et al. (2012:747) state that "when conducting GT, researchers must carefully choose the underlying school of thought so that the research purpose and processes do not deviate from the methodological assumptions". Glaser (1998) often calls for the fit of the methodology also to the researcher, not just the fit with the subject area and aim of research. The Glaserian method is chosen in this research for its clarity and straightforwardness instead of taking on the even more structured and controlled way of analysis of the Straussian flavour. This choice is seen throughout the thesis, especially in the lack of axial coding, which is a trademark of Strauss' approach. Next, the interpretive assumptions behind grounded theory are discussed.

2.2. Interpretive Assumptions

Any method should be logically consistent with the researcher's key assumptions about social reality and how that reality is "known". Grounded theory is appropriate for a researcher that wants to make knowledge claims about how individuals interpret reality. The interpretive approach to science tends to be nominalist, antipositivist, voluntarist and ideographic. Realist ontology rests on the assumption that the variables of interest exist outside individuals and are, therefore, objective and measurable, while nominalist ontology gives the social world a questionable and problematic nature (Burrell and Morgan 1979). In interpretive ontology, the key variables of interest are internal and subjective. Based on this background, grounded theory does not make truth statements about reality, but rather "patterned relationships between social actors and how these relationships and interactions actively construct reality" (Glaser and Strauss 1967). The interpretive researcher understands that the world of lived experience forms the point of view of those who live it – a subjective reality, which again, the researcher interprets. Social reality is built up over time through shared communication and experience. What events and object mean to people, what happens around them and how they adapt considering these meanings and perceptions is considered important. In organizational studies, a stream of research has adapted these principles and see that organizational members also actively create, or enact, the reality that they inhabit (Weick 1979:41; Berger and Luckmann 1966). Locke (2001) notes that the paradigm lines are not so clearly drawn. According to her, in management and organization studies, the grounded theory approach has been invoked in works that are modernist in their orientation, in works that fall within the interpretive paradigm and also in postmodern approaches.

Due to its roots, grounded theory rests on interpretive assumptions of philosophy of science. Grounded theory is a practical research method with emphasis on the interpretive process. As other forms of social studies in the interpretive paradigm, grounded theory research is interested in the "the daily realities (what is actually going on) of substantive areas" (Glaser and Strauss 1967). The basic idea of grounded theory is the discovery of theory from data systematically obtained from social research (Glaser and Strauss 1967:2). Grounded theory is "most suited to efforts to understand the process by which factors construct meaning out of intersubjective experience" (Suddaby 2006:634). "Indeed, the genius of Glaser and Strauss's original methodology is that it outlines a procedure by which formerly tacit processes are made explicit". (Suddaby 2006:640). They labelled the method "grounded theory" to reflect the source of developed theory: ultimately grounded in the behavior, words and actions of those

under study – grounded in data which are systematically gathered and analysed (Goulding 2002).

Randall and Mello (2012:869) state that while grounded theory resides toward the relativist/interpretivist end of the continuum, making it similar to many qualitative methods, it seeks to find patterns and build theory and is thus different from other qualitative methods. Different from researchers of phenomenology, grounded theory researchers are "less focused on subjective experiences of individual actors per se and are instead more attentive to how such subjective experiences can be abstracted into theoretical statements about causal relationships between actors" (Suddaby 2006:635). While phenomenologists leave the data rather raw to enable holistic interpretation, the grounded theorist's "interviews with the subjects may start with a phenomenological interest in subjective understandings, but the primary interest is not in the stories themselves. Rather, they are a means of eliciting information on the social situation under examination". Confusion with phenomenology can also lead to failure to lift the data to conceptual level. Another reason for this confusion may be that the data collection has been stopped prematurely. The data collection must continue until nothing new emerges – that is, "category saturation" "verifies" the grounded theory.

Grounded theory has only recently been applied in supply chain management research. Next, grounded theory's applicability to the field is discussed.

2.3. Applicability to Studying Supplier Sustainability Risk

While logistics and supply chain management have long suffered lack of recognition as academic disciplines, they now, according to Manuj and Pohlen (2012:784-785), have gained recognition while still largely borrowing supporting theories from other disciplines. They claim that some of these theories do not fit or explain enough due to lack of grounding in the actual supply chain phenomena.

Carter and Easton (2011:46) conducted a literature review of sustainable supply chain management. They found that 55% of articles in the sample failed to employ any sort of theory, and of the theories used, stakeholder theory and resource-based view were the most used. Methodologically, surveys had been most popular, and there was an detectable increase in the use of case studies. They saw as troubling the lack of laboratory and field experiments and thus state that "there are opportunities to use richer qualitative approaches such as ethnographies". These would help to better triangulate findings across extant studies. Less than 4% of the articles Carter and Easton studied used conceptual theory building as a methodology to develop or expand theoretical insight. The whole supply chain management field has generally utilized theories developed in adjacent fields, such as resource based view and institutional theory or transaction cost economics. The same finding applies to sustainable supply chain management. Carter and Easton (2011:58-59) see sustainable supply chain management ripe for theory development and call for additional work in this area. Grounded theory can offer a methodology for sustainable supply chain management that would propel the theory development forward.

Grounded theory has been already used to explore a wide range of management issues: "Usually researchers adopt grounded theory when the topic of interest has been relatively ignored in the literature or has been given only superficial attention" (Goulding 2002). While supply chain management research has chiefly been positivistic in nature (e.g. Denk et al. 2012:742), the more interpretive assumptions

have gained ground mostly due to the rise in interest on the social side of supply chain management. This also explains the most widely used method for grounded theory, which is a qualitative methodology using mainly interviews as data but that also considers “all” to be data applicable for theory creation.

In addition to the inherent theory development focus, by utilizing interpretive methods, the managers’ perspectives could be best understood. Qualitative methods often add value to research by bringing "understanding of the actual human interactions, meanings, and processes that constitute real-life organizational settings" (Gephart and Rynes 2004:455). Researchers can best understand how human invention continually generates new ways of interaction and organization by using a methodology that is attentive to issues of interpretation, which grounded theory offers (Suddaby 2006:641). Social and behavioural issues are also found in supply chains. Randall and Mello (2012:863) stress this side of supply chains and the “complex behavioural dimensions at both the individual and organizational levels”. This is where inductive approaches can provide the best tools for understanding the complex issues inherent in supply chains.

Modern supply chains’ complexity is named by Randall and Mello (2012:864) as the motivation to use grounded theory because of the methodology’s ability to inform about the human side of supply chain management, how individuals interact with the whole and the “underlying meanings in human experiences, interactions, and relationships that form company strategies and actions in a supply chain context”. They raise the perceptions and reactions of supply chain managers to the front. For the researcher, that means interpreting those and identifying the interactions with the business environment. This is where the methodology helps – by providing a proper process. Denk et al. (2012:742) also promote the use of the methodology: “GT is an appropriate methodology for investigating behavioral and social aspects of organizations and inter-organizational relationships, and thus should be utilized more frequently in future SCM literature”.

Supply chain management researchers increasingly utilize grounded theory to extend the knowledge base (Denk et al. 2012:749). Manuj and Menzer (2008b:192) utilized grounded theory to some extent in an attempt to create a model of global supply chain risk management strategies. However, their approach mixed positivistic methods with some ideas from grounded theory as they conducted a literature review first to search for the gaps in knowledge instead of going to the field and finding the relevant problem there. In fact, critique of grounded theory methodology actually focuses mostly on the application of the methodology rather than the method itself. Naturally, critiques are also often between the Glaserian and Straussian schools as listed above. Jones (2007:84) and Suddaby (2006:633) base their papers on the lack of integrity and misunderstandings related to how the method is originally brought to life. The mixing of assumptions is quite understandable at this stage of grounded theory utilization in light of the fact that supply chain management been predominantly positivistic.

In a literature review conducted by Denk et al. (2012:750), the authors find that both schools of thought, Glaserian and Strauss’, are popular in supply chain management literature: 44% of investigated papers relied on Glaserian vs. 56% on Strauss’ school of thought. However, the division is not clear as the studies often lacked in transparency regarding the chosen approach and cite both schools of thought. Denk et al. (2012) call for increased transparency and adherence to the chosen methodology. In the study by Denk et al. (2012:753), they find that the Glaserian approach had yielded more

deviation from the tenets of the tradition, and they relate it to the "more rigorous and inflexible approach demanded by Glaser".

Mello and Flint (2009:107) have studied the application of grounded theory to logistics research and state that "if executed well, it should reveal currently unexpected and yet critically important perspectives on new and even well researched logistics phenomena". (109). For example, Mello and Flint (2009:107) see "significant opportunity for grounded theory application in logistics and supply chain management research". They are encouraging researchers to be more specific about their methodology and understanding of the requirements grounded theory sets for the researcher.

Manuj and Pohlen (2012:784) claim that "Grounded theory [GT] has become increasingly accepted by logistics and supply chain management researchers as valid research methodology", while they also state that in supply chain management grounded theory still "encounters scepticism due to perceived lack of rigor and credible findings". However, they promote the use of grounded theory because when well-executed, "GT research can make significant contributions to the discipline through theory development and increasing our understanding and ability to explain key phenomena" (Manuj and Menzer 2012:800).

It is interesting how the attempts to give advice on writing and reviewing grounded theory research in the supply chain management field specifically look for rigor, validity and credibility when evaluating studies on grounded theory (e.g. Manuj and Pohlen 2012:784; Denk et al. 2012:742). The use of that terminology indicates the epistemological underpinnings of the authors. It would be valuable to have a researcher outside supply chain management who is educated in the more interpretive tradition to evaluate the adherence of supply chain management grounded theory studies to the tradition. The mentioned studies seem to want to slightly change the evaluation criteria to better match the supply chain management's inherently positivistic tradition.

Grounded theory has also been previously used to study sustainability in supply chains. An example of this is Flint and Golicic's (2009:841) search for competitive advantage with sustainability, where they studied New Zealand's wine industry. Along their Glaserian approach, they did not decide on the core category "searching for advantage through sustainability" a priori, but rather wanted to understand "how managers approached sustainability and innovation in such a competitive environment".

In the risk management literature, there are some hints of interpretive assumptions. Frosdick (1997:166) successfully goes through the different perceptions of risk and notes definitions ranging from individual perception to those that are more culturally bound. There are suggestions that in some traditions, in social sciences in particular, the risk can be seen as a social construct – for example, The Royal Society state that "risk is socially constructed" (1992:7). An example of a study where the socially constructed perspective of risk was studied was Palmer et al. (2010:234), who looked at incident management and managers admitting fault. Their study highlighted the ceremonial processes and tasks that shape and influence admitting fault and also identified the impact of the cultural environment on them. Moreover, from a risk perspective, it can thus be interesting to analyse supplier sustainability risk management utilizing the grounded theory method.

All in all, grounded theory seems suitable for studying the rather new supply chain management field as it offers an inductive, "holistic and process-oriented method to

determine the rules, processes, and strategies upon which supply chains operate" (Randall and Mello 2012:866). Grounded theory offers a systematic, interpretive method to look into the human, or social and behavioural side of supply chains. It has already been successfully used to some extent in studying supply chains and even sustainability in supply chains. As long as the researchers strictly adhere to the tenets of their chosen grounded theory approach, the called for rigor is ensured. Next section discusses the preconceptions before entering the field.

2.4. Preconceptions

There is a certain personal fit in using grounded theory in this particular research. As Suddaby (2006:633) states: "Exemplary research using grounded theory also requires considerable exposure to the empirical context or subject area of the research". I have extensive practical work experience within the subject area of sustainable supply chain management. I became familiar with the empirical realities of the corporate world in risk management as a currency dealer in the headquarters of a global manufacturing company. I gathered vast experience in supply chain management in various global sourcing positions and gained sustainability experience as a supplier sustainability lead auditor over the past 10 years. These positions have trained me well to welcome the conceptual realities of the area of the study.

In addition to being a clear benefit in quickly grasping the essence of the practitioners' concerns, this personal engagement with the subject area calls for special attention to engagement in on-going self-reflection regarding biases and word-views in all phases of the research. The attempt has been to abandon any preconceptions and pet-terms I have grown familiar with in the work setting and let the data speak for itself. The later stage of the research process again called for analysing my own thoughts about the discovered theory. I reflected on the knowledge I had about the subject area before the analysis in terms of the theory that I had discovered. This was part of analysing the quality of the research aspects of the study as the grounded theory methodology calls for relevance and workability of the theory to practitioners.

Denk et al. (2012:744) make the distinction of entering the field with or without preconceptions regarding the different schools, Glaserian and Strauss' grounded theory. In the case of the Glaserian approach, one should not have prior assumptions or theoretical knowledge, while with the latter, one should enter the field with an "initial idea or predefined research questions". They state that "researchers who have prior knowledge about supply chain rely on this knowledge to precisely analyse recurring themes that dominate individual behaviours in supply chains" (Denk et al. 2012:745). This study follows the Glaserian approach. I have prior knowledge of sustainable supply chains but allowed the core themes – risk related to supplier's environmental and ethical behavior – to emerge from the data; I did not predetermine that that was what I wanted to cover or what I would have found a gap in literature on. For example, Zsidisin et al. (2004:397) reviewed the literature and ensured there was a gap in the literature before entering the field. That may be aligned with the Straussian, but not the Glaserian, approach to grounded theory.

Glaser (2011:1) talks about preconceptions in terms of the ability to not judge right or wrong, due to racial, gender, age and other similar reasons. He states that "Generating good GT conceptual ideas requires the researcher to be a non-citizen for the moments of research so he can come closer to letting the data speak for itself". (1) It is thus not only about preconceptions of the research context or literature, but also about letting go

of general assumptions during the research phase. The research process, including elements that aim to ensure preconception-free research, is described next.

2.5. Research Process

Grounded theory research has certain signature processes without which one could not talk about grounded theory. The key processes are constant comparison and theoretical sampling. Coding, memoing and sorting, writing grounded theory and member checking are also central to the method and are defined in this chapter. The data collection process and reporting of the research are also discussed below.

Constant comparative method is a foundational feature of grounded theory. Constant comparison involves comparing like with like to look for emerging patterns and themes (Goulding 2002:69). Conceptual ideas are developed through the process of comparing diverse or similar evidence which indicates the same conceptual category. Evidence should be used to generate conceptual properties or categories from it. Concepts or abstractions of what is going on are illustrated by this evidence. Constant comparison helps to generate properties that increase the explanatory power of the category in question (Goulding 2002:69). This is very important as the grounded theory should be able to "lift" the data to a conceptual level (Suddaby 2006:636). Randall and Mello (2012:867) state the meaning of constant comparison well: "Constant comparison seeks to identify theoretical similarities and differences between the perceptions of participating individuals. These contrasting perspectives allow the development of higher order concepts that explain behavior".

The data gathering starts with "purposive sampling" and refers to "the calculated decision to sample a specific set of events, settings, or people based on criteria that are decided in advance" (Manuj and Pohlen 2012:793). The "purposive sample" in this study consisted of an interviewee from a specific company. The company fits the subject area of study – which is sustainable supply chain management – as the company aspires to lead in the area of sustainability and has a sufficient size to have extended experience of complex supply chains (as depicted in company data C1AR, C1SR, and C1YT, details of which in Appendix 1). The first interviewed manager (C1-I) had oversight over sustainable supply chain management as her position reported in a matrix to both the sustainability and supply chain organizations of the company. She had extensive experience in working with sustainable supply chains in various companies as well as the company in question. Access to the purposively sampled data was gained through personal connections and thus represents a convenience factor (Manuj and Pohlen 2012:784) in selection of the context. While the "Initial sampling represents a point of departure . . . theoretical sampling is used to saturate categories or concepts for theoretical refinement and elaboration" (Manuj and Pohlen 2012:794).

Theoretical sampling is the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges (Glaser 1978:36). It's not about the specific number of interviews, but the saturation point: "The criteria for determining saturation . . . are a combination of the empirical limits of the data, the integration and density of the theory, and the analyst's theoretical sensitivity" (Glaser and Strauss 1967:62). In essence, "no published guidelines or tests of adequacy exist for estimating the sample size required to reach saturation" (Manuj and Pohlen 2012:796). In this research, the signals of saturation – that is, repetition of information from different interviewees and confirmation of existing conceptual

categories – were listened to. The eventual full sample size and composition of data gathered can be found in Appendix 1. According to Randall and Mello (2012:867) theoretical sampling involves all or some of the following: "comparison of concepts articulated by study participants based upon a single interview; comparison of interviews with multiple participants; comparison and review of field memos; comparison with organizational artefacts such as meeting minutes, awards, and appraisals; and comparison with relevant literature". In this study, all of the above mentioned cases apply.

Open coding is the process of breaking down the data into distinct units of meaning (Goulding 2002:76). Coding is the conceptualization of data by the constant comparison of incident with incident, and incident with concept, in order to develop categories and their properties. During and after coding, the ideas arising from the code are written down in a memo. Memos are the theorizing write-up of ideas about substantive codes and their theoretically coded relationships as they emerge during coding, collecting and analysing data and during memoing (Glaser 1998:177). Benefits of memos include the acquisition of leads for theoretical sampling and keeping track of the emergent theory. Eventually memos, too, reach the point of saturation and need then to be sorted for write-up. Sorting of the memos is the last stage of the grounded theory research process before writing up the theory. It is the test of how good the collecting, choosing of a problem, coding, saturation, sampling, and memoing were (Glaser 1998:187).

The grounded theory mantra is "all is data". In this particular research the company reports, videos and interviews are used as the data collection method. Interviews for a grounded theory study are conducted differently and are analysed differently than interviews conducted within a case study, phenomenological study, or ethnography (Goulding 2002:109). The most common form of interview in the grounded theory context is the face-to-face semi-structured, open-ended, ethnographic, in-depth conversational interview (Goulding 2002). Interviews constructed along those principles have the potential to generate rich and detailed accounts of the individual experience.

Throughout the presentation of this research, from the introduction to the other chapters, the theoretical concepts that actually emerged from the study have been employed. The correct form of reporting an interpretive research study would require a lengthy qualitative data presentation before presenting the theoretical dimensions and contributions of the study. The sequence would be data first and theory last as "the authors must avoid verifying existing theory or hypotheses during the research" (Manuj and Pohlen 2012:792). However, in this report, this trademark feature has been neglected for the sake of increased clarity for the reader, and thus part of the contribution has been revealed already in the introductive chapters. Despite the fact that the theoretical concepts appear in the very beginning of the report, they indeed emerged from the analysis of data through the process of abstraction, except for "sustainable supply chain management", which was the overall topic decided upon before the data gathering commenced. This, to some extent, "cleans up" the messy, nonlinear reality of grounded theory research. By no means does this mean that any preconceived hypothesis would have been launched to be tested during the study.

Suddaby (2006:634) states "Grounded theory is not an excuse to ignore the literature", rephrasing a common misconception that grounded theory forbids any prior knowledge of the field – that is, knowledge of the literature and prior experience without defined research questions. Some misguided researchers thus avoid formal reviews of relevant

literature in their manuscripts to create the impression that their observations and analytic categorizations of data were not coloured by previous ideas. Glaser and Strauss's formulation of grounded theory was never intended to encourage research that ignored existing empirical knowledge. The danger does not lie in the possible contamination of a researcher's perspective but in forcing to test the hypotheses – either overly or unconsciously – rather than observing directly. Goulding (2002) also stresses that *The Discovery* (Glaser and Strauss 1967) should not be interpreted as saying that the researcher should have a blank canvas when entering the field, rather, that the extant theory sensitize the researcher to the conceptual significance of the emerging concepts, and thus the knowledge and theory are used as if they were another informant, thereby giving a conceptual leverage to the theory that might otherwise rely on superficial grounds – resulting in theory which goes beyond thick description.

One strategy to avoid the dangers of relying on prior literature is to draw from several substantive areas that are frequently reflected in a given daily reality instead of focusing too closely on a single substantive area (Suddaby 2006:635). In this research, there are three substantive areas utilized, namely risk management, supply chain management and sustainability. Paying special attention to the fact that there is certain influence of the prior conceptualizations is another strategy that was utilized in this research. Even if the ideas are familiar, keeping a fresh mind is the key to overcoming the challenge. This research presents an overall literature review of the subject area as background for the reader (Section 1.4.) but does not create a conceptual framework or model based on the previous literature. The literature is then again thoroughly reflected against the emerged concepts in Chapter 5 and the emerged theory in Chapter 6.

Regarding the presentation of grounded theory research, Suddaby (2006:637) states: "In pure form, grounded theory research would be presented as a jumble of literature consultation, data collection, and analysis conducted in on-going iterations that produce many fuzzy categories, that over time, reduce to fewer, clearer conceptual structure. Theory would be presented last". In this research, an attempt was made to present the analytical process within the "storyline" format and to give examples of the "fuzzy" process of conceptualization, which is also recommended by Suddaby (2006). He suggested that the process of data analysis is made apparent to the reader most effectively by providing illustrative examples of coding techniques and the evolution of conceptual categories in tables or appendices.

The write-up of the analysis is meant to follow the "storyline" of how I ended up with certain conceptualizations and decisions. The write-up of the analysis is based on the memos created during the research process on the discovered codes. In the first stage, the memos were also collected in the form of a PowerPoint slide set to go through with the person being interviewed. The memos of codes turned finally into theoretical memos with a higher level of abstraction and explored the relationships between codes. The memos were sorted under descriptive headings before the write-up took place. The write-up of the analysis took place in two different points in time. The first one ended when the theory was almost ready. At that stage, I wrote memos more about comparisons of the emergent theory with the previous literature and comparisons of those memos to previous memos. That process still modified the emergent theory slightly until it was written down as shown in this thesis and contributed to the write-up of Chapters 5 and 6. Later, the emerged theory was presented to practitioners in order to receive insight regarding how practitioners view and understand the framework, and the memos of that process are written out in Study 3 Section 6.3. The procedure of member checking is widely recognized as a way to estimate the credibility

of the findings in grounded theory methodology (Manuj and Pohlen 2012:784; Goulding 2002).

2.6. Quality of Research

Grounded theory research cannot be evaluated according to the same criteria as logico-deductive research due to the ontological and epistemological assumptions behind grounded theory methodology. This study utilizes the Glaserian approach, and thus the criteria suggested by Glaser (1978,1998) suits best for evaluating the quality of this specific grounded theory study. The criteria are fit, relevance, workability and modifiability. The definitions in Table 2 of the four criteria are from Glaser's books *Theoretical Sensitivity – Advances in the Methodology of Grounded Theory* (Glaser 1978) and *Doing Grounded Theory – Issues and Discussions* (Glaser 1998). The table also describes the actions taken in this study to ensure fulfilment of the criteria.

Table 2 Quality of Research Criteria in Grounded Theory Research and Actions Taken

CRITERIA	DEFINITION	ACTION
Fit	"The categories of the theory must fit the data. Data should not be forced or selected to fit pre-conceived or pre-existent categories or discarded in favor of keeping an extant theory intact" (Glaser 1978:4).	Research questions and hypotheses were not formulated before entering the field.
Work	"A theory should be able to explain what happened, predict what will happen and interpret what is happening in an area of substantive or formal inquiry. This is achieved in our view by getting the 'facts' (what is going on) by systematic social research" (Glaser 1978:4).	"What is going on" was obtained by systematic analysis of data (Chs. 3–5). The discovered framework with concepts and their links were recognized by practitioners (Section 6.3 Study 3).
Relevance	"Grounded theory arrives at relevance, because it allows core problems and processes to emerge" (Glaser 1978:5).	The core category (problem) was allowed to emerge after entering the field and the processes (dynamics) were allowed to emerge from the further data.
Modifiability	"Through the constant comparative method, the theory can be constantly modified to fit and work with relevance. The theory does not force the data, the theory gets modified by it" (Glaser 1998:237).	Study 3's workshop (Section 6.3) slightly modified the framework to fit the language of the company in question.

In contrast to the verificational studies, in grounded theory there are no hypotheses of categories that are expected to be verified by the data. The discovered theory's categories thus fit almost automatically with the data as the researcher discovers the categories from the data itself. The fit is naturally affected by the skill of the researcher and how systematically he/she follows the key processes of grounded theory.

The measure of *work* requires that the discovered theory has explanation power over what happens in the area of study. The theory should also be able to predict what will happen in similar situations as well as interpret conceptually what is happening. The *relevance* can be detected if the practitioners recognize the core problems and processes in their profession from the theory. The problems and processes are conceptualized and organized in a way that gives the theory relevance, and practitioners can utilize it in their work. The *modifiability* means that the theory can be modified by any additional data. The theory is not intended to be fixed and to apply to all situations, but additional data can modify it. This ensures the continuous fit and relevance of the theory.

Randall and Mello (2012:873) suggest, regardless of the chosen grounded theory approach, the following quality criteria for grounded theory research: rigor, trustworthiness, contribution to practice and contribution to theory. In the specific criteria, they include suggestions from Glaserian, Straussian and Charmaz's approaches to grounded theory. The criteria and what has been done in this research to fulfil them are further elaborated in Section 7.1.

2.7. Summary

Chapter 2 introduced the grounded theory methodology in detail. In summary, the grounded theory method offers a rigorous, orderly guide to theory development (Glaser 1978:2) which is also understandable to practitioners due to findings that are grounded in their own experience. Among others, Randall and Mello (2012:876) promote the use of grounded theory in supply chain management research as "GT provides a pattern searching method that enables researchers to understand the underlying environmental and organizational structures and conditions that firms act within and upon".

In this chapter, the choice of Glaserian approach to grounded theory was established, and the elements of the grounded theory research process were discussed. Finally the criteria for estimation of the quality of grounded theory research were presented. The next chapters, 3 and 4, present the "storyline" of the analysis.

3 ENTERING THE FIELD – STUDY 1

Chapters 3 and 4 present the "storyline" of the data gathering and the analysis of data conducted: how the concepts and their interrelations developed towards a theoretical model via simultaneous data collection, coding, constant comparison, theoretical sampling and memoing. I follow Suddaby's (2006:637) guideline on making the process of data analysis, including coding techniques and category creation, apparent by providing illustrative examples of coding techniques and the evolution of conceptual categories in tables. The process steps of grounded theory are overlapping, and thus it creates a certain challenge for presenting the exact chronological development of the theory. For clarity, I divide the initial analysis process into two studies (Study 1 and Study 2) and five separate sections by the different companies that constitute the final sample (Appendix 1) and highlight the major insights that emerged with each.

The broad focus of this study on sustainable supply chain management was the topic of my previous studies as well as career. This can be likened to a "life cycle topic" mentioned by Glaser (1998:48) – for a researcher it is fruitful, and motivational, to invest the time required on a topic that is important in one's own life. The question then remained: What is the problem that practitioners are experiencing in this broadly defined area? The initial sampling was thus conducted by considering a company where I was likely to find interest in sustainable supply chain management initiatives with a scope of business of global scale. At the same time, there was a desire to understand and contribute to the Finnish businesses competitiveness and thus to limit the initial sampling to Finland-based companies. Due to the limited number of companies fulfilling the criteria, especially with the size and scope of operations, there are natural limitations in the sample. Purposive sampling was conducted, and a large Finnish multinational company who aspired to be a pioneer in sustainability was selected as the first company to study, further referred to as C1 (See Appendix 1 for a complete list of data sources).

After one purposively sampled company, theoretical sampling led to a search for more companies where sustainability of the supply chain could potentially be a source of risk and where other criteria that emerged from the data were met. For example, after the initial data gathering with C1, I identified a category of "distance from the end-customer", possibly explaining some of the reputational vs. supply risk misconceptions. This suggested to me it is worthy to search for companies with different positions in the supply chain and not only consumer brands but also those working more in the business-to-business environment. Still, in the sampling I sought to find companies which had supply chains reaching to developing countries to varying degrees. C1 data suggested that there may be more concerns in the environmental and ethical areas when operating in developing countries, and thus data from companies operating that way could highlight the company's strategic choices better as well as the ideas behind risk management. I limited the sampling to Finnish manufacturing companies with large enough operations to have managers dedicated specifically to sustainability.

I sought out the required background data in company documents such as annual reports and sustainability reports of potentially matching companies. The interviewees were theoretically sampled to represent both supply chain and sustainability organizations in order to obtain insights on the topic from slightly different parts of the organization. The hope was that these different views could shed light into the emerged risk ownership question. Risk ownership and risk silos came up as potential problems related to risk management in the interviews with C1.

Altogether five companies were in the final sample of studies 1 and 2 (see Appendix 1 for a complete list of companies). They are all in the top 20 of the Talouselämä 500 list of Finnish companies (Talouselämä 500 2012). The data gathering through company reports, videos and interviews occurred partially parallel to memoing, theoretical sampling and constant comparison, which took place throughout the process. The interviews were conversational, and they all started with a discussion of their particular organization covering the sourcing, supply chain management, risk management and sustainability functions. After the interviews with C1, risk as a topic was introduced briefly at the beginning of an interview to give only slight direction to the discussion. The interviewees were encouraged to voice any thoughts that came into their minds about the risks related to their supplier's environmental and social performance but also to supply risks in general as well as motivations and drivers of sustainability work in the different functions. In order to have a very open discussion, it was agreed that no direct quotes of the interviews would be used with names of interviewees or companies. Because of this, the stages of this study are not named after the companies, and all details that would hint as to a certain company were omitted from the final manuscript. The companies are referred to as C1, C2, C3, C4 and C5 in the order of data collected. As the interviewees were guaranteed anonymity, all quotes are labelled such as C1-Ii to stand for company 1, interview 1 (Appendix 1).The interviews were held in Finnish and all quotes are thus my own free translations to the English language. It is to be noted that in fact many concepts in the interviews came up in English as it is the working language of all the companies in the final sample and thus part of the jargon of the practitioners' every day work.

Sustainability reports, also often referred to as corporate responsibility reports, have been studied in the supply chain context before by, for example, Tate et al. (2010:19). Their analysis found that, in addition to institutional pressure, drivers of strategy development were various social, environmental and economic responsibilities upstream and downstream in supply chains based on industry, size and geographical location. The reports can also be seen as "barometers of an organization's attitudes" and "serve as a rich source of secondary data to understand better the companies' intentions, strategies and activities, as well as the results of corporate social and environmental responsibility both at the corporate and supply chain level" (Tate et al. 2010:20). Sustainability reports were used extensively in this research to understand how the companies saw their sustainability efforts and challenges in relation to the industry, environment, regulations and the overall values related to environmental and ethical matters. This was considered to have a significant impact on how the interviewed managers perceived sustainability risks in the supply chain.

Company reports and published video materials were also used as a source of information to understand the organizations and situations in which the interviewees operate. The company reports are coded as AR for annual report and SR for sustainability report; for example, C1SR refers to company C1's sustainability report. In all cases, the English versions of the company reports were downloaded to NVivo for analysis. The YouTube videos were coded as YT (e.g. C1YT) and they were all in English or had English subtitles and were downloaded to NVivo via NCapture software. The company reports and videos were used mostly as background information but were nonetheless coded in a fashion similar to the interviews. Towards the end of the study, I did not treat the codes exactly the same way as the codes from the interviews, and the codes were not mixed and compared together. The reason is that in this study I am interested in the perceptions of the practitioners – the interviewed managers – that are reflected to the company level, not so much in the public image that the company wants to put forth. However, in the cases of C1AR, C1SR and C1YT, I give examples of the

codes and incidents gathered to give an idea how the background data were gathered and analysed.

The data gathering required tolerating significant ambiguity as even after having set the research question many aspects were still open. When starting a new interview, I would not know where the discussion would lead me. I did study the company reports before the interview to assist in theoretical sampling and was thus aware of the overall business of the company and its focus in sustainability matters. From the previous interview and company report analysis, I had already created various codes that felt very significant but would turn out not to be so in the case of the next company. This confusing phase in between the interviews is made explicit in the next subchapters describing the cumulative gathering of an understanding of the topic. I use various tables to illustrate how the interviews build on each other, and I also present original quotes from the interviews to give examples of key points made that led to certain conceptual innovations which, again, are explained in more detail within the text that is a write-up of the memos from the research period in question. The quotes are not meant to be the "trail of evidence" as is customary to more positivistic studies or to offer "profound description" of the data as an enthnomethodologist would do.

Systematic coding proceeded consistent with the Glaserian approach of open, selective and later theoretical coding procedures. Open coding allowed me to generate codes freely while after the core category, "risks related to suppliers' environmental and social performance" emerged and the coding became selective, omitting themes outside of it. Categories were based on centrality, making sure they could explain variation and explain what emerged from the data. A fresh grounded theory researcher is potentially "unable to transcend the descriptive detail", as Holten (2010:26) states. My coding evolved during the process. In the beginning, many of the open codes were highly descriptive. There were many repeating codes, and overall there was an excess of codes. Altogether, 237 codes were generated. Re-coding and further analysis resulted in a considerably shorter list of 67 codes (Table 12) with a significantly higher level of abstraction than in the beginning. Holton (2010:26) claimed that for her, too, the earlier training in qualitative research methods resulted in similar early struggles. I present only the shorter list of 67 codes from the initial analysis round for the sake of clarity (Table 12).

3.1. Entering the Field, C1

The first interview (C1-Ii) with C1, a communications and information technology company, took place before there was any determined focus for the study. The question I constantly asked myself during the first interview was: "What is this a study about?" as advised by Glaser (1978). At that stage, the topic was still very vaguely defined, the intention being to study sustainability and supply chains from a new angle. The discussion of the first interview revolved around various supply chain and sustainability-related topics. The environmental and social incidents within the supply chain and the organizational actions before, during and after the incidents were discussed. The different organizational roles and "getting sourcing to take action" also came up.

Another interview, C1-Iii, was held with the same manager of C1 in order to ensure the relevance of the focus area that had formed for the study. The first interview, C1-Ii, had been very broad, and after coding and memoing, the focus had sharpened to the supply chain risk management related to supplier's environmental and social performance.

The discussion of the perceptions of risk management had been relatively short, and thus I wanted to have another opportunity to focus on it. During the second interview, C1-Iii, with the same person, the previous meeting's ideas were put on PowerPoint slides and discussed again. In this sense, the latter interview did not follow the traditional grounded theory interview process, but nevertheless I coded this interview the same way as the first and coming ones.

3.1.1. Interviews – C1

The first interview of the study, C1-Ii, covered sustainability and sourcing broadly. Interviewee C1-I is a director of sustainability in the sourcing function of company C1 and thus works closely and hands-on with both sustainability and sourcing organizations. Even though the discussion revolved around various topics, during the interview the term "risk" started to come up more and more. The interviewed manager C1-I seemed to perceive it as one of the "hot topics" of the organization at that time and also as some sort of a key to furthering the work in sustainability area. First, it was voiced in terms of "shock resistance" of the supply chain, as the interviewed manager put it:

> "Improving the supply chain's shock resistance is the key in the area of environment and ethics. It is now one of the focus areas of sourcing management".

The shock resistance in this instance specifically meant the supply chain's shock resistance towards environmental and social incidents. The interviewed manager stated that the right partners and the work done together with the suppliers in the area increased the shock resistance and the ability to recover from the incidents fast. I memoed the following about shock resistance after the interview: "The sourcing organization wants to improve the shock resistance of the supply chain, which means that even if they do have the risks of environmental or social events, despite good suppliers, they want to be better able to absorb these by having more robust supply chain risk management strategies. They want to use their own methods to combat sustainability risks that hurt their department and not necessarily the whole organization". In my coding, "Shock resistance" became an important property of the category "Mitigating risk" (See Table 4 for the complete coding after interviews C1-Ii and C1-Iii).

In addition to "auditing" and other more common topics in the category "Mitigating risks", I coded in vivo the property "fire fighting". The organization had a strong background of taking fast and broad action against any threats. The interviewed manager called this "fire fighting". The actions were often very effective, albeit they took an enormous amount of resources. Resources were naturally taken away from the more routine tasks. The interviewed manager C1-I said about "fire fighting":

> "There were numerous cases just over the past year that required extensive fire fighting resources from many parts of the organization, including sourcing. This cannot be a sustainable way to handle it".

The resources the manager referred to were from various departments of the organization, but the sourcing organization also had to deal with the supply consequences of the fires. They needed to ensure the availability of goods or services in a situation where the supply was at risk due to environmental or ethical incidents or concern with one of the suppliers. This took many of the sourcing resources away from their routine tasks. The interviewed manager perceived that so much fire fighting was

required due to lack of a thorough understanding of the risks and thus not enough preparedness to mitigate the risks.

When comparing the codes I had created from the data, I also came to think about the different risk categories. For sourcing, one of the important risks would be the supply risk caused by the "shock" in the supply chain, while the organization as a whole is more concerned with the reputational risk for the whole brand. Also, this particular company had a strong brand image, and it seemed a reason for the significant drive in the sustainability area. In my coding, the different risk categories fell under the category "Estimating risks" and the sub-category "Categorizing sustainability risks" as properties.

The risk quantification (coded as "Risk quantification") was seen as very important to receive buy-in for preventive actions from the executing part of organization.

> "Quantifying the risk is very important for finding buy-in for the cause [environmental and social performance improvement]. It is simple calculus to look back at the cases that have taken place. . . . We need to first understand the extent of risks related to suppliers' environmental or ethical incidents".

Quantification of risk was best achieved by studying past incidents. It was concluded that, by nature, the outcome of environmental and social incidents is difficult to measure, at least in terms of reputation risk. The incidents can vary significantly in their seriousness and the media coverage they receive. Why is it so important to quantify the risk to have sourcing take action? Is it not the reputation of the whole organization that should drive the action? These questions again led to the understanding that the supply and reputational risks should be dealt with slightly separately. I then memoed: "Reputational risk is often the driver for any environmental and social improvement project in a company or its supply chain. Are there other drivers for it? Making money from doing good? Being a good corporate citizen? How about supplies? Are they not endangered if there are stops in production, a need to change supplier quickly? Often the practitioner has a vague idea of the amount of risk associated with a supplier, whether in the reputational or supply area". In the supply area, the risks could be potentially measured best by understanding the consequences of the previous incidents. At this stage, I thought about the key drivers of action for sourcing in the area of environmental and social performance of the suppliers. I concluded it had something to do with the incentives and quantifiability of the risks. For this I needed further data to clarify the thinking.

The risk being managed in "silos" also came up in the discussion. The different parts of the organization were concerned over different risks. I coded "Risk silos" and memoed that they are born when the risks are managed within an organization separately in each department. The enterprise risk management systems do not integrate the risks, and thus there are many loose ends in the system. Why would this be the case with the risk related to the environmental and ethical performance of the suppliers? The conclusion I came to based on the interview was that sourcing is more concerned with the supply component of the risk, while the other parts of the organization are concerned with the reputational component.

Below, Table 3 offers examples of the initial codes and their indicators in the data. This is to reveal the somewhat fuzzy logic of conceptualizing what is happening in the data. I give these examples of each piece of data with C1. The complete list of codes from C1-Ii and C1-Iii is offered in Table 4.

Table 3 C1-Ii and C1-Iii Interviews: Examples of Coding and Indicators

CODE	MAIN INDICATOR IN THE INTERVIEW
Acknowledging risks	"Environmental and social misconduct incidents in the supply chain cause significant supply risks in addition to reputational risk to [C1]".
Categorizing risks	". . . supply risks in addition to reputational risks"
Analysing risk from historical data	"During 2011, many environmental and social incidents occurred in the supply chain. . ." "Analysing the risk mitigation/corrective action strategies used and identifying potential gaps"
Estimating supply risk	"Understanding the extent of risks related to suppliers' environmental and social performance"
Mitigating risk	". . . could have caused serious supply consequences without effective and fast mitigation by traditional supply chain risk management strategies and fire fighting"
Paying for mitigation	"However, there is cost in utilizing those strategies"
Focusing on 2 tiers of suppliers	"Supplier and supplier's supplier activities"
Fire fighting	"There were numerous cases just over the past year that required extensive fire fighting resources from many parts of the organization, including sourcing. This cannot be a sustainable way to handle it".
Shock resistance	"Providing recommendations to improve supply chain shock resistance while considering sourcing sustainability in conjunction with other supply chain risk management strategies"
Linking to strategy	"Linking suppliers' environmental and social development to supply chain risk management"

After the first interview, I was able to answer the question "What is this a study about?" The problem area was becoming clear: **supply and reputational risk management related to environmental and ethical performance of the supply base.** The interviewed organization had woken up to the reality that the environmental and ethical performance of the suppliers has a significant impact on the supply reliability. It also affects the workload of the supply chain management with "fire fighting" in the case of incidents in the supply base. Fire fighting was the predominant mode of operation and revealed that not all risks related to the environmental and social performance of suppliers were taken into account when creating supply chain strategies for specific categories. It was obvious that the supply chain should be built to be more shock resistant. There was a missing connection, a

grey area between the risk management, sustainability efforts and supply chain strategies and practices. The reasons for this grey area and the elements leading to it were the ones I started looking for.

In addition to the supply risks, reputational risk was also kept on the agenda. It was unclear to the organization, too, how these two risks types were affecting the management of risk, what the difference was and why would it be meaningful. From further data gathering, I wanted to understand more of the drivers and trusted that the answer would be clarified from the variability offered by the varying company settings I was about to study. The idea of supply organization and sustainability operating in two different modalities was also often voiced. Were there "risk silos" within the organization preventing the corrective or mitigating actions from being implemented? Were there blind spots in operations due to different functions not sharing joint understanding of risks related to the environmental and social performance of suppliers?

After the second interview with C1-Iii it was clear that in the C1 organization the reputational risk and supply risk were dealt with slightly separately and that the supply risk had definitely caught the attention of the sourcing organization. As the first discussion was so broad-based, there were other interesting topics coded and noted down as well, for example, related to the auditing practices of the company or the certain environmental and social themes in the supply base that would have served just as well for the topic of the study. They were in this initial phase also memoed thoroughly. These memos were left out based on a subjective decision to turn the focus on the risk area. After this decision, the data were constantly compared selectively. I left the "stray" thoughts out of this thesis, but they can serve as a base for further studies on sustainable supply chain management. The found focus area also directed the rest of the interviews and guided the coding. Naturally, there were "stray" topics also discussed in the rest of the interviews and found in the reports and videos utilized, but they were left out of the analysis if they were found not to relate to the area during coding. Table 4 below presents the complete list of codes and their relationships after interviews C1-Ii and C1-Iii.

Table 4 Coding after Interviews C1-Ii and C1-Iii

C1-II & C1-III
Estimating risk
Acknowledging risks
Analysing from historical data
Past incidents
Distance from end-consumer
Risk silos
Categorizing sustainability risks
Reputational risk
Not meeting customer requirements
Supplier's misconduct
Working against values

Supply risk
Availability of supply at risk
Cost drivers, supplier selection and incidents
Fire fighting eating up resources
Focusing on 2 tiers of supply
Organizational roles
Risk quantification
Linking to strategy
Getting buy-in
Mitigating risk
Effectiveness of actions
Fire fighting
Getting sourcing to take action
Being prepared
Shock resistance
Alternatives to supply
Geographically dispersed supply base
Supplier selection criteria
Auditing

Beyond the initial interview, the data collection was not determined beforehand. In grounded theory research, the emergent theory dictates the direction to go with data collection. The preliminary organizing categories after the initial interviews C1-Ii and C1-Iii led to theoretically sampling in order to continue the theory development as it emerged. The preliminary organizing categories needed background data on the company in question to understand the environment in which the interviewed manager operated. The organizational set-up naturally had already been discussed in interview C1-Ii, but in order to understand the size of the business and the geographical reach as well as the company's key concerns at the top level of sustainability, it was important to gather additional data. I was especially interested in finding out how the company sees the reputational risks as well as the sources of likely supply risks and what the factors in the set-up of the company are that make these key issues important. I turned to the most recent, public company reports and video material for the background data. The data from the company reports (C1AR and C1SR) and a video (C1YT) were coded and compared to the codes and incidents in the interviews and between the sources.

3.1.2. Company Reports and Video – C1

After the interviews C1-Ii and C1-Iii, I analysed C1 company reports C1AR and C1SR and a YouTube video, C1YT (Appendix 1). I wanted to find out if there were new concerns, other than those in the interviews, arising from the data and if the reports supported the core categories identified in the interviews. The annual report included

data in which it may be difficult to find out the actual problems the practitioners had encountered. It was written for the purposes of giving out information to the shareholders regarding the commercial success of the company, future prospects and risks. I argue that the annual report can reveal important background information regarding the company as well as give out hints of the problems the company, and thus its managers, may have to face in their daily operations.

When coding the annual report of C1, I focused on the background information of the company's geographic coverage and its overall financial status as well as topical issues regarding the sustainability of the company and sourcing operations, as suggested by theoretical sampling after interviews C1-Ii and C1-Iii. At their best, these codes serve as a systematic background analysis of the company in question, and only secondarily contribute to the emerging theory; thus, I did not mix these codes with the ones from interviews.

Table 5 below shows examples of codes for the report as well as the key indicator for each code.

Table 5 C1 Annual Report: Examples of Coding and Indicators

SIGNIFICANT CODES	KEY INDICATOR FOR THE CODE IN THE DATA
Selling mostly in developing countries	(a table showing the sales distribution and a table showing the top 10 markets)
Sales declining	"Net sales and profitability were negatively affected . . .", (tables showing sales development)
Personnel mostly in developing countries	(a table showing the personnel top 10 countries with percentages)
Aspiring beyond compliance	". . .our goals go beyond compliance".
Aspiring to lead	"[C1] strives to be leader in sustainability".
Preventing risks	"[C1's] overall risk management concept is based on visibility of the key risks preventing [C1] from reaching its business objectives rather than solely focusing on eliminating risks".
Owning the risks	"One of the main principles is that the business, function or category owner is also the risk owner, but it is everyone's responsibility at [C1] to identify risks, which prevent [C1] to reach its objectives".
Acknowledging the supply risks	"If the limited number of suppliers we depend on fail to deliver sufficient quantities of fully functional products, components, sub-assemblies, software and services on favourable terms and in compliance with our supplier requirements, our ability to deliver our [x] products profitably and in line with quality requirements and on time could be materially

	adversely affected".
Acknowledging risk with emerging markets	"Our sales derived from, and manufacturing facilities and assets located in, emerging market countries may be materially adversely affected by economic, regulatory, political or other developments in those countries or by other countries imposing regulations against imports to such countries".
Acknowledging the reputational risk	"Any actual or even alleged defects or other quality, safety and security issues in our products. . .could have a material adverse effect on our sales, results of operations, reputation and the value of the [C1] brand".

The coding and subsequent memoing drew a picture of C1 as a truly global company, despite its roots and headquarters in Finland. The vast majority of its sales as well as personnel are located in emerging markets (as coded "Sales/Personnel mostly in developing countries"). The company "Aspires to lead" – that is, has high aspirations on sustainability – and they acknowledge the risks of operations, especially in developing countries. The ownership of risk is at least officially distributed to each function, but there is overall watch over the risks. Under the "Acknowledging risk" category, I coded various properties that found counterparts also in the interview data of C1: risk with emerging markets, reputation risk and supply risk. The company highlighted these risks in the annual report, so they tell about the business focus of the whole company, not just the interviewed manager.

As the annual report is also a marketing document for the company, the sustainability-related issues have been put forth. The leadership in sustainability and going beyond regulation ("Aspiring beyond compliance") are at the core of this company's message. The sourcing as such is only mentioned among the risk factors, and one can read between the lines in, for example, the risk management ownership part that the proper monitoring of, for example, supplier requirements is valid. In the dedicated sustainability report, there was more information on the sourcing's role.

In the sustainability report C1SR, I looked for the core themes arising in the sustainability area as well as for cooperation and collaboration with the sourcing function. What seems to be the key concern? Does the risk management drive the operations as significantly as emerged from the first interviews?

The fact that a company had already created a sustainability report shows that there is a certain focus on sustainability in the company. C1 obviously has a focus on the topic as there are resources allocated to work on a document and there are events to cover the sustainability area. See Table 6 for examples of coding and indicators in the data.

Table 6 C1 Sustainability Report: Examples of Coding and Indicators

SIGNIFICANT CODES	KEY INDICATOR FOR THE CODE IN THE DATA
Enabling the positive	"For [C1], this means maximizing the positive, enabling effect of our [x] technology on people and the planet while minimizing the possible negative impact of our activities".
Minimizing the negative	"For [C1], this means maximizing the positive, enabling effect of our [x] technology on people and the planet while minimizing the possible negative impact of our activities".
Embedding sustainability	"Responsible environmental and social practices are integrated into everything we do. From the devices we build and the suppliers we choose to our [x] solutions that enhance people's education, livelihoods and health". "Sustainability issues are reviewed regularly at all levels, up to the highest decision-making bodies of the company". ". . . sustainability is part of everyone's business at [C1]. It needs to be in everything we do".
Leading and being proactive	"[C1] has published corporate responsibility reports annually since 2002, and we've reported our environmental activities continually since 1999". Ranking data of various ranking organizations –C1 ranked highly in many.
Involving the suppliers	"[C1] also encourages its suppliers to report their sustainability performance". "We support our suppliers in striving towards such lasting improvements by helping them analyse the adequacy of their corrective actions, offering benchmarking with our internal human resources practices and consultancy with our in-house subject matter experts as necessary".
Reaching out globally	Various examples given of sustainability-related projects in especially developing countries all over the world (e.g. South Africa, Kenya, India).
Directing the suppliers	"We are focused on honing the direction we give our suppliers and measuring their performance, ensuring that they closely follow our comprehensive set of [C1] Supplier Requirements for environmental and social performance".
Working on transparency in long supply chains	"Our challenge is that the supply chain is long and complex – for example, there are typically four to eight supplier layers between [x] and [raw material] activities – and active

	work to increase transparency is needed in all these layers".
Systemizing sustainability	Long lists of policies, management systems and targets related to sustainability. Supplier audit procedures.
Anticipating risks	Sustainability risks listed on the report varying from non-conformance to supplier requirements to labour unrest.
Worrying about losing reputation	Risk list item: "Purchasing boycotts, public harm to our reputation and [C1] brand".
Addressing fundamental needs	"We provide affordable services to both emerging and developed markets. What's more, we address the fundamental needs of [x], affordability and relevance for a broad range of consumer groups".
Listening to stakeholders	"Our approach is to be transparent and stakeholder-focused and to apply trusting and collaborative business approaches in order to drive progress for us as a business".
Updating requirements	"[C1] Supplier Requirements are updated on a regular basis. In 2011, we updated the requirements and put some more emphasis on the environment, labour conditions, occupational health and safety, and ethics . . ."

In the whole report, the ideas of proactivity and leadership in sustainability are emphasized and coded as "Leading and being proactive". The company wants to show how it leverages its global reach in doing good in the world or "Enabling the positive" as coded. There is a lot of balancing between "doing good" and minimizing the negative effects of the manufacturing of the product. The report is also intended to show the embedded nature of sustainability in the whole organization and all its operations.

The category "Systemizing sustainability" emerged from various mentions of the process-oriented approach to handling sustainability issues in the company. The processes and procedures were meticulously documented and matched well with the categories "Estimating risk" and "Mitigating risk" identified in the interviews.

The data on company C1 was completed with a YouTube video with the CEO and VP of Sustainability telling about the progress and challenges of C1 with sustainability. The fact that the company CEO cares to go public with the sustainability message of the company and that there is a VP of Sustainability in the company to me represented "Escalating importance of sustainability" within the company along the message that even though the financial situation is declining, sustainability remains important to the company.

The video did not bring much new insight but rather saturated the categories from the reports regarding company C1. Table 7 summarizes the findings from the video.

Table 7 C1 YouTube Video: Examples of Coding and Indicators

SIGNIFICANT CODES	KEY INDICATOR FOR THE CODE IN THE DATA
Escalating importance of sustainability	CEO commenting on sustainability" ". . .sustainability continues to be important".
Embedding sustainability	"It's at the heart of [C1]".
Enabling the positive	Examples of socio-economical improvements through C1 products.
Systemizing sustainability	". . .our ambitious sustainability targets".
Highlighting external approval	"as well as maintain our leading position in many external sustainability rankings".
Directing the suppliers	"The focus is on our own operations. . .and in the value chain".
Impact of making the product vs. impact of the product	"Whether it is on the impact that we have in making the product, or the impact of the product itself on people's lives, all of that constitutes sustainability. . .".

3.2. Summary

In essence, the "Entering the field" phase, Study 1, answered the question: "What is this a study about?" and went slightly beyond it with the creation of preliminary coding categories.

Initial coding resulted in various codes, which were input into the NVivo analysis software as the first codes (or "nodes" as the software calls them) and then memoed. Joint coding and analysis took place as is the purpose of constant comparative method (Glaser and Strauss 1967:102). I also compared an incident, before further coding, with the other previously coded in the same category. I often stopped coding and wrote a memo of the ideas that came into my mind of the code and the incidents coded in it. I used NVivo to merely replace the paper-based method introduced in the grounded theory guides and thus speed up the handling of data. However, I did not use the more advanced functionalities such as the content analysis tools or other statistical tools offered by the software to avoid mixing other methods into the grounded theory approach.

The result of the "Entering the field" phase was also a set of research questions for further data collection presented in Section 1.1.

1) What challenges are perceived in managing supplier sustainability risk?

4) How is the ownership of supplier sustainability risk distributed within an organization?

5) What explains the different approaches to sustainable supply chain management in manufacturing companies with global supply chains?

The research questions in the case of this study are treated as guidelines for the rest of the interviews (Chapter 4), which should not limit the discovery of significant themes outside of their scope, although the themes should relate to the discovered focus area of sustainability risk management in the supply chain. Next, further data collection is discussed in chronological order and by company to show how the coding categories developed, where the properties of those categories were discovered and how my understanding of the topic cumulated throughout the data gathering and analysis process. In the case of C1, the company reports were analysed only after the interviews, while in Study 2 in the case of rest of the companies (C2, C3, C4 and C5), the company reports were coded before the interviews. This is also shown in the order the data are represented in this chapter. I also gave examples of the coding of the data in the form of indicators from C1's interview, company reports and video. For the sake of clarity, I seize to give examples for the remaining company data and rather follow the grounded theory practice of presenting the memos written during the analysis. However, I include the development of codes from one interview to another.

After constantly comparing the codes from different sources on C1, I started the process of theoretical sampling based on the following "criteria":

- Companies with different "distance from end-consumer" – that is, the position in the supply chain.

- Organizations with significant amount of operations, especially sourcing, in developing countries.

The categories and codes identified in this stage would be subject to changes later in the process. The preliminary organizing categories at this stage were: "Estimating the supply risk", "Categorizing sustainability risk", "Linking to strategy" and "Mitigating risks" which delimited the focus of the upcoming data collection.

4 CODING AND DEVELOPING THE STORYLINE – STUDY 2

This chapter presents the storyline of the analysis after entering the field. The data gathering is presented in chronological order by the theoretically sampled companies (C2–C5).

4.1. New Insights – C2

Company C2 was selected via theoretical sampling. The focus area of the study called for Finland-based companies that would have supply chains extending to developing countries, and from the first interview I had coded a category "distance from end-consumer" as one possible determining factor for the activity level in the environmental and social areas. Thus, I wanted to have that variability in this dimension with the companies I interviewed. Next, I introduce the company via analysis of the background data of company reports and a video.

4.1.1. Company Reports and Video – C2

Company C2 is a Finland-based multinational having operations all over the world. Company C2 is in the packaging industry. It manufactures and sells products to industrial customers and is thus not as end-consumer oriented as C1. C2 is also slightly smaller and has fewer resources than C1 to meet the environmental and social challenges in the supply chain.

Company C2's annual report (C2AR) revealed a strong presence in developing countries both from the manufacturing and sourcing sides. There was significantly less emphasis on sustainability topics in C2AR than in C1AR. In fact, sustainability was hardly mentioned in the report except for environmental management, and all in all the focus was on company C2's own production, not that of the supply chain. Based on the report, C2 is "Holding strong position in emerging markets", revealing it is and remains a key market for the company.

The Sustainability Report of C2 (C2SR) was published a year prior to the annual report (C2AR) as the company had not adopted a practice of publishing such report on yearly basis. The report revealed the importance of customer requirements as customers are increasingly asking for environmentally friendly products and industry collaboration. An enforced supplier code of conduct was mentioned as the key tool for managing the supply base. Because of the industry, the life cycle aspect of sustainability was one of the key considerations. The risks related to sustainability and sourcing are handled centrally and thus, at least on the outset, there seems to be no "risk silos" process-wise in this company.

The YouTube video (C2YT) reveals more about C2's industry than about the company's own practices. However, it gave important insight into the customer base of the company as well as important aspects in sustainability overall in the industry. Between the lines, one can read that the C2's industry suffers from a rather poor image in terms of the environment. The company wants to emphasize the recycling of their products, the end-of-life procedures and new, recycled or otherwise environmentally friendly materials. The benefits of overall sustainability are well understood in the company.

4.1.2. Interview – C2

The interviewed manager (C2-I) was responsible for the sustainability of company C2, and worked closely with the production network as well as the sourcing and sales functions on sustainability issues. The interview supported some of the ideas coming from the previous interviews with C1 but also gave many new insights. The focus of this interview was initially on the risk management aspects, and even though the discussion led to other areas, the data were selectively coded to reveal relevant perceptions of the risks related to the environmental and social performance of the suppliers.

The concept of "Profiling suppliers" was introduced by the interviewed manager. It became clear that C2's way of managing environmental and social topics had a lot to do with their suppliers' profiles. The interviewed manager C2-I said:

> "Our first interface is in principle a very big company, whose ethical standards are at a very high level. The size and exposure has led to a situation where their ethical standard is high. . . . The profile, which is the size and awareness of our suppliers, makes it possible that not so much needs to be taken into account. Our ability to present criteria to the suppliers is limited due to the negotiation situation where [our company] is much smaller than those of the suppliers. We cannot say to the giants that if you do not follow these rules we do not do business – the supplier will not really care and then there is no business".

At this stage, I compared the two interviewed companies and the codes and memos I had written in each case to see where the supplier profiles had an effect on and thought about those items in relation to the differences in the typical supplier profile of the company in question. As properties of "Profiling suppliers", I coded the size, negotiation power, physical location, supplier's values and awareness of environmental and ethical issues. The interviewed managers perceived these as the elements having direct effect on the sustainability of the supply chain, but also leaving room to manoeuvre in these issues. The company's industry has a significant impact on who the predominant suppliers are, depending of course on the fragmentation of the industry. The negotiation power topic was significant in the sense that it can have an effect on the actions taken to mitigate any perceived risks from the supply chain. If a company does not have the needed negotiation power to make the supplier improve its environmental and social performance, it can only rely on a solid supplier selection process. How much a company can in general drive the sustainable supply chain management is another topic.

The geographical distance as a supplier profile element was highlighted by the interviewed manager. The geographical distance from suppliers had been one of the criteria for the theoretical sampling of companies. In that sense, it is not surprising the topic came up in the interviews as well. The manager C2-I drew a direct correlation between the amount of risk and sourcing from developing countries:

> "Risk correlates with the amount of sourcing from developing countries. If the supply base is extended, it results in smaller suppliers and the risk would also increase".

The distance, geographically and culturally, was seen as key to the amount of risk. Developing countries were mentioned specifically, implying differences in values and potentially the risk being perceived in the "unknown". The particular sourcing strategies leading to sourcing from developing countries was not discussed in detail in this interview but would be brought up in further interviews with other companies. Thus, later I concluded that geographical distance is a property of both "Profiling suppliers" and "Shock resistance". The interviewed manager also pointed out the size of the supplier correlating directly with the amount of risk: the smaller the supplier, the

bigger the risk. This could be explained by the idea that if there are a number of small suppliers instead of one big supplier, the managerial task is bigger, and thus there is less time and fewer resources to focus on the suppliers' environmental and social performance. Also, from the manager's comments it could be understood that the manager perceived truly large companies to be in principle more sustainable than the small ones. I memoed that he may have considered them as having more pressure from the media as well as having more resources and thus being active in the areas of the environment and ethics.

Supplier selection was discussed for the first time with the manager from C2 in relation to the environmental and social performance. The company did not have a clear set of criteria in this area, but the topic had a clear influence in selecting new suppliers for the supplier portfolio. The manager called it "negative criteria".

> "Environmental topics have not positively affected existing supplier relationships but have negatively affected certain potential suppliers' selection which do not fulfil the criteria. The risk associated with certain suppliers is not allowed to "pollute" the whole supply. . . . If we used any [not environmentally sound suppliers], our argument would be taken away and we could not bring forth the strengths of the rest of our suppliers".

I concluded from this and the previous interviews that supplier selection is one of the first sourcing tools to influence the "Shock resistance" of the supply base – "to have it right from the start and not retrofit better practices later", as the C1 manager C1-I put it. "Sourcing practices" in general must have a significant influence on the perceived amount of risk carried and risk mitigation, and I thus added that as a category under "Mitigating risk". In the selection of suppliers, the "Environmental and social performance" topic can be weighted differently by the company, but at a minimum it can have a slightly positive or negative influence on the selection. If it was not a clear criterion, then at least it can be encouraging or discouraging in terms of selecting a certain supplier. The interviewed manager saw this topic from the point of view of the customer requirement. The sales team could not use the environmental and social argument if there was but one noncompliant supplier in the supply base. "Customer requirements" were added as a code but needed further insights from coming interviews to see if it was significant for the topic.

The environmental and social performance-related risks were seen as any other supply chain risk when it comes to mitigation strategies on the top level. The term "all eggs in the same basket" was used in both the C1 and C2 interviews. That describes the situation where a supply of a certain component or raw material was dependent on only one supplier, and there were no alternative suppliers. That was described as a "normal supply chain strategy" – not specifically related to environmental or ethical topics, as the interviewed manager of C2 said:

> "None of the sites has all eggs in the same basket – normal supply chain strategies are used".

I concluded that the "Supply chain strategies" chosen for other reasons than purposively to mitigate this specific risk category also aid the environmental and social shock resistance of the company. Some supply chain strategy decisions on a broad level can be influenced by environmental and social topics if they are at a high enough priority level for the supply chain organization.

The discussion also dealt with the different drivers for engaging in environmental or social actions. The interviewed manager perceived that labour-intensive businesses would have more activities related to the social side of processes, and the environment

would be more of a concern in the more industrial processes. The interviewed manager compared their more industrial product to a branded labour-intensive product:

> "[our product] is not branded, but if compared to a T-shirt, where the whole sales of the shirt are based on that it's ethically produced, brand value is included. Social risk is more important there, while environmental risks are more important in production-oriented companies".

The interviewed manager actually voiced two important insights: the distance from the consumer and the labour-intensiveness of production. I had already previously coded "Distance from end-consumer" as a potential determining factor for activity levels in the environmental and social areas, and this interview supported that thinking. That code had also guided the theoretical sampling of companies. The "Labour intensity" of production, on the other hand, was an interesting insight and needed some further comparison with codes from other interviews to find out whether it was important in this context or not. In essence, the manager perceived separate needs to engage in environmental and social sustainability actions.

The enterprise risk management (ERM) system, was discussed broadly. The manager C2-I perceived that the process itself directs the attention with a certain logic:

> "Only the items that get a high enough score get on the list".

> "Identification of the risks is the key. [Environmental and social topics] often have very low assumed probability. There is an innate reactive mode in the ERM . . . it is difficult to get the benchmark – what could be the effect? Quantifying the effect is difficult but necessary".

Whether the environmental or social risks are identified seems to depend on the collective perception of those using the system. When comparing the codes from this and previous interviews, I concluded that the importance of correctly quantifying the risks and using the company-wide risk management systems accordingly also ensure better risk mitigation in this area. "ERM" was added as a property under "Acknowledging risk". The quantification of environmental and social risks is often very difficult, at least if the organization has not experienced a significant incident before. However, the impact of one incident can potentially be very big. The individual perceptions of those inserting the data into the system also have a significant impact on the results. Even if the organization had previously experienced incidents in the environmental and social areas in the supply chain, the manager filling out the forms for his/her unit may not have heard of them and thus has no reference point.

The "risk silo" code did not receive any support from the interview with C2. The interviewed manager perceived that the enterprise risk management system integrated the risks sufficiently and that there was open discussion between functions. I compared many of the codes and memos about both companies' background data (C1AR, C1SR, C2AR, C2SR) to understand the difference but could not at this stage pinpoint what the reason for differing perceptions could be other than the sheer size difference of the businesses and the individual perception differences.

Table 8 below gives an overview of the changes in the coding after the interview with C2's sustainability manager, C2-I. The insights from this interview supported, altered and added new ideas to the data and conclusions from the previous interviews with C1. There had been a three-month time gap between the last C1 interview and this interview with C2-I. The time gap allowed maturation of the previous ideas and formulation of "What is this a study about?" before conducting the interview with the second company. Despite the preparedness, this discussion revealed very new avenues

compared to that with the previous company and increased curiosity for discovering insights from companies with varied set-ups.

Table 8 Coding Development from C1 to C2

C1-II & C1-III	C2-I
Estimating risk	Estimating risk
Acknowledging risks	Acknowledging risks
Analysing from historical data	Analysing from historical data
Past incidents	Past incidents
Distance from end-consumer	Distance from end-consumer
	ERM
	Labour intensity
Risk silos	Risk silos
Categorizing sustainability risks	Categorizing sustainability risks
Reputational risk	Reputational risk
Not meeting customer requirements	Not meeting customer requirements
Supplier's misconduct	Supplier's misconduct
Working against values	Working against values
Supply risk	Supply risk
Availability of supply at risk	Availability of supply at risk
Cost drivers, supplier selection and incidents	Cost drivers, supplier selection and incidents
Fire fighting eating up resources	Fire fighting eating up resources
Focusing on 2 tiers of supply	Focusing on 2 tiers of supply
Organizational roles	Organizational roles
Risk quantification	Risk quantification
Linking to strategy	Linking to strategy
Getting buy-in	Getting buy-in
	Supply chain strategies
Mitigating risk	Mitigating risk
Effectiveness of actions	Effectiveness of actions
Fire fighting	Shock resistance
Getting sourcing to take action	Alternatives to supply
Being prepared	Being prepared
Shock resistance	Geographically dispersed supply base
Alternatives to supply	Supplier selection criteria
Geographically dispersed supply base	Customer requirements
Supplier selection criteria	Environmental and social performance
	Negative criteria
	Sourcing practices
Auditing	Auditing
	Fire fighting
	Getting sourcing to take action
Paying for mitigation	Paying for mitigation

Resourcing	Resourcing
	Profiling suppliers
	Awareness of environment and ethics
	Long-term suppliers
	Negotiation power
	Physical location
	Size of supplier
	Supplier's values

4.2. Supporting Perceptions – C3

Company C3, a multinational providing technologies and services for the metal and mineral processing industries, has a similar profile to that of C2 in the sense of not being a brand company but rather selling to industrial customers. This position compared to end-consumers again provides a good comparison to company C1, a true consumer brand. C3 has significant operations in developing countries and a focus on sustainability at its core. The interviewed manager, C3-I, works in the sourcing function, giving another angle compared to previous two interviewees who were more focused on sustainability.

4.2.1. Company Reports and Video – C3

Sustainability is at the core of C3's business, in their "environmentally friendly product promise". They offer a sustainable alternative to otherwise highly polluting technologies. As with C1, C3 also talked about sustainability's central role in the corporation and that corporate responsibility is embedded into the company's culture.

C3AR revealed the company's sales and personnel distribution to different regions – approximately one-third in developing countries. At the time of writing the report, the company was experiencing significant sales growth (40% year-on-year). Sales in emerging markets, such as in Africa, were growing rapidly. The company's sourcing organization is global and project-based. According to the report, the company has "thousands of suppliers", and the company is making arrangements to further global sourcing agreements and thus centralize sourcing even more. "Strong focus on sustainability" is mentioned countless times and, in a sense, the company is at the heart of the utilization of natural resources.

2011 was the first year C3 published a sustainability report (C3SR) and had put significant effort into the content. C3 identified a "sustainability megatrend" in the industry in which they operate, meaning it can be seen in both their customers and suppliers. They state that much of the work done in sustainability at C3 has been due to customer requirements and that in sustainability, the "biggest impact is through customers". At the time of writing the sustainability report C3SR, the supply chain was a core development area in terms of sustainability.

C3's YouTube video (C3YT) on sustainability features the company's CEO, which shows the escalated importance of sustainability. Also in the video, sustainability's role as the

core of the company, its products and its success is highlighted strongly. The product relies on sustainability, but for rest of the operations, sustainability is being built in later on. I deduced that C3's marketing is very sustainability driven, not from a reputational risk perspective, but from a pure sales pitch perspective. It seems that sustainability has started to permeate the organization more profoundly as it is currently also seen as a core value for C3.

4.2.2. Interview – C3

The interview with C3-I was held on the same day as with C2-I. Both companies serve industrial customers, but the first company's interest in sustainability is driven from the products' potentially adverse effects on environment, while the latter's product benefits are specifically in sustainability. With interviewee C2-I, the perspective was that of a sustainability director, while interviewee C3-I worked at the sourcing function. Company C3 had internal interests in environmental issues through the company's products and the sales argument for environmental friendliness. Their supply base extends to developing countries, and the supply chain strategy had experienced a change towards increased low cost country sourcing. The interviewed manager was acutely aware of the topic of this study as there had recently been incidents where environmental or social issues had caused delays or stops in supplies. One of the differences between C2's organization and C3's organization was more project-oriented sourcing; however, other than that, the sourcing resembled that of C2. The interviewed manager C3-I was responsible for the supply side of business. This interview yielded many supporting perceptions to the previously identified codes and also gave new ideas to retain for comparison with the data from previous and further interviews.

The discussion started from the elements the manager C3-I perceived as increasing the risk profile of the supply chain. C3-I named geographical distance as one of the key elements that increase environmental and social risks in the supply chain. The interviewed manager perceived local sourcing as practically risk-free in this area, unless the suppliers themselves started sourcing from, for example, China and thus the second- and n^{th}-tier suppliers would be geographically further away.

> "We had a very local sourcing previously: purchasing a lot of materials from Finland to be assembled abroad. We had a long history with known suppliers, long-term relationships. Some of the suppliers may have opened production in China without [us] knowing about it – it's very likely that this kind of risk did exist".

The other tiers of the supply chain were also discussed in C1's interview. Managers from both companies C1 and C3 saw them as difficult to monitor and manage and also as a significant source of risk. Even if at a certain point in time the supplier chain is known up to certain levels of tiers, the first tier of suppliers can make decisions which can lead to increased risk level without the buying company knowing about it. To C3, the known suppliers and long-term relationships had given a sense of security previously. I concluded that the sourcing strategies of long-term supplier relationships and local sourcing serve as risk mitigation tools for a company in the environmental and social areas as well, although it has not been the main driver for sourcing strategy decisions. Company C3 had recently turned from, in principle, local sourcing towards true global sourcing.

> "So far the conservative operation mode has saved the organization from the biggest risks in this area. Now we're moving towards real global sourcing and venturing out. Now the risks may increase significantly".

The interviewed manager C3-I had been paying attention to the current trend in the supply chain organization and was clearly concerned about the change and the risks perceived to increase, especially in the environmental and social areas. The supplier profiles had also experienced a change lately.

> "There are both big and small companies in our supply base. Quite a big portion of programs' total value comes from very locally from small players. Lately, subcontracting is done in China. It has started now due to increasingly smaller companies doing it, too".

The small players were seen as a strength by this manager, possibly due to the better negotiation position towards them. This contrasts with C2-I's interview, where the big players were perceived as having higher aspiration levels on environmental and social issues than small companies. I concluded that in any case, the relative size of the suppliers, the supplier profile in general, is seen as a determining factor for the amount of risk involved in the business relationship when it comes to environmental and social performance. C3's manager, C3-I, saw the whole risk as becoming clearly bigger in the case of the geographical distance of the supplies increasing, and the manager also saw the controlling of suppliers in this area as becoming an issue.

> "[The environmental and social topics] Become very important when widening the supply base to, for example, India. We cannot afford to go and audit".

Auditing as a tool for control and monitoring was mentioned in many of the interviews. It seems to be considered as one of the key tools of sourcing in the environmental and social areas. I could not find any significant properties for auditing. I connected it with "sourcing practices" in general, having an impact on the "risk mitigation".

I memoed after the first interviews with C1-Ii about the "fear factor". What would increase the fear factor related to a supplier? This interview also shed light on this: unknown supplier, unknown market, different unmanageable working conditions, distance and control issues seem to increase the fear factor.

> "Unknown suppliers are the key risk. When approaching true global supply, the risks increase".

Certain suppliers in the case of C2 were also seen through a fear factor perspective in the supplier selection situation; that is, the company was afraid the fear factor of a certain supplier would "pollute" the supply base and then make it impossible to use the environmentally friendly argument in sales. I concluded the fear factor of a supplier can be one of the supplier selection criteria, whether implicitly or explicitly and coded "Fear factor" under "Supplier selection".

In the case of C3, the supply risks of environmental and social performance of the suppliers were seen as even bigger risks than the reputational risk. The driver for engaging in improvement actions regarding environmental and social performance was seen to be the supply risk. The interviewed manager C3-I saw the "softer" actions of reporting environmental figures, etc. as a marketing-driven exercise, not so much a risk management-related topic.

> "Supply risk would be a bigger driver than reputational risk. Calculating pollution, etc. is then more of a marketing-driven thing".

This realization made me compare the codes and memos from the previous two interviews and conclude that there is a difference in how big the reputational vs. supply component of the supplier sustainability risk is. That would seem to depend on the position in the supply chain. I thus coded "Position in the supply chain" under

"Categorizing sustainability risks". Companies who are selling to an industrial customer may perceive the reputational and supply components of supplier sustainability risk to be equal, or the supply risk even higher. On the other hand, companies who are closer to the end-consumer may experience the reputational risk component as more pressing. This conclusion needed further data for comparison purposes.

In addition to the above, the reputational risk was, in this company's (C3) case, also perceived as the customer's risk. It was not so clear from which direction the pressure to improve environmental or social performance was coming from within the supply chain due to complex relationships between the companies.

> "Image risk comes from [our customer industry]. We provide goods for them and the media is so interested in [that] industry. The chain is interesting: We purchase [goods] from the industry and then again sell to the same industry. There are quite a few relationships where the buying company is also the selling company".

An important insight to be gleaned from this is that the pressure to improve environmental or social performance in a company can also come from the supplier's direction. Would a supplier refuse to sell to a customer whose environmental and social performance does not fulfil their standards? In which industries is this type of behaviour most prominent? More data are needed to understand this better, and it would deserve to be the focus of another study. To this study it may be a side-track, but I kept an open mind in the coming interviews to identify further properties for the codes "Reputational risk" and "Supply risk".

As company C3's supply chain strategy had over recent years changed to include more distant suppliers, the drivers of the change became a topic of the interview. The cost was seen as the only driver for extending the supply chain in the first place, especially to Asia. As the interviewed manager put it:

> "Supply chain extension to Asia is driven by cost and does not consider the sustainability risks".

The cost-driven search for competitive advantage was also referred to as low cost country sourcing (LCCS) in the interview. The manager perceived that, in those decisions, not all risk categories are taken into account, including the sustainability risks. I concluded that the key focus areas of sourcing must drive their actions and sometimes overrule other areas of interest such as environmental and social considerations. I felt this was an interesting insight about the supply chain strategies which needed still further data from coming interviews to compare with.

C3 had recently experienced a risk realizing in the supplier's social performance area. There had been a strike related to a payment topic, which had had direct consequences on the supply. Thus, the interviewed manager was acutely aware of the supply risks deriving from the environmental and social areas and was keen to develop the supply chain further in this area. In C3 there was very little organizational cross-functional work and collaboration done to mitigate these risks, however. For example, the sustainability organization had been mostly interested in the environmental aspects of the company's own products. This to me added to the previous insights of the division of reputational aspects from the supply risk aspects. I thus changed the "Risk silos" property from the category "Acknowledging risks" to "Categorizing sustainability risks". Overall, the interviewed manager perceived that for this company, the business effect of sustainability was still rather small, and thus it was gaining less weighting in business decisions. The manager also mentioned that he hoped for innovative sustainability initiatives to be taken up in the supply base, which would consider both cost and

environmental aspects. This had been the case with one of the company's own innovations.

The benefits of program oriented sourcing were voiced in the C3-I interview. According to the manager, the risks would decrease where there is more accountability by the program to ensure there are no hick-ups in the deliveries caused by environmental and social issues or other problems.

> "In this case, if new suppliers are launched from Asia, they would be gone through more thoroughly. The project manager needs to ensure timely delivery within budget. They do not want to take risks. Sourcing cannot secretively get a new unknown supplier into the supply base of a project. The project model may be better in this sense – the project manager has the ultimate responsibility. However, this sourcing model is a bit more difficult to manage".

At this stage, I was still not certain whether the type of sourcing organization set-up would have a significant impact on how the supplier sustainability risk management was perceived. Thus, I kept the topic open for further comparisons with new data.

Table 9 below shows the development of codes from C2-I to C3-I. The new codes build on the previous codes and memos and are born through constant comparison of new and old data and memos. C3 had gone through interesting times in supply chain strategy as well as had experienced incidents related to this area. Thus, the interviewed manager had already processed and analysed the topic to great extent from C3's perspective, leading to an interview that flowed very easily. It felt that more should have been understood about the supplier profiles in that industry to grasp the full extent of the manager's analysis, especially on the topic of complex supplier relationships. Later on in the analysis, I memoed about innovations combining cost and environmental/social benefits in the supply base. Those were briefly mentioned by the interviewed manager as a desired future development. So far, there was not enough insights as to whether it could be one of the sourcing's drivers to be active in the environmental and social areas.

Table 9 Coding Development from C2 to C3

C2-I	**C3-I**
Estimating risk	Estimating risk
Acknowledging risks	Acknowledging risks
Analysing from historical data	Analysing from historical data
Past incidents	Past incidents
Distance from end-consumer	Distance from end-consumer
ERM	ERM
Labour intensity	Labour intensity
Risk silos	
Categorizing sustainability risks	Categorizing sustainability risks
	Position in supply chain
Reputational risk	Reputational risk
	Marketing driven
	Reporting environmental figures
Not meeting customer requirements	Not meeting customer requirements
Supplier's misconduct	Supplier's misconduct
Working against values	Working against values

Supply risk	Supply risk
Availability of supply at risk	Availability of supply at risk
Cost drivers, supplier selection and incidents	Cost drivers, supplier selection and incidents
Fire fighting eating up resources	Fire fighting eating up resources
	Risk silos
Focusing on 2 tiers of supply	Focusing on 2 tiers of supply
	Supplier's LCCS
Organizational roles	Organizational roles
Risk quantification	Risk quantification
Linking to strategy	Linking to strategy
Getting buy-in	Getting buy-in
Supply chain strategies	Supply chain strategies
	Cost drives to LCCS
Mitigating risk	Mitigating risk
Effectiveness of actions	Effectiveness of actions
Shock resistance	Shock resistance
Alternatives to supply	Alternatives to supply
Being prepared	Being prepared
Geographically dispersed supply base	Geographically dispersed supply base
Supplier selection criteria	Supplier selection criteria
Customer requirements	Customer requirements
Environmental and social performance	Environmental and social performance
Negative criteria	Negative criteria
Sourcing practices	Sourcing practices
Auditing	Auditing
Fire fighting	Fire fighting
Getting sourcing to take action	Getting sourcing to take action
	Local sourcing
Paying for mitigation	Paying for mitigation
Resourcing	Resourcing
Profiling suppliers	Profiling suppliers
Awareness of environment and ethics	Awareness of environment and ethics
Long-term suppliers	Long-term suppliers
Negotiation power	Negotiation power
Physical location	Physical location
Size of supplier	Size of supplier
Supplier's values	Supplier's values
	Supplier selection
	Fear factor
	Type of sourcing organization set-up

4.3. Advanced Processes of C4 Clarified Categories

After data gathering from two business-to-business companies, I felt I needed to find data from a more end-consumer oriented company to let more insights emerge, especially for the "Categorizing risk" category. Company C4 is a Finland-based multinational. It is a metal and consumer brands company which had recently further extended all of its operations geographically to developing countries.

4.3.1. Company Reports and Video – C4

At the time of writing the annual report (C4AR), C4 was on a strong growth path despite the economic downturn. The company conveyed a solid sustainability message across the whole report. They wanted to cultivate a mind-set and culture of sustainability within the company and the supply chain. C4 had recently defined a sustainability strategy for the whole company to set a clear direction. There was a new sourcing office set-up close to the suppliers to facilitate product development and to ensure compliance to supplier code-of-conduct. The company had also identified the megatrend of consumers wanting to buy environmentally friendly products and drove with that in their marketing.

C4's key message in the sustainability report C4SR is long-lasting products, the life-cycle approach and extending the responsibility of sustainability to suppliers. They had also recently set up high-level sustainability responsibilities in the organization and implemented various sustainability-related management systems. They were on their way to "systemizing sustainability", in which C1 had already excelled. Although C4 still had almost half of its employees in Finland, it had extended its operations, especially to Asia. The company had outsourced 40% of its production, most of it in developing countries, and relied on trustworthy long-term partners.

Unlike the reports (C4AR and C4SR), the video C4YT on C4's overall company presentation was downloaded and analysed a year after the initial analysis took place. Thus, it was used just to confirm the perceptions of the company. The video continued to highlight the durability and environmental values as the core of the company when it comes to sustainability.

4.3.2. Interview – C4

The interviewed manager C4-I is responsible for the company's sustainability and had a long history of similar roles in other consumer brand companies. The manager had a thorough understanding of the risks related to this area and had strong opinions about the optimal way to organize the risk identification and management. C4 had advanced processes in place in the supply chain organization and sourcing for managing the suppliers' environmental and social performance. There was close collaboration between different functions on sustainable supply chain management. C4's suppliers ranged from small to big in relation to their own size and negotiation position. The interview was conducted over the phone, while the rest of the interviews in the sample were face-to-face interviews. This interview clarified many of the previous categories and added important properties for them. However, there were very few truly new insights discovered that would warrant new categories in the analysis. It was becoming clear that the saturation point of data collection was soon about to be reached.

The previous discussions had led me to understand that cost is the one and only reason to look for competitive advantage from less developed countries. This interview showed that the strategy leading to LCCS can also have components other than cost – the sales forcefully expanding to these countries: "Sales drive to LCCS" code.

> "The driver for this is a new strategy that aims at the global marketplace, both sales and sourcing. This brings complexities and risks to the operations. It used to be about production and sales locally".

Thus, I concluded the drivers for supply strategies are not as straightforward as I initially noted. It is also the whole company's strategy that cascades on the supply chain strategies and sourcing practices. In a fashion similar to C3, C4 also had just recently experienced a significant increase in LCCS. This may explain why the interviewed manager C4-I was more explicit than the previous interviewees about the fear factor related to entering the new markets:

> "Now we are entering markets with different laws and values".

The codes "Different laws" and "Values" were added as properties contributing to the supplier "Fear factor". These two may have an even bigger impact than, for example, sheer size of a company on what the expectations are regarding the environmental and social performance of a particular supplier.

Supporting the conclusions from previous interviews, for this consumer brand company, the reputation risk has clear priority over supply risk in the environmental and social areas in the mind of the manager. As the interviewed manager C4-I said:

> "The first risk to think about is the image risk; the second risk is the supply risk – that is, the risk of not ensuring deliveries from suppliers with the right quality".

The company's position in the supply chain vis-à-vis the end-consumer seems to have an impact on the priority order of the two supplier sustainability risk components – and if not the priority order, the relative strength of the awareness of the two. The manager also gave a definition of how the manager perceives supply management: "the need to ensure deliveries from suppliers with the right quality". I decided to call this "Availability management", a term that another interviewee had used. I then memoed to determine the different sourcing aims and added availability management as a key driver in addition to cost: cost and availability are the two overriding goals of sourcing, which is where sourcing's work is focused.

This company had had the supply risks realized, and thus the organization was very knowledgeable and also willing to act in the area. Sourcing's "buy-in" had been reached due to the explicit quantification of risk, and sourcing was collaborating extensively with other functions of the organization on the topic. Previous incidents in the supply chain are crucial for risk quantification, especially in the supply area. If there is no track record of environmental or social incidents, the potential incident's impact is easily underestimated, causing these risks not to be highlighted in enterprise risk management tools.

> "Supply risks have realized: have had to, for example, close supplier lines and factories for poor practices. We scrutinized carefully before taking in new suppliers".

C4's sourcing organization is thus paying close attention to the supplier selection and has clear criteria for environmental and social performance. This strengthened the previous understanding of supplier selection criteria being one of the key risk

management tools in the area. Other risk management tools voiced in the interviews were supplier audits and "Development programs" as well as the ultimatums set when something had already gone wrong.

Active supply chain strategies also help to mitigate the environmental and ethical performance-related risks. As with C1 and C2, the "not all eggs in the same basket" insight was repeated also by the C4's interviewed manager:

> "In order to hedge against the geographical supply risks, we split the sourcing to multiple countries. Sustainability-related supply risks are managed the same way as any traditional risks in the supply chain, which is through supply chain strategies like not putting all eggs in the same basket. We have multiple, similar types of suppliers for the same product".

The interviewed manager C4-I clearly voiced that the supply chain management strategies aiming at reduction of the sustainability risk are the very same as for managing any other threat in the supply chain. A single source situation is perceived as the riskiest, and that should be avoided at any cost. The geographical dispersion was mentioned in this interview, and to me it shows that the environmental and social risks are related to the location, the culture and the values where the supplier operates.

The supplier sustainability risks had realized for C4 either in the form of an environmental or social incident or as a misconduct noticed during routine operations. In some cases, the supply strategies failed to mitigate the impact by having a second source for the same product. The manager C4-I said:

> "Sometimes we have had to make the decision [to stop supply] based on the situation that there simply is no other supplier for a certain product".

In those cases where there were no alternatives readily available, the company resorted to more advanced sourcing practices and launched a detailed program for improving the supplier in question in this area or utilized other innovative solutions to reduce the immediate supply shortage. There was a clear process that involved various functions of the organization and a procedure marked by limits and ultimatums for the supplier in order to improve the situation. It sounded like the company was constantly altering both the higher level supply chain strategies as well as the sourcing practices to increase the shock resistance of the supply chain in the sustainability area.

The idea that customer requirements were being perceived as one of the key drivers to develop sustainable supply chain management gained further support from this interview.

> "There are strong requirements and questions from customers to develop sustainability further in the supply chain".

C4's position close to the end-consumer made them very aware of the environmental and social issues, which was shown in their reputational risk management but also reflected a certain awareness of the sourcing and supply sides. Due to the extensive work in the reputational risk area, they were also very aware of the supply risks involved with the suppliers' environmental and social performance. Active reputational risk management seems to translate into increased supply risk awareness. Could it be that the companies who are internally willing to combat misconduct in the supply chain create the supply problems in the process? The company audits a supplier, finds potential problems for the image of the buying company and stops the production lines, thus creating a supply problem that was not there in the first place. An active sustainable supply chain management could create supply risks, especially if working in

organizational silos. If there is not an understanding of the consequences that these actions may create in the supply chain, it is not likely that the sourcing organization would be prepared for confronting a misbehaving supplier by having valid alternatives for supply.

Certain pull-back in thinking about low-cost sourcing was also seen in C4's manager's perceptions (C4-I). European alternatives were considered due to perceived reduction of risk. As the interviewed manager (C4-I) said:

> "The supplier strategy changes and there is a continuous search for alternatives. We are also looking at Europe for alternatives".

In addition, the previous interview with C3 had partially come to the same conclusion that there may be a certain pull-back from the initial cost-driven search for competitive advantage. The sustainability risks associated with LCCS had been realized for many Western companies, thus putting more weight on the risk criteria when selecting the location of the supply chain. The local suppliers are seen as less risky in the environmental and social areas.

There was again a comment that was similar to the ideas voiced in previous interviews about the supplier selection and how that helps in creating a supply chain with less risk related to the environmental and social performance of suppliers.

> "Environmental and ethical considerations do have an impact on supplier selection. We do not want more risk than what is necessary".

The company seemed to have a very clear sustainability criterion for supplier selection. There was a supplier code-of-conduct document, which set the level for the minimum requirements a supplier must meet. "More risk than is necessary" shows that the interviewed manager understands risk management very well. Oftentimes it is not realistic to avoid risk altogether but rather to tolerate some understood risk. This naturally requires a good process for identifying the risk first. This company had previous cases of environmental and social risks being realized and thus was good at identifying the threats.

The interviewed manager C4-I voiced many of the previously noted perceptions in a stronger way. The topics of LCCS and alternatives to supply and supplier selection were clarified. The reputational risk and customer requirements were driving the activity. What was interesting to note was the strong focus and awareness on sustainability-related supply risk management. All in all, this interview strengthened many of the previously created categories and gave them new properties. The key concerns for the interviewed manager C4-I were in making the sourcing back-up plans even more streamlined so that there were always alternative paths to take in case a misconduct was detected with one of the suppliers. The manager perceived that the risks were increasing further with the current supply chain strategy being implemented and that there was plenty of work to be done in the sustainability area with implementing the well-planned sourcing practices in collaboration with different functions of the organization. The development of codes from C3-I to C4-I is presented in Table 10.

The discussion was very open and active regardless of the fact that the interview was conducted over the phone instead of face-to-face. However, I may have missed some nuances of the conversation because of the set-up. Even though it seemed that there had been saturation taking place with many of the identified categories, after this interview, I still decided to resort to theoretical sampling to find yet another set of data

to compare with my previous codes and memos. There were still areas where I wanted to find contrasting pieces to be better able to explain the variation in behaviour and perceptions in different companies. Thus, I looked for a company which would again have a different profile when it comes to the position within the supply chain, a different organizational set-up, and different supplier profiles. What remained constant are the geographical spread of supplies and the company's country of origin.

Table 10 Coding Development from C3 to C4

C3-I	C4-I
Estimating risk	Estimating risk
Acknowledging risks	Acknowledging risks
Analysing from historical data	Analysing from historical data
Past incidents	Past incidents
Distance from end-consumer	Distance from end-consumer
	Sourcing's awareness of E&E
ERM	ERM
Labour intensity	Labour intensity
Categorizing sustainability risks	Categorizing sustainability risks
Position in supply chain	Position in supply chain
Reputational risk	Reputational risk
Marketing driven	Marketing driven
Reporting environmental figures	Reporting environmental figures
Not meeting customer requirements	Not meeting customer requirements
Supplier's misconduct	Supplier's misconduct
Working against values	Working against values
Supply risk	Supply risk
Availability of supply at risk	Availability of supply at risk
Cost drivers, supplier selection and incidents	Cost drivers, supplier selection and incidents
Fire fighting eating up resources	Fire fighting eating up resources
Risk silos	Risk silos
Focusing on 2 tiers of supply	Focusing on 2 tiers of supply
Supplier's LCCS	Supplier's LCCS
Organizational roles	Organizational roles
Risk quantification	Risk quantification
Linking to strategy	Linking to strategy
Getting buy-in	Getting buy-in
Supply chain strategies	Supply chain strategies
Cost drives to LCCS	Cost drives to LCCS
	Pull-back due to risk
	Sales drive to LCCS
Mitigating risk	Mitigating risk
Effectiveness of actions	Effectiveness of actions
Shock resistance	Shock resistance
Alternatives to supply	Alternatives to supply
	Single supply

Being prepared	Being prepared
Geographically dispersed supply base	Geographically dispersed supply base
Supplier selection criteria	Supplier selection criteria
Customer requirements	Customer requirements
Environmental and social performance	Environmental and social performance
Negative criteria	Negative criteria
Sourcing practices	Sourcing practices
Auditing	Auditing
	Development programs
Fire fighting	Fire fighting
Getting sourcing to take action	Getting sourcing to take action
	Availability management
	Cost
Local sourcing	Local sourcing
Paying for mitigation	Paying for mitigation
Resourcing	Resourcing
Profiling suppliers	Profiling suppliers
Awareness of environment and ethics	Awareness of environment and ethics
Long-term suppliers	Long-term suppliers
Negotiation power	Negotiation power
Physical location	Physical location
Size of supplier	Size of supplier
Supplier's values	Supplier's values
Supplier selection	Supplier selection
Fear factor	Fear factor
	Laws and regulations
	Values
Type of sourcing organization set-up	Type of sourcing organization set-up

4.4. Minor Nuances – C5

C5 is, as all the other companies in the sample, a Finland-based multinational. C5 is an engineering and services company. In the distance from end-consumer dimension, it is somewhere between a consumer brand and a business-to-business company. The brand is very visible to end-consumers on a day-to-day basis, but the sales are closed with another business-to-business partner. Thus, the company added a new viewpoint to the "distance from end-consumer" category as the rest of the companies in the sample were either consumer brands or clearly further up in the supply chain. C5 has operations all over the world and also active sources from developing countries.

4.4.1. Company Reports and Video – C5

Company C5 operates on all continents, with the strongest growth in Asia and other developing regions. C5 sees the megatrend of environmental concern, and in that

respect focuses mainly on energy-efficiency in their products. However, their key focus area with their products is safety, which shows in every area of their operations. C5's annual report includes safety in the human dimension of sustainability. According to the report, customer requirements drive sustainability and energy-efficiency, with "carbon footprint" at the core of sustainability.

C5's sustainability report, C5SR, also underlines ethical business practices as being important to the company and that company core values drive all operations. They do say that corporate responsibility is embedded in everything they do. Sustainable and profitable growth is mentioned many times throughout the report. C5SR has a very different tone compared to other sustainability reports in this study. C5 emphasizes the triple bottom line and specifically the role of profitability in the report, while other companies' reports are based on subjectively softer values. The company has various sustainability-related procedures, ranging from environmental reporting to supplier risk management. I can see a similar process focus as with C1: "Systemizing sustainability". The video C5YT, which focused on company presentation, showcased C5 as a company who enables more comfortable living for the end-consumers while taking into account the environment.

4.4.2. Interview – C5

The two interviewed managers of C5 were responsible for the supply and quality of the group's Finnish organization. Comparing the codes and memos from this interview further strengthened many of the categories, but there were not any significant new categories born as a result. Thus, this interview revealed the saturation point of data collection.

C5 had a strong global presence and LCCS strategies were also discussed extensively in this interview.

> "Much of our supply is geographically located in developing countries"

An interviewed manager C5-I questioned the sourcing's rationale of clinging to mainly cost considerations in supply decisions. The supply manager perceived that the environmental and social performance-related risks had not been considered sufficiently when initiating the latest LCCS strategy.

> "The price and quality ratio serves as the criteria for supply decisions – do we really think about all the consequences? Environmental and social consequences are not always included. When it comes to low cost country sourcing strategy, we now understand that not everything works. It is not always optimal in quality. We were in a rush to have gone to these markets without considering all the consequences".

The same pull-back from LCCS strategies was perceived in this interview as with some of the other interviews (C3-I and C4-I). When there is evidence of risks being realized, it becomes easier to quantify the risks and thus be aware of them. Risk mitigation then comes as the next step.

The managers told about the alternative strategies to source locally as a back-up for the sources more distant geographically. The cost was significantly higher when sourcing locally, but it served as an important back-up which, according to them, significantly reduced the risk of consequences of environmental or social incidents in the supply chain.

> "We have centralized sourcing categories. We have had very strong small units around the world. Due to our history, sourcing has genuinely searched for centralized sourcing practices. However, there are some suppliers who only deliver locally".

> "A second source is always the desired state. Another alternative is to do locally instead of the low cost country sourcing location (China, etc.). It can be done with higher price locally. Often this is a valid alternative".

The interviewed supply manager perceived that there is pressure to source locally in Europe the same pressure is also coming from the customer side. The customers want to ensure the sustainability of the products in this way.

> "Some customers require that components come from Europe".

The element of negotiation power came up as a nuance of the supplier profile, leading to further comparison of the memos and codes from the previous interviews.

> "Often we are an important customer to the supplier. We can represent a big portion of turnover for many, and some factories may be fully dedicated to [us]".

The dominant position of C5 showed clearly in how the company was able to orchestrate activities in the supply chain. C5 is looking beyond the first tier of suppliers in the environmental and social areas. They extend the sourcing practices to the second tier and conduct audits, including the environmental and social requirements. They even want to govern the supplier selection of the second tier in some crucial materials.

> "We are interested in the 2nd tier also. We often go to the second source and even audit. Often, the supplier is not given the chance to choose the second tier supplier".

The managers perceived that C5 had significant negotiation power in the supply chain and was therefore able to have a large circle of influence. The negotiation power enables more actions to be taken, as in the contract with C1 who had very powerful suppliers and thus did not have as much room to manoeuvre in environmental and social performance improvement initiatives.

Sometimes the environmental and social performance-related risks can realize in unexpected ways. The managers of C5 gave two examples that do not from the outset sound like social performance issues. After thinking about it, they concluded that these realized supply risks were indeed related to the poor social conditions in the factories in question and could have been avoided by better management of the personnel's working conditions and care.

> "An East European supplier was having serious supply problems. It was a very cold winter and many working units were lacking people due to flu. After studying the situation, it turned out that it was only 5 degrees Celsius inside the factory, so it was no wonder they had this problem".

> "A repeated problem relates to suppliers' workforce not returning back to work from Chinese New Year celebrations. Certain incentives should be set in place. Now this caused delays, but we could not do anything at that stage. Sourcing has the responsibility to make sure the supplier makes the plans to correct this next year".

Both these cases illustrated that it is often difficult to understand the root cause of the supply problems and thus to be able to treat the root cause instead of the symptoms. In the above cases, the identification of these problems with the social performance category and treating them with the correct actions could help mitigate the same risks in the future. I concluded that there is the risk of the incident and the risk of the

outcome: in this case, the poor working conditions as the incident and the supply shortages as the outcome.

The company did not feel too much pressure to implement new sustainability standards in the supply chain. However, the managers had perceived a clear trend in the industry of increased attention to sustainability, while customer requirements started to reflect this also.

> "In sustainability we may be a bit reactive".

> "Reputational risk – overall it is a big risk for this industry. More and more questions come in from customers. "

For C5, the supplier sustainability risks had realized while the reputational risk had just started to become an important aspect. The manager's key concerns related to the LCCS strategies that were creating further risks for operations. Table 11 summarizes the development of coded categories and their properties between C4-I and C5-I.

Table 11 Coding Development from C4 to C5

C4-I	C5-I
Estimating risk	Estimating risk
Acknowledging risks	Acknowledging risks
Analysing from historical data	Analysing from historical data
Past incidents	Past incidents
Distance from end-consumer	Distance from end-consumer
Sourcing's awareness of E&E	Sourcing's awareness of E&E
ERM	ERM
Labour intensity	Labour intensity
Categorizing sustainability risks	Categorizing sustainability risks
Position in supply chain	Position in supply chain
Reputational risk	Reputational risk
Marketing driven	Marketing driven
Reporting environmental figures	Reporting environmental figures
Not meeting customer requirements	Not meeting customer requirements
Supplier's misconduct	Supplier's misconduct
Working against values	Working against values
Supply risk	Supply risk
Availability of supply at risk	Availability of supply at risk
Cost drivers, supplier selection and incidents	Cost drivers, supplier selection and incidents
Fire fighting eating up resources	Fire fighting eating up resources
Risk silos	Risk silos
Focusing on 2 tiers of supply	Focusing on 2 tiers of supply
Supplier's LCCS	Supplier's LCCS
Organizational roles	Organizational roles
Risk quantification	Risk quantification
Linking to strategy	Linking to strategy
Getting buy-in	Getting buy-in
Supply chain strategies	Supply chain strategies

Cost drives to LCCS	Cost drives to LCCS
Pull-back due to risk	Pull-back due to risk
	Pull-back from pure cost focus
Sales drive to LCCS	Sales drive to LCCS
Mitigating risk	Mitigating risk
Effectiveness of actions	Effectiveness of actions
Shock resistance	Shock resistance
Alternatives to supply	Alternatives to supply
Single supply	Single supply
Being prepared	Being prepared
Geographically dispersed supply base	Geographically dispersed supply base
Supplier selection criteria	Supplier selection criteria
Customer requirements	Customer requirements
Environmental and social performance	Environmental and social performance
Negative criteria	Negative criteria
Sourcing practices	Sourcing practices
Auditing	Auditing
Development programs	Development programs
Fire fighting	Fire fighting
Getting sourcing to take action	Getting sourcing to take action
Availability management	Availability management
	Incidents in disguise
Cost	Cost
Local sourcing	Local sourcing
Paying for mitigation	Paying for mitigation
Resourcing	Resourcing
Profiling suppliers	Profiling suppliers
Awareness of environment and ethics	Awareness of environment and ethics
Long-term suppliers	Long-term suppliers
Negotiation power	Negotiation power
	Dominant role enables wider risk m.
Physical location	Physical location
Size of supplier	Size of supplier
Supplier's values	Supplier's values
Supplier selection	Supplier selection
Fear factor	Fear factor
Laws and regulations	Laws and regulations
Values	Values
Type of sourcing organization set-up	Type of sourcing organization set-up

This last interview fine-tuned some of the categories identified already from the previous interviews with the four other companies. There were not any strong new categories born from this interview. The topic had started to saturate. C5 was conveniently located in the middle of the continuum of closeness to the end-consumer, in between the two purely business-to-consumer companies and the two business-to-business companies, giving yet another viewpoint.

4.5. Summary

The first two interviews with C1 (C1-Ii and C1-Iii) (Study 1) answered the question "What is this a study about?" and thus determined the focus of the further interviews and basis for theoretical sampling. The interviews after entering the field, Study 2, focused on the risk management aspects of the environmental and social performance of the suppliers, regarding both the supply and reputational risk categories. After interviewing the representatives of the fifth company in the sample, taking memos, and constant comparison of new data to old codes and categories, it was becoming clear that the data collection had entered the point of saturation – that is, the same message was coming through from interview to interview and there was little new information to add to the core categories. Thus, it was time to end the data collection phase. As stated by Manuj and Pohlen (2012:738): "When a category is saturated, constant comparison will not reveal new properties or dimensions for the category or relationships between categories".

Table 12 below maps the development of key codes under the core category of "risk resulting from environmental and social performance of suppliers" from the first interview to the last without much consideration of the relationships of the codes yet, although some of the relationships were already obvious at this stage.

Table 12 Full Coding Development of Data Gathering Stage

C1-1i & C1-1ii	C2-1	C3-1	C4-1	C5-1
Estimating risk	Estimating risk	Estimating risk	Estimating risk	Estimating risk
Acknowledging risks	Acknowledging risks	Acknowledging risks	Acknowledging risks	Acknowledging risks
Analysing from historic data	Analysing from historic data	Analysing from historic data	Analysing from historic data	Analysing from historic data
Past incidents	Past incidents	Past incidents	Past incidents	Past incidents
Distance from end-consumer	Distance from end-consumer	Distance from end-consumer	Distance from end-consumer	Distance from end-consumer
			Sourcing's awareness of E&E	Sourcing's awareness of E&E
	ERM	ERM	ERM	ERM
	Labor intensity	Labor intensity	Labor intensity	Labor intensity
Risk silos	Risk silos			
Categorizing sustainability risks	Categorizing sustainability risks	Categorizing sustainability risks	Categorizing sustainability risks	Categorizing sustainability risks
		Position in supply chain	Position in supply chain	Position in supply chain
Reputational risk	Reputational risk	Reputational risk	Reputational risk	Reputational risk
		Marketing driven	Marketing driven	Marketing driven
		Reporting env. figures	Reporting env. figures	Reporting env. figures
Not meeting customer requirements	Not meeting customer requirements	Not meeting customer requirements	Not meeting customer requirements	Not meeting customer requirements
Supplier's misconduct	Supplier's misconduct	Supplier's misconduct	Supplier's misconduct	Supplier's misconduct
Working against values	Working against values	Working against values	Working against values	Working against values
Supply risk	Supply risk	Supply risk	Supply risk	Supply risk
Availability of supply at risk	Availability of supply at risk	Availability of supply at risk	Availability of supply at risk	Availability of supply at risk
Cost drivers_supplier select.	Cost drivers_supplier select.	Cost drivers_supplier select.	Cost drivers_supplier select.	Cost drivers_supplier select.
Firefighting eating up resources	Firefighting eating up resources	Firefighting eating up resources	Firefighting eating up resources	Firefighting eating up resources
		Risk silos	Risk silos	Risk silos
Focusing on 2 tiers of supply	Focusing on 2 tiers of supply	Focusing on 2 tiers of supply	Focusing on 2 tiers of supply	Focusing on 2 tiers of supply
		Supplier's LCCS	Supplier's LCCS	Supplier's LCCS
Organizational roles	Organizational roles	Organizational roles	Organizational roles	Organizational roles
Risk quantification	Risk quantification	Risk quantification	Risk quantification	Risk quantification
Linking to strategy	Linking to strategy	Linking to strategy	Linking to strategy	Linking to strategy
Getting buy-in	Getting buy-in	Getting buy-in	Getting buy-in	Getting buy-in
	Supply chain strategies	Supply chain strategies	Supply chain strategies	Supply chain strategies
		Cost drives to LCCS	Cost drives to LCCS	Cost drives to LCCS
			Pull-back due to risk	Pull-back due to risk
				Pull-back from pure cost focus
			Sales drive to LCCS	Sales drive to LCCS

(Table 12 continued)

C1-Ii & C1-Iii	C2-I	C3-I	C4-I	C5-I
Mitigating risk	Mitigating risk	Mitigating risk	Mitigating risk	Mitigating risk
Effectiveness of actions	Effectiveness of actions	Effectiveness of actions	Effectiveness of actions	Effectiveness of actions
Fire fighting	Shock resistance	Shock resistance	Shock resistance	Shock resistance
Getting sourcing to take action	Alternatives to supply	Alternatives to supply	Alternatives to supply	Alternatives to supply
			Single supply	Single supply
Being prepared	Being prepared	Being prepared	Being prepared	Being prepared
Shock resistance	Geographically dispersed supply base	Geographically dispersed supply base	Geographically dispersed supply base	Geographically dispersed supply
Alternatives to supply	Supplier selection criteria	Supplier selection criteria	Supplier selection criteria	Supplier selection criteria
Geographically dispersed supply base	Customer requirements	Customer requirements	Customer requirements	Customer requirements
Supplier selection criteria	Environmental and social performance	Environmental and social performance	Environmental and social performance	Environmental and social performance
	Negative criteria	Negative criteria	Negative criteria	Negative criteria
	Sourcing practices	Sourcing practices	Sourcing practices	Sourcing practices
Auditing	Auditing	Auditing	Auditing	Auditing
			Development programs	Development programs
	Fire fighting	Fire fighting	Fire fighting	Fire fighting
	Getting sourcing to take action	Getting sourcing to take action	Getting sourcing to take action	Getting sourcing to take action
			Availability management	Availability management
				Incidents in disguise
			Cost	Cost
		Local sourcing	Local sourcing	Local sourcing
Paying for mitigation	Paying for mitigation	Paying for mitigation	Paying for mitigation	Paying for mitigation
Resourcing	Resourcing	Resourcing	Resourcing	Resourcing
	Profiling suppliers	Profiling suppliers	Profiling suppliers	Profiling suppliers
	Awareness of environment and ethics	Awareness of environment and ethics	Awareness of environment and ethics	Awareness of environment and ethics
	Long-term suppliers	Long-term suppliers	Long-term suppliers	Long-term suppliers
	Negotiation power	Negotiation power	Negotiation power	Negotiation power
				Dominant role
	Physical location	Physical location	Physical location	Physical location
	Size of supplier	Size of supplier	Size of supplier	Size of supplier
	Supplier's values	Supplier's values	Supplier's values	Supplier's values
	Supplier selection	Supplier selection	Supplier selection	Supplier selection
	Fear factor	Fear factor	Fear factor	Fear factor
			Laws and regulations	Laws and regulations
			Values	Values
	Type of sourcing organization	Type of sourcing organization	Type of sourcing organization	Type of sourcing organization

This chapter has described how the analysis proceeded through the different interviews that took place during December 2011 and spring 2012. The write-up is based on the transcribed quotes and memos written during the process and showed the cumulative nature of building an understanding of the managerial perceptions of managing supplier sustainability risk at a company level. At this stage, the codes were loosely organized around three organizing categories of "Estimating risk", "Linking to strategy" and "Mitigating risk". These categories were titled based on first impressions from interviews without further thought of the final relationships between the codes. Further analysis took place with comparison of incidents to incidents, codes to codes, categories to categories and memos to memos, resulting in a rather newly organized set of codes based on the weights emerging from the data.

With further analysis, "Supply chain strategies" and "Sourcing practices" formed together a clear new category, under which codes related to supplier profiles, fear factors, LLCS strategies, supplier requirements, auditing and risk management systems fell naturally. "Position in the supply chain" category bundled up the distance from end-consumer, risk categories or reputational risk and supply risks together with customer requirements and negotiation power. "Sourcing's incentive structure and risk awareness" became the higher category for cost drivers, availability management, risk awareness and incentives. The next chapter presents these key selectively coded categories that were considered important in the emergent theory after all data gathering had already taken place.

5 DEVELOPING THE FRAMEWORK

After the initial phase and open coding of data, I started *selective coding* based on the findings in the previous stage. The selective coding had already partially taken place during the interviews and increased the focus of the study on managing supplier sustainability risk. Section 5.1. discusses the different elements of managing supplier sustainability risk that emerged during the process and presents those three new organizing categories for analysis. *Theoretical coding* revealed that these elements or prime movers of behaviour drive three key, problematic, areas of managing supplier sustainability risk, which are presented in Section 5.2. Figure 4 shows the development of coding categories from the open coding phase in Chapters 3 and 4 to selective coding in Section 5.1 and theoretical coding in 5.2 to the presentation of emerged framework in Section 6.1.

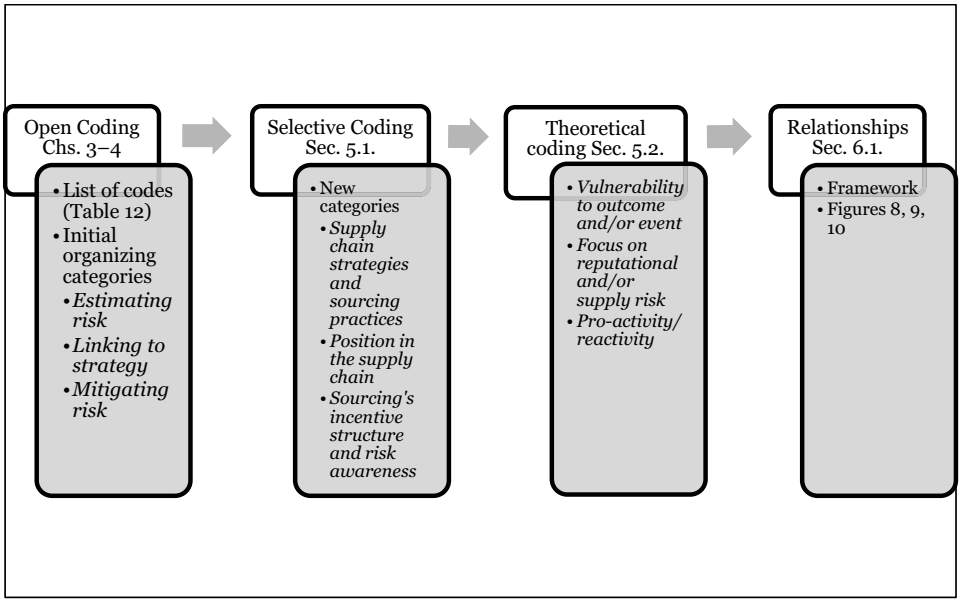

Figure 4 Phases of Analysis

While the open coding phase was rather straightforward and selective only from the core category perspective, the phase that followed included renaming and reorganizing the categories. Some categories were weighted heavier with strong attributes while some had numerous but weak properties. The taking of memos had a key role in reorganizing and further conceptualization. This chapter explains the memoing and thinking processes that led to the conceptualizations and finally to the elements of the theoretical framework.

5.1. Elements of Managing Supplier Sustainability Risk

In this stage, the conceptual coding and resulting categories revealed why and how risk related to suppliers' environmental and social performance is managed the way it is managed. The entire chapter is a write-up of the nodes in NVivo and the linked memos

written during the grounded theory research process. The chapter is divided into the topics of *supply chain strategies and sourcing practices*, *position in supply chain* and *sourcing incentive structure and risk awareness,* which organize **the manager's interpretations of the different elements that have an impact on the management of the environmental and social performance of the supply chain.** In this study, the unit of analysis is an organization and the perceptions of managers, or managers' interpretations, are used to relate the findings at the organizational level.

The sorting of memos and creation of higher-order categories based on selective coding resulted in the above-mentioned three categories. The reshuffling of the memos created new categories and changed the hierarchy of some of the categories. Thus, the new categories do not have the same properties as in the company-by-company analysis of chapters 3 and 4. The initial coding categories are shown in tables 13, 14 and 15. At this stage, the original raw data are not referred to in detail any longer as the analysis has moved to a higher conceptual level. New categories are based on centrality, making sure they can explain variation and explain what emerged from the data.

5.1.1. Supply Chain Strategies and Sourcing Practices

A new category, "Supply chain strategies and sourcing practices", emerged from the data. In order to link this phase to the previous phase, Table 13 presents the original codes which I considered to belong under this new category of "Supply chain strategies and sourcing practices". The lengthy list consists of the majority of the original codes. The most significant codes are discussed in this section with the memos linked to these codes as the base.

Table 13 Coding Development – Category: Supply Chain Strategies and Sourcing Practices

SUPPLY CHAIN STRATEGIES AND SOURCING PRACTICES
Estimating risk
Acknowledging risks
Analysing from historical data
Past incidents
ERM
Labour intensity
Focusing on 2 tiers of supply
Supplier's LCCS
Risk quantification
Linking to strategy
Supply chain strategies
Cost drives to LCCS
Pull-back due to risk
Pull-back from pure cost focus
Sales drive to LCCS
Mitigating risk
Effectiveness of actions
Shock resistance
Alternatives to supply

Single supply
Being prepared
Geographically dispersed supply base
Supplier selection criteria
Customer requirements
Environmental and social performance
Negative criteria
Sourcing practices
Auditing
Development programs
Fire fighting
Local sourcing
Paying for mitigation
Resourcing
Profiling suppliers
Awareness of environment and ethics
Long-term suppliers
Negotiation power
Dominant role enables wider risk management
Physical location
Size of supplier
Supplier's values
Supplier selection
Fear factor
Laws and regulations
Values
Type of sourcing organization set-up

The environmental and ethical performance of suppliers is in principle a concern of the supply chain organization. What has led to a situation in which the risk of the environmental and social performance of the suppliers needs to be considered? What is done in organizations to mitigate the risk? Both these questions relate to supply chain strategies, the decisions made in an organization to ensure the supply of needed goods and services at a desired cost and quality level. Starting from the basic question of make-or-buy – that is, does the company prefer to invest in production or outsource the manufacturing of goods needed to fulfil the demand – "Supply chain strategies" determine in general how much risk the company is exposed to with regards to the environmental and ethical performance of its suppliers. When the decision is to outsource, questions regarding the geographical spread of the supply base, the "Sourcing practices" of the supplier selection criteria and monitoring and enforcing those criteria are key to understanding the amount of risk.

The decisions of the supply base in general and "supplier profiles" in particular have an impact on what type of environmental and ethical challenges the supply chain is more prone to face. The interviewed company managers talked about the geographical location of the supplier's production as one of the key drivers as well as the size and values of the supplier organization. The companies in question were all Finland-based companies, thus holding a certain set of culturally bound values, practices and expectations of the supply base. They identified that suppliers in or near Finland held

the same values and employed similar practices, giving them confidence that those companies would perform well in environmental and social measures – which is to say, they promoted "local sourcing". The further away the supplier had its production facilities, the more threats the managers saw in the performance. They also highlighted the difficulty in monitoring of performance, becoming more difficult with additional distance and cultural boundaries. The risk of a certain supplier can be likened to a "fear factor" of that supplier. The managers made generalizations about which suppliers are risky, and many of the qualities of a risky supplier were very broad, such as the geographical location of the supplier. These pre-assumptions guide managers' actions. A single supplier's profile and the supply base's general supplier profile thus have a big impact on the perceived risk level of the supply base from an environmental and ethical standpoint.

Broad supply chain decisions have an impact on the general supplier profile. "Low cost country sourcing" (LCCS) had, in recent decades, been a significant trend of supply chain management in the interviewed companies. The lower cost of labour available in less developed countries has enticed companies to manufacture goods there as well as purchase goods and services from these locations. This concept emerged in all the interviews. The theoretical sampling had ensured that all the companies in the sample had operations and sourcing in developing countries, but the companies were not sampled for the reasons behind why they chose to have a presence in these countries. Increased LCCS was seen as one of the key supply chain decisions that escalated the amount of environmental and ethical concerns in the supply base. In addition to the mere quest for the lowest price, the decision to go to the lower cost countries for resources can also have to do with the expansion of markets to these very same countries. When the products are sold in these markets, it is understandable that the production and sourcing move closer as well – there is a "Sales drive to LCCS". Many of the companies mentioned a trend back to local sourcing, or a "pull-back from LCCS". They now often have a local alternative for the low cost country source, which is used at a higher price, in case the original source fails to deliver. They have started to question the "rush" decisions made to increase the weight of cost in the decision-making equation.

The risks associated with LCCS mentioned in the interviews were related mainly to the loss of control. The different standards for working conditions, material handling and environmental aspects are also very well understood by the interviewed companies. The companies had implemented many traditional sourcing practices to mitigate the environmental and social performance risks. These practices were naturally aimed to reach a broad spectrum of sourcing goals from cost and quality to the technical and strategic aspects of the suppliers, but they were also utilized to cover the environmental and social features to varying degrees. All the companies in the sample set certain supplier requirements for environmental and social performance, which were then taken into account in supplier selection. Some of the companies also actively audit the suppliers on these matters to check compliance and improve performance. The supplier selection process is more important than monitoring as it is much easier to have environmental and social aspects in order right from the beginning of the supplier relationship rather than have them retrofit into the processes and core practices of the supplier company afterwards. The companies in the sample had a varying degree of auditing practices implemented in this area. Some were very seasoned and others just starting the work.

Aside from sourcing-specific practices, enterprise-wide risk management (ERM) processes also covered these aspects to some degree, potentially highlighting significant

risks in the area. With ERM, the solidness of the process seems to determine how well it functions as a tool for mitigating environmental and social risks. It is often very difficult to determine how big the risk is for an incident to happen in the supply chain. The very nature of the ERM system is that only those risks that are considered significant for the whole business are highlighted. Something that has never happened but would potentially have a massive impact is rarely brought up in the ERM surveys. Overall, ERM is a good tool for combining the perspectives of the different functions of the organizations together. The identification of environmental and social risks in the supply chain is not necessarily the responsibility of the sourcing organization only – the inputs can come from other parts of the organization: marketing, sales and production close to the suppliers are good suspects.

Supply chain strategies have the potential to increase or reduce the vulnerability, or the "shock resistance" of the supply chain when it comes to the environmental and social performance of the suppliers. Traditional sourcing tools, or "Sourcing practices", are used to implement the strategies and also monitor the performance of the suppliers. The companies in the sample were all in different stages of implementing either LCCS strategies or sourcing tools. The particular stage seemed to relate to the company's position in the supply chain, how much pressure it received to make an effort towards a more sustainable supply chain and how much there was to gain from the investment. The next section discusses the impact of a company's position in the supply chain on how they perceive the risk related to the environmental and social performance of the suppliers and whether they focus on the reputational or supply aspects of the risk.

5.1.2. Position in Supply Chain

Another new category, "Position in supply chain", was formed and consisted of the original codes in Table 14. As with the previous Section 5.1.1, in this section the most significant codes are also dealt with and the thinking behind reorganization is revealed. The position of a company in the supply chain, the "Distance from end-consumer", has a significant impact on what type of pressures companies face in terms of their suppliers' environmental and social performance in general. In the sample of this study, the five companies were in very different positions regarding proximity to the end-consumer. Two of the companies (C1 and C4) were pure consumer goods companies with direct or semi-direct contact with the end-user of the product. One of the companies (C5) was in the middle – the end-consumers directly use their product and see the brand but are not involved in making decisions about the selection of the brand. The last two companies (C2 and C3) were further up the supply chain, the brand having very little to do with the end-user of the product. The position of the company within the supply chain also describes the relative negotiation power of the company with its partners. A large customer can have more say in the practices of the selling company, and it may be difficult to change the practices of a relatively larger supplier. Table 14 summarizes the original codes that now comprise the "Position in Supply Chain" category.

Table 14 Coding Development – Category: Position in Supply Chain

POSITION IN THE SUPPLY CHAIN
Categorizing sustainability risks
Reputational risk
Marketing driven

Reporting environmental figures
Not meeting customer requirements
Supplier's misconduct
Working against values
Supply risk
Availability of supply at risk
Cost drivers, supplier selection and incidents
Fire fighting eating up resources
Distance from end-consumer
Organizational roles

Although company values may have a significant impact on environmental and social practices, according to the interviews, the largest part of the drive towards improving the environmental and social performance of the supply chain comes from customer requirements. None of the managers could think of a single incident in which the customer requirements would have directly affected the supplier selection decision or caused a dismissal of a supplier, but there were cases where customer requirements had let to dropping a supplier from the selection process because of potential conflict with the customers' most typical requirements. Industrial customers may not be as interested in the environmental and social aspects as the consumer market is. There is thus more pressure for a consumer brand to pay attention to the environmental and social aspects for the sake of reputation. However, the supply risks may in either case be significant, whatever the perceived reputational aspect is. This became clear in the interviews. All the managers recognized the supply risk component of the environmental and ethical performance of the suppliers. The reputational risk component varies depending on the distance from the end-consumer, but the supply risk remains at the same level regardless of the distance from the end-consumer. The supply risk component has variability for different reasons. Moreover, the weight of either the environmental or social side of risk in general may vary depending on the labour intensity of the suppliers. If on average a company has very labour-intensive processes in their supply chain, they may be more prone to pay attention to the risks related to the social performance of the suppliers.

The negotiation power of a company has a great impact on how much a company can drive the supply chain's environmental and social performance. A relatively small supplier to a company who does not provide a rare resource but of whose customer portfolio the buying company represents a major portion is more prone to take all the customer requirements into account and improve its environmental and social performance accordingly. According to one manager (C2-I) whose company (C2) had gigantic global companies as suppliers, the situation has two sides to it. On the one hand, a prominent global company often has its environmental and social practices at a good level, but on the other hand, a customer of such a company rarely has any say in the practices. The negotiation power with such a supplier can be minimal and impacts also how well a company can handle its risk management in the area of environmental and social performance without making changes in the supply base itself.

Companies who are positioned close to the end-consumer and thus perceive a higher reputational risk component are also more aware of the supply risk component. The interviewed companies who had more sophisticated sustainability risk management in place because of the perceived reputational risk had detected higher supply risks in the

sustainability area and had taken it into account when planning supply chain strategies and sourcing practices. To summarize, a company's position in the supply chain drives the extent of work towards an environmentally and socially sound supply base and the interest in either the reputational or supply aspects of the risk. The reputational component has more variability than the supply component depending on the exposure to the end-customer and media pressure.

5.1.3. Sourcing's Incentive Structure and Risk Awareness

The third new category, "Sourcing's incentive structure and risk awareness", emerged from the data. The thinking behind recoding and reorganization is explained in this section. Table 15 summarizes the original codes of the category "Sourcing's Incentive Structure and Risk Awareness". Despite the fact that the unit of analysis of this study is the organization, the sourcing organization plays a key role in implementing any environmental or social practices in the supply chain. Sourcing is the closest point of contact to the supply base and can thus influence the environmental and social performance of the suppliers on daily basis. The drive to do so may come from various intra-organizational directions, but sourcing is the implementer, as was made clear from all of the interviews. The proactivity or reactiveness of sourcing to identify and mitigate the risks related to suppliers' environmental or social performance is dependent of their key drivers and incentives in business.

Table 15 Coding Development – Category: Sourcing's Incentive Structure and Risk Awareness

SOURCING'S INCENTIVE STRUCTURE AND RISK AWARENESS
Getting buy-in
Getting sourcing to take action
Availability management
Incidents in disguise
Cost
Risk silos
Sourcing's awareness of E&E

As can be seen from the boom of LCCS, sourcing's primary goal is often cost saving. Sometimes the cost driver overrides risk management targets. Two of the interviewed companies perceived a certain pull-back from LCCS strategies due to heightened risks in operations, which had not been properly considered before implementing the strategies. Sustainability risks came as a surprise to the companies in question, both in the form of reputational and supply risks. In addition to securing goods and services at preferred cost, availability management is the other natural target of sourcing. On the other hand, availability management of supplies was considered in practice to be supply risk management. One of the interviewed companies also pointed out that safety was a key driver in all organizational activity. It also permeated sourcing and was part of the company's incentive structures. Focus on safety can also be considered a type of risk management and, if implemented in the supply chain, it can serve as a form of sustainability risk management as it potentially reduces both reputational and supply risks. Prevention of fire was named by one of the interviewed companies [C5] as an example of this.

From sourcing's perspective, a realized supply risk component related to the environmental and social performance of the suppliers is often hidden. The incidents themselves may show only as delays in supply and the root cause considered to be management's planning failure, while the actual reason for the supply hick-up is in poor people management or problems with environmental regulations. If the sole drivers for sourcing's work are cost and availability, the true root causes may go unnoticed. The interviewed supply/sourcing managers in C5 seemed to perceive the sustainability risks as a grey area, as if they did not directly fit into sourcing's goal structure but were rather "add-ons" to it.

If sourcing's sole focus is on cost and availability management, managing reputational risk may remain a low priority activity. It is often not directly linked in sourcing's incentive structures at all. Reputational risk is one of the key concerns of the sales, marketing, and communication departments. These departments are waking up to the reality that in order for a product to be sustainable, the whole supply chain also has to be sustainable. In very few companies has this cross-functional interaction led to any changes in the incentive structures of sourcing, however. The sourcing organization simply is not measured in this way. Thus, the improvement of the supply chain's environmental and social performance is not always included in sourcing's job descriptions or in personal performance targets, either. Cross-functional target setting naturally depends on the organization itself. In one of the companies, sourcing was deeply embedded in the project organization, giving it a broader target setting frame.

While reputational risk management may seem distant to the sourcing organization, the key sourcing drivers of cost and availability are fully aligned with the supply risk component of supplier sustainability risk. When there had been incidents related to the environmental and social performance of the suppliers in the interviewed companies, and the outcomes of the incidents had been measurable in sourcing terms (cost or availability), there was immediate "buy-in" from the sourcing organization. Quantification of sustainability risk in terms of supply risk changes the perception of these risks from that of a grey area to one that is crystal clear.

If sourcing fully understands the supply risk component of the environmental and ethical performance of the suppliers, it also has full incentive to manage it. Quantification of supplier sustainability risks in monetary and other measurable terms, such as days of delay, helps to highlight these risks in the enterprise risk management tools as well. In order for sourcing to manage the reputational risk component, specific incentives need to be put in place.

5.1.4. Summary

Section 5.1 described the elements which the interviewed managers saw as having an impact on the company's management of risk related to the environmental and social performance of the supply chain. The new categories that emerged and their properties were discussed in detail.

Many insights from the interviews pointed towards various supply chain strategies and sourcing practices being on the top of the minds of the managers when considering the supplier sustainability risks. Supplier profiles and especially LCCS were examples of supply chain strategies that can alter risk level considerably. Supplier requirements, auditing practices and the utilization of risk management systems were the key sourcing practices mentioned by the managers.

A company's position in the supply chain, especially regarding the distance from the end-consumer, seems to determine how the reputational and supply risks are prioritized in the company's agenda. Customer requirements are often mentioned by the managers as a driver for work in the sustainability area. These requirements also highlight the environmental and social performance of suppliers, and the intensity of the requirements seems to depend on the company's position in the supply chain. The negotiation power of the company with its suppliers, on the other hand, has an impact on how much the managers perceive they can influence sustainability risk management in the supply chain.

Sourcing is seen as a key implementer of sustainability risk management of the supply chain. According to the interviews, sourcing is driven by cost and availability. Reputational risk management is not directly seen as being sourcing's primary goal, and thus it requires further incentives. Supply risk related to the environmental and social performance of suppliers, on the other hand, is seen as fully aligned with sourcing's key goals. Sourcing's full attention to these supply risks requires more awareness of the environmental and social root causes of potential incidents in the supply chain.

Chapters 3 and 4 and Section 5.1 offered a descriptive account of the realities of supply chain professionals who are dealing with issues related to supplier sustainability risk. Next, a higher level of abstraction is introduced with higher order codes, theoretical memos and explanations of how they all are related to each other.

5.2. The Prime Movers of Behaviour in Managing Supplier Sustainability Risk

Grounded theorist aims to "generate a theory that accounts for a pattern of behavior which is relevant and problematic for those involved" (Glaser 1978:93). Therefore it is important to go beyond description of findings from the field and search for the *pattern of behaviour*; **what is moving and shaping the management of supplier sustainability risk in companies**. The elements discussed in Section 5.1 are now treated as prime movers of behaviour at a company level and combined with the understanding of which variables of managing supplier sustainability risk they drive. This section presents a higher level of abstraction of the concepts presented in Section 5.1 and integrates previous literature on the topic into the analysis. This account describes the phase of analysis where theoretical coding took place and the relationships that formed between the concepts, comparing categories with properties and categories with one another. The write-up is based on theoretical memos written during and after the data collection. In essence, this chapter answers the question:

What explains the perceived risk levels and the reactive or proactive attitudes towards supplier sustainability risk management at a company level?

Previous literature is taken in at this stage, and each category is constantly compared with the relevant literature. As presented in Section 1.4, this research is positioned at the intersection of supply chain risk management, sustainability risk and sustainable supply chain management. The pool of literature is searched when analysing the findings from this study against previous knowledge.

The coding development is presented in tables showing the data condensation from the previous stage to this stage. The sorting of memos created higher-order theoretical

memos and relationship linkages between categories, later resulting in an integrated framework. Those linkages and memos are presented in illustrations along with their explanations. I use diagrams because they help to integrate the concepts into a formulated theory and help in presenting the findings concisely (Randall and Mello 2012:872) and visually.

The order of concepts changed significantly, especially in the category "Supply chain strategies and sourcing practices", where two new key concepts "vulnerability to outcome" and "vulnerability to event" grouped various codes under them. In the categories "Position in the supply chain" and "Sourcing awareness and incentive structure", changes were not as substantial. "Performance" is a complicated concept that would require further explanation, but throughout the thesis the meaning of performance has been closer to "conduct" than the wider definitions of performance in the literature. I shortened the "Risk related to environmental and social performance of suppliers'" to "Supplier sustainability risk". The new name for the core category (Supplier sustainability risk) is concise and has the essence of the core category. The concept of supplier sustainability risk is also found in the previous literature (Foerstl et al. 2010).

5.2.1. Supply Chain Strategies and Sourcing Practices Create or Mitigate Vulnerability

When sorting the memos of different categories as described in chapters 3 and 4 and Section 5.1, I started seeing the "Supply chain strategies and sourcing practices" category in a new light. The category comprises a lengthy list of concepts, which describes the elements of supply chain management and sourcing practices that, from the practitioners' perspective, are significant in managing the environmental and social performance of suppliers. What I increasingly noticed is that the whole category represents the *drivers of the amount of risk* that the company is susceptible to – that is, the "shock resistance" at a given moment. However, the codes have an impact on two different types of "shock resistance": some make the company susceptible to the adverse events taking place, while some make the company susceptible to the outcome of such events.

I memoed the "shock resistance" of a company to environmental or social incidents in the supply chain and found that it is actually comprised of two elements: how likely the company is to encounter such events and how well prepared the company is to encounters such events. I named these new categories "vulnerability to event" and "vulnerability to outcome". These concepts seemed to encompass the other concepts of "Supply chain strategies and sourcing practices" as properties (see Table 16).

Thus, the amount of supply risk in the supply chain deriving from the environmental and social performance of suppliers is determined by two variables – the supply chain's vulnerability to event and supply chain's vulnerability to outcome. The supply chain's vulnerability to event means the amount of risk that the company will encounter an environmental or social incident in the supply chain. In turn, vulnerability to outcome refers to the amount of risk that the company will encounter adverse consequences in case such an incident takes place in the supply chain. Table 16 presents the coding development from the category "Supply chain strategies and sourcing practices" to the higher order categories "Vulnerability to event" and "Vulnerability to outcome". The change collapsed numerous codes as properties and thus only the topic level change is

shown in the table. A detailed description of meaningful properties in the categories was given in Section 5.1.1.

Table 16 Coding Development – Category: Supply Chain Strategies and Sourcing Practices Drive Vulnerability

SUPPLY CHAIN STRATEGIES AND SOURCING PRACTICES
Vulnerability to event
Sourcing practices
Auditing
Development programs
Supplier profiles
Supply chain strategies
LCCS
Vulnerability to outcome
Shock resistance
Alternatives to supply
Risk mapping
Sourcing's actions

The amount of vulnerability to event is dependent on the supplier profiles. The physical distance of the supplier from the buying company or location of the supply base in developed or developing countries increases or decreases the perceived vulnerability to an environmental or social incident to occur. The LCCS trend has increased the vulnerability to event in many supply chains as in developing countries the values and practices are often not the same as in developed countries. A very vulnerable supply chain may also have trust and control issues related to the differing values of the companies and negotiation power differences between the buyer and the seller. With supply chain strategies and sourcing practices, the vulnerability to adverse events in the supply chain can be reduced. Proactive measures, such as supply chain design, supplier selection, audits and sustainability programs aimed at the supply base can reduce the risk of these adverse events taking place.

Vulnerability to outcome relates to supply strategies, such as the availability of alternative sources of goods and services in case there is an adverse event taking place in the supply chain. The strategy may include alternative suppliers, factories, and countries of manufacturing. General risk management measures such as mapping the risks and then taking actions to manage them reduce the vulnerability to outcome. With solid preventive measures, even if the adverse incident takes place, the outcome of the incident in terms of reputation loss or supply disturbances can be mitigated.

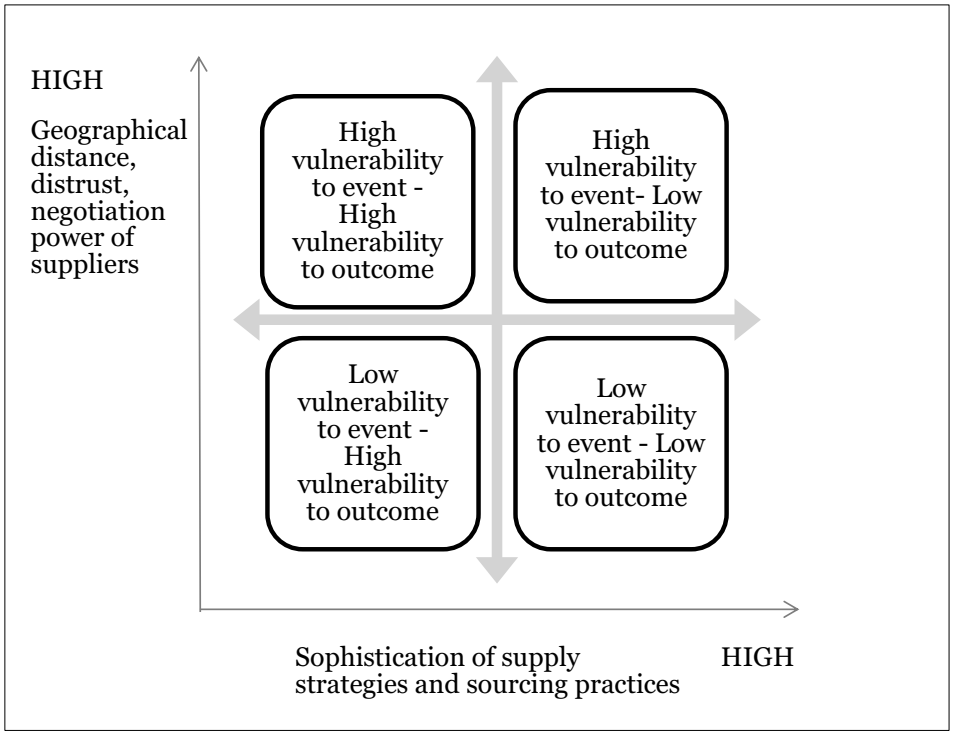

Figure 5 Combinations of Low and High Vulnerability to Event and Outcome

The matrix in Figure 5 shows the different combinations of strategic manoeuvres and risk mitigating actions. High vulnerability to both event and outcome is a result of risky supply strategies combined with low preparedness for shocks in the supply chain. An example could be a Western company who has rushed to implement LCCS strategies without being able to secure good second or third sources for the goods and services. The geographic distance adds vulnerability to environmental or social incidents taking place and, if it is a single-source situation, the supply cannot be secured quickly from other sources, leading to bigger consequences than if there had been alternatives in place. A company with high vulnerability to event but low vulnerability to outcome has most likely engaged in riskier supply strategies but mitigated the risk of adverse outcomes of potential incidents with various sources for the same good or service.

A low vulnerability to both event and outcome is likely a company that relies significantly on local suppliers and has negotiation power with them. Due to this strategy, they may lose in the cost and innovation dimensions to their competitors, but they are safer in terms of reputation and supply. A low vulnerability to event but high vulnerability to outcome describes a situation where the company in question relies on trustworthy sources but also on single sources for goods and services. Here, the so-called black swan incident is the biggest risk: an incident that is considered to be very unlikely but, in the case that it actualizes, the adverse outcomes can be unbearable.

The discovered theory conceptualized the risk using the term “vulnerability”. Vulnerability to event and vulnerability to outcome were used to distinguish a

difference between the risk of an adverse environmental or social incident taking place in the supply chain and the risk of adverse outcomes of such an event. Jüttner (2005:124) states that "Expanding the idea of supply chain risk it can be argued that a supply chains' risk exposure determines its vulnerability." Thus, supply chain vulnerability is defined as: "an exposure to serious disturbances arising from supply chain risks and affecting the supply chain's ability to effectively serve the end customer market". It is therefore clear that vulnerability in relation to risk and supply chains has been previously mentioned in the literature.

Vulnerability to hazard and vulnerability to event are concepts found in humanitarian aid literature. For example, Suarez et al. (2009) have discussed a region's vulnerability to extreme weather events, such as a flood. The materialized flood has different implications for the region depending on the region's vulnerability to the outcomes of the flood, for example, the preparedness of the people and infrastructure for the same event. The humanitarian example can easily be turned into a commercial supply chain event example. The vulnerability of an adverse environmental or social incident, such as a supplier losing its license to operate due to polluting the environment or having a major strike due to poor handling of employees, has different implications for the buying company depending on the buying company's vulnerability to the outcome of the incident, such as whether it has alternative suppliers for the same good or product readily available or not.

Svensson (2000:732) defines vulnerability as "the existence of random disturbances that lead to deviations in the supply chain of components and materials from normal, expected or planned schedules or activities, all of which cause negative effects or consequences for the involved manufacturers and its sub-contractors". Svensson's (2000:731) conceptual framework of the analysis of vulnerability in supply chains highlights the sources of disturbances and the categories of disturbances. The sources of disturbances can be categorized as the events and categories of disturbances as the outcomes. A company has better chances of succeeding in risk management when there is awareness of what risk class they are in fact managing, reducing the grey area significantly.

Colicchia and Strozzi (2012:404) define the terms "robustness" and "resilience" in terms of the supply chain, which closely correlate to the "Shock resistance" concept used in this thesis, as follows: "Robustness and resilience taken together can be treated as a complement to vulnerability. Robustness represents the ability of the system to maintain its function unchanged, or nearly unchanged, when exposed to perturbations. Within supply chain management, robustness can be defined as the extent to which the supply chain is able to carry its functions for a variety of possible future scenarios. Resilience implies that the system can adapt to regain a new stable position (recover, or return close to, its original state) after perturbations". They add that resilience should also be considered a "proactive, structured and integrated exploration of capabilities within the supply chain to cope with unforeseen events".

The literature adds further significance to the concept of "vulnerability", and the outcome/event division also receives support. With constant comparison to the previous literature and emerged concepts, no new categories or properties were added (as long as the previously mentioned "reading outside the field" in humanitarian logistics and borrowing its terminology is not counted as literature used as source of data).

Previous literature confirms that supply chain strategies can either increase risk or mitigate it. Decisions to source products from across the global marketplace can have unintended consequences, exposing organizations to considerable risk (Christopher et al. 2011:67). Naturally, the supply chain strategies are designed with benefits in mind, while there may be blind spots in the risk profile of the decisions.

The risk level of a new supply chain strategy is very difficult to estimate. The whole supply network and its risks are not easy to comprehend. As Harland (2003) states, "in the supply chains examined less than 50% of the risk that could affect the focal company was visible to them. With supply chains becoming increasingly 'virtual' this level of risk visibility will reduce". Thus, supply chain decisions taken from one standpoint, such as low cost, can in effect increase risk in other areas, as was discovered from the interviews of this study. The LCCS strategy trend has increased the distance between the suppliers and the buying company and has exposed companies to more environmental and social risks than what they probably had anticipated when changing the strategy.

Supply chain strategies and sourcing processes can also be used to reduce the supply chain's vulnerability to the outcomes of potential adverse events (Jüttner 2005:123). Processes can either amplify or absorb the effects of risks in the supply chain. For example, the impact of supplier insolvency as a supply risk is either amplified or absorbed by the level of excess capacity held within the chain. "It is also important to note that an outcome for one firm in the supply chain may be a 'risk event' for another firm. For example, a supplier going out of business is an outcome for the supplier and a risk event for the customer firm" (Manuj and Mentzer 2008b:201). Actively analysing the whole supply chain from different risk management categories' perspectives can increase a company's understanding of the consequences of the strategic decisions being considered, thus eventually helping the supply chain become more shock resistant.

As this section states, supply chain strategies and sourcing practices create or mitigate company's vulnerability to adverse environmental or social events in the upstream supply chain as well as the vulnerability to outcome of such events. Next, the second prime mover of behaviour is discussed.

5.2.2. Sourcing's Incentive Structure and Risk Awareness Drive Level of Proactivity

Sourcing is responsible for implementing sustainability risk management initiatives in the supply chain. The prime mover of behaviour in sourcing is cost and availability. The proactivity or reactiveness of sourcing in managing reputational risk depends on the incentive structure of sourcing. The supply risk component is only dependent on risk awareness as it perfectly coincides with the key sourcing drivers. Table 17 presents the coding development connecting the original codes in this category to the newly created ones.

Table 17 Coding Development – Category: Sourcing's Incentive Structure and Risk Awareness Drive Level of Proactivity

SOURCING'S INCENTIVE STRUCTURE AND RISK AWARENESS	
Original codes in the category	***New codes in the category***
Getting buy-in	Incentives
Getting sourcing to take action	Prime mover of behaviour
Availability management	Availability
Incidents in disguise	
Cost	Cost
Risk silos	
Sourcing's awareness of E&E	Awareness

I changed the name of many of the categories to better describe the new perspective I had on the subject. "Getting buy-in" turned into "Incentives", as the buy-in is something I consider to be received for a single, isolated project or initiative, while "incentives" can determine the overarching direction of work at the whole department. Cost and availability are in fact not external desires to "Get(ting) sourcing to take action" but represent the "Prime mover of behaviour" in sourcing. And for simplicity, "Sourcing's awareness of E&E (environment and ethics)" was changed into "Awareness".

When it comes to supply risk, it seems there needs to first be a set of incidents through which to analyse the impact in order to understand the extent of the supply risk involved and how much it costs, and then finally, whether the organization is ready to take action. Sourcing is interested in saving money – not making it. Sales organizations push sustainability to sell more, but sourcing is rather reluctant until they experience increasing costs of raw materials or components as a result of the environmental and ethical performance of the supply base.

If the supply risk is considered important, the key drivers of it are in fact cost and availability. However, if reputation risk is considered the key area where the company should take action with its suppliers, the risk is distant from sourcing's motivation set. Sales are not immediately shown on sourcing's scorecard and are thus not incentivized as much as cost and availability.

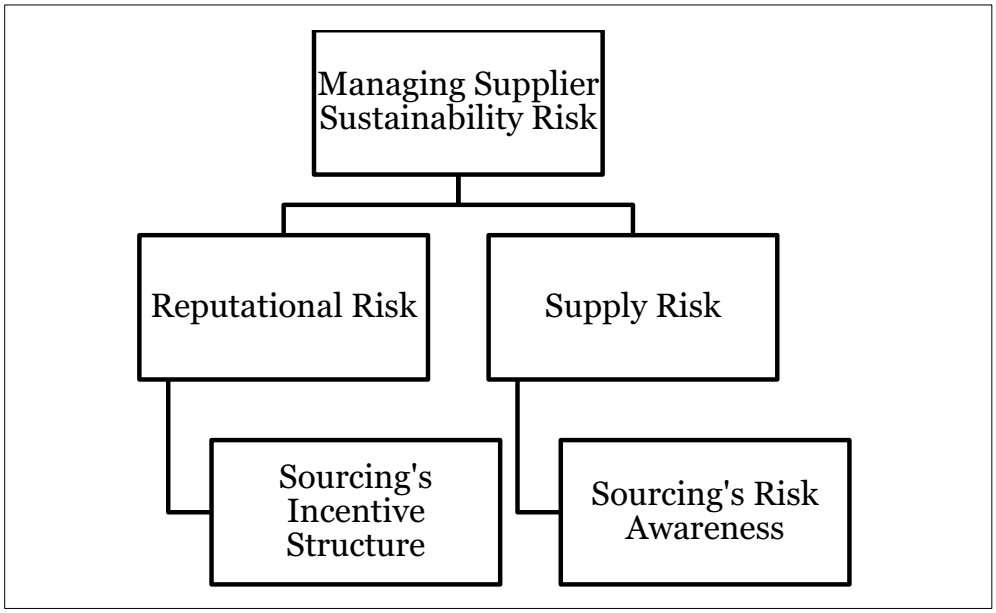

Figure 6 Sourcing's Incentive Structure and Risk Awareness Also Drive Focus

Supply risk could serve as a more valid driver for sourcing to invest in sustainability than reputational risk. Reputation risk is something that comes from "outside" sourcing. Integrating supply risk into sourcing's normal drivers, the outcome of any work done in sustainability could potentially be much more effective. Figure 5 shows the mechanism by which sourcing's incentive structure and sourcing's risk awareness drive the management of supplier sustainability risk and also its focus.

Cost and availability have been named as the key drivers of sourcing, while sustainability is often not included or has lower priority. During recent decades, LCCS has been a clear trend in supply chain management and sourcing. Manuj and Mentzer (2008a:134) state ". . . if global supply chains are complex and difficult to manage, why would a firm choose to go global? The answer is that global configurations provide access to cheap labour and raw materials, subsidized financing opportunities, larger product markets, and the governments of different countries may sometimes offer widely varying inducements (e.g., tax abatements) to attract new business. Further, they may also deny sanctuaries to competitors by locking in suppliers and/or customers". The increase in complexity is overridden by the opportunity to reach a lower cost base for the product. Sourcing is incentivized to search for the lowest cost alternative, while the increased risk level may not be monitored. In the case of managing the environmental and ethical performance of suppliers, the complexities increase significantly and require sourcing's attention.

In case there is an environmental or social incident taking place in the supply chain, sourcing is then called for help to prevent damage to the reputation. The work then often becomes "fire fighting" and is not aimed at longer-term improvement. Sourcing may not be incentivized to take longer-term actions as they "get paid" for the aims of cost savings and availability management. Supply risk can then be a better driver for sourcing as it is in their own terms, while reputation is something more of a concern of the sales, marketing and communications functions.

Paulraj (2011:19) studied "the role that internal resources/capabilities can play in managing sustainable supply practices as well as organizational sustainability. Surprisingly, the hypothesis suggesting that strategic purchasing could moderate the relationship between enviropreneurship and SSM [sustainable supply management] was found to be insignificant. This result suggests that managers need to realize that a strategic purchasing function alone cannot help in achieving the lofty goals of sustainability". There is a potential connection between the missing moderation effect of strategic purchasing to sustainable supply management and missing sourcing incentive structure. Strategic purchasing function, or sourcing, could indeed help in achieving the "lofty goals of sustainability" when sufficiently incentivized to do so. To summarize, sourcing as the key implementer of actions towards supplier sustainability can be motivated to be proactive by ensuring incentives to mitigate reputational risk and increasing sourcing's awareness of the supply risk related to supplier sustainability. Finally the third prime mover of behaviour in managing supplier sustainability risk is presented in the next section.

5.2.3. Position in Supply Chain Drives Focus

A company's focus of attention in managing supplier sustainability risk in terms of either reputational risk or supply risk or both depends partly on the company's location in the supply chain. The closer the buying company is to the end-consumer, the more focus there is on reputational risk management. There is a certain pressure from the consumers and the media on global brands. This initiates a process of image protection that has an impact on the way environmental and social issues are dealt with within the organization. Increasingly, the media is paying attention to the supply chain of the products and is more and more interested in the origin of the goods, the production methods and the wellbeing of employees upstream the supply chain. This is creating pressure from the reputational perspective to try to influence the upstream supply chain members' environmental and social performance. The type of risk the organization is focusing on has a significant impact on how proactively the environmental and social performance of supply base is managed. This is linked to the sourcing organization's ultimate goal-setting and incentive structure, as mentioned above. Regarding the category "Categorizing sustainability risks", I memoed that the categories of sustainability risk ("Reputational risk" and "Supply risk") actually represent the "Focus of action" of the organization. "Distance from end-consumer" drives the "Position in the supply chain" and has an impact on the focus of attention. The minor changes in the categories are presented in

Table 18 Table 18.Coding Development – Category: Position in the Supply Chain Drives Focus

POSITION IN SUPPLY CHAIN
Focus of action
Reputational risk
Supply risk
Distance from end-consumer

The position in the supply chain has only a slight impact on the management of supply risk related to the environmental and social performance of the suppliers. These risks are in fact similar all along the supply chain. What creates the slight difference comes indirectly from the focus on reputational risk. A company who is already paying

attention to the environmental and ethical performance of its suppliers due to the reputational risk component is likely to realize risk related to supply as well and thus focuses on it more. Nevertheless, managing the supply risk is as important to all companies, regardless of the position in the supply chain.

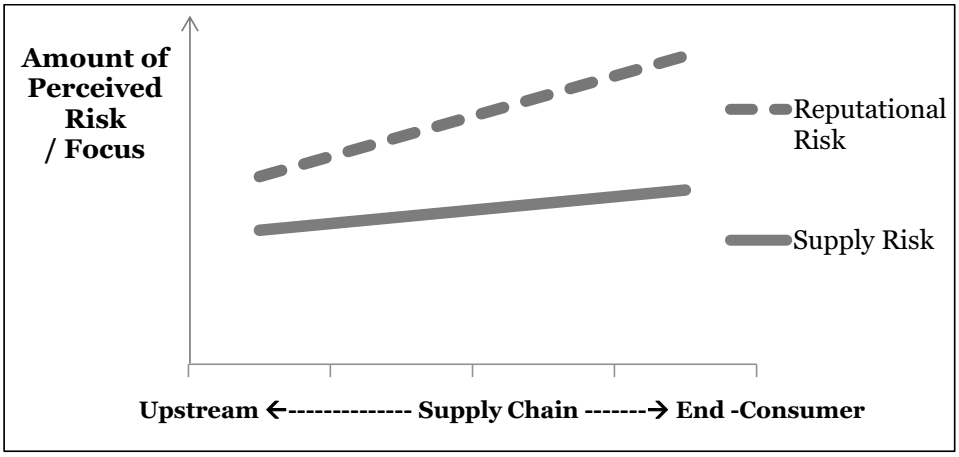

Figure 7 Reputational Risk and Supply Risk Focus Depend on Position in Supply Chain

As Figure 7 graphically illustrates, distance from the end-consumer reduces the focus on both reputational and supply risk related to the environmental and social performance of the supplier. The focus on reputational risk is impacted much more than the focus on supply risk. Supply risk focus is indirectly related to the position in the supply chain via the awareness of environmental and social issues potentially causing supply risks.

From the sustainability perspective, it can be seen that companies who have closer contact with the end-consumer have more pressure to be active in introducing more sustainable practices. Carter and Easton (2011:46) saw that in the sustainability literature, the focus has been on the consumer product and transportation industries. Closeness to the consumer has driven early adoption of environmental and social initiatives. Reuter et al. (2010:59) studied the competitive advantage of sustainability and sustainable supply management and acknowledge that "the greater distance to private end users may lead to different requirements regarding social and ecological sustainability compared with toy manufacturers and personal computer assemblers. Also the companies' global sourcing focus on Asia may lead to insights specific to this industry". Thus, in their suggestions for future research they have acknowledged the same factor as in this study's theoretical sampling –"distance from end-consumer". The consumer product industries are facing pressure from the end consumers and the media and are thus paying more attention to their reputational risk management. This also indirectly affects the supply risk component's prominence in terms of focus.

The supply risk component of supplier sustainability risk does not in practice seem to differ much in terms of the company's position in the supply chain. The amount of risk could potentially differ for other reasons that did not come up in this research. However, companies that are closer to the end-consumer may have more on-going activities to mitigate supply risks related to the environmental and social performance of suppliers simply because they are more aware of them due to pressure to mitigate the reputational risk component. At the time of writing, no previous literature was found

that deals with the different approaches to the reputational and supply risk components of supplier sustainability risk.

5.3. Summary

This chapter described the process of arriving at the categories that aim to explain the variation in managing supplier sustainability risk across companies; the prime movers of behaviour. Also the elements of managing supplier sustainability risk that are perceived to be problematic and that form the core of concerns of managing supplier sustainability risk, were presented, namely the vulnerability to outcome/event, focus on reputational/supply risk and proactiveness of managing supplier sustainability risk. The description aimed at revealing the thinking and conceptualization process and relied on memos written during the analysis. The list of codes shortened and changed significantly during this phase. Next, Chapter 6 pulls these categories together in a framework, which further elaborates on the relationships between them, discusses the previous literature against the emerged framework and finally describes the findings from the member checking workshop (Study 3).

6 THEORETICAL FRAMEWORK: MANAGING SUPPLIER SUSTAINABILITY RISK

The previous Chapter 5 provided a lead-in for the framework of managing supplier sustainability risk with its three prime movers of behaviour. This chapter (Section 6.1) puts those three categories together in a theoretical framework that explains the perceived variation in managing supplier sustainability risk at the company level. Section 6.2 discusses previous literature against the emerged framework. A member checking workshop and its findings end the chapter with Section 6.3.

6.1. Managing Supplier Sustainability Risk

In this section, the three identified elements that explain much of the variation in the company's perceived amount of risk, focus of attention and proactiveness of actions to manage the risk are arranged in a form of a framework.

Figure 8 shows the relationships between the three elements of managing supplier sustainability risk at a high level. A company's position in the supply chain drives the organization's weighted focus on reputational and supply risks, or the **"Risk focus"**. A position close to the end-consumer gives more weight to the reputational risk component, while the supply risk component is perceived as more stable. The supply chain strategies and sourcing practices affect both vulnerability to outcome and event, which again determine the **"Amount of risk"**. How much sourcing is incentivized to act on reputational risk or is aware of the potential adverse effects of environmental and social incidents in the supply chain determines the overall level of **proactive or reactive** management of these risks. These three elements explain the perceived risk levels and the reactive or proactive attitudes towards risk management when it comes to the environmental and social performance of the supplier – that is, supplier sustainability risk.

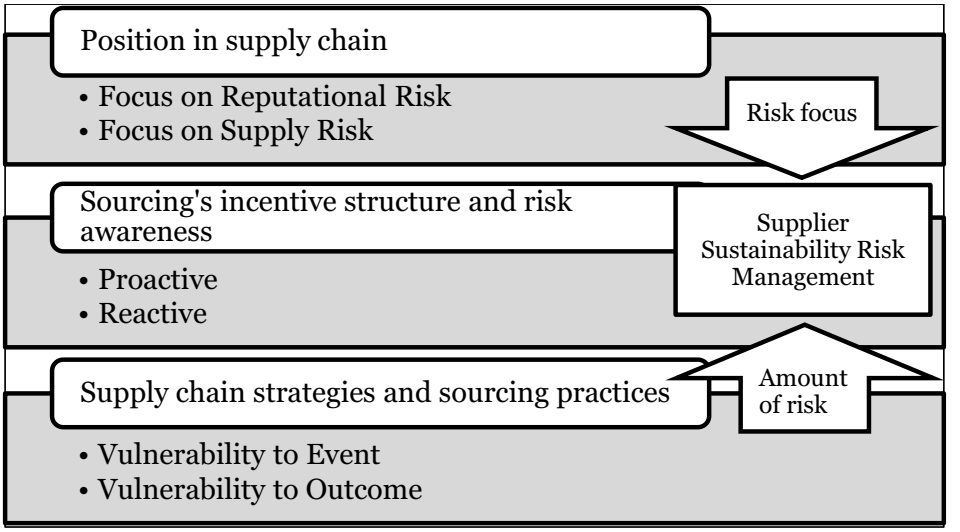

Figure 8 Elements of Supplier Sustainability Risk Management

The theoretical framework of "Managing Supplier Sustainability Risk" (Figure 9) further elaborates the relationships between the theoretical codes. Compared to Figure 8, the framework (Figure 9) specifically highlights how the supply chain strategies affect the vulnerability to event and sourcing practices the vulnerability to outcome as well as how sourcing's incentive structure has a linkage to the company's focus on managing reputational risk, while sourcing's own risk awareness enhances the supply risk management focus. The framework also highlights the link between sourcing practices and company's proactiveness/reactiveness in managing supplier sustainability risk.

In the framework, the key concerns of managing the supplier sustainability risk at a company level consist of the following variables:

1. Vulnerability to Event/Outcome

   - Vulnerability to Event is the amount of risk of encountering an environmental or social incident in the supply chain

   - Vulnerability to Outcome is the amount of risk of adverse consequences in case and environmental or social incident takes place in the supply chain.

2. Focus on Supply/Reputation

   a. Explains which risk categories drive the action in the organization.

3. Proactiveness/Reactiveness

   a. Explains how proactive the company is in managing supplier sustainability risk.

The above categories are presented in a box in the middle of the Figure 9. Boxes in the middle are on the **same level**, as they constitute the critical, problematic variables of managing supplier sustainability risk at company level from the managerial perspective. The boxes do not have visible linkages as this study did not look into the correlations between them. However, while vulnerability to event/outcome is in effect the amount of risk the company experiences, that naturally impacts weather the focus of attention or proactiveness or reactiveness to risks are meaningful in the first place. In case the vulnerability is zero then there is no need to be proactive or consider to focus of action to either supply or reputational risk. In that specific example there is a natural order in the boxes from top to bottom.

The factors or prime movers of behaviour that are seen to influence the above mentioned three variables are:

1. Supply chain strategies and sourcing practices
2. Position in the supply chain
3. Sourcing's incentive structure and risk awareness

The above three categories are the factors "external" to managing supplier sustainability risk, but are the key drivers to how the critical, problematic areas of managing supplier sustainability risk turn out at company level. Starting from the box at the top of the Figure 9: "Supply Chain Strategies and Sourcing Practices" the linkages are as follows:

- The arrow from "Strategies" to "Event" indicates that supply chain strategies, overall, have an impact on how vulnerable the company is to environmental or social event to take place in the supply chain.
- The arrow from "Practices" to "Outcome" illustrates that sourcing practices, depending on their sophistication, either mitigate or increase the risk of adverse outcomes from the potential environmental or social event taking place in the supply chain.
- The arrow from both "Strategies" and "Practices" to both "Event" and "Outcome" demonstrates that both supply chain strategies and practices have, to some extent, an impact on both vulnerability to outcome and vulnerability to event.

The box "Position in Supply Chain" at the lower left corner of the Figure 9 has the following link:

- The arrow from "Position in Supply Chain" to both "Supply" and "Reputation" demonstrates that the company's weighted focus on reputational risk and/or supply risk component is influenced by how far upstream from the end-consumer the company is positioned in the supply chain.

The box "Sourcing's Risk Awareness/ Incentive Structure" in the lower right corner of Figure 9 has the following linkages:

- The arrow from both "Risk awareness" and "Incentive Structure" to "Proactiveness/Reactiveness" depicts that both sourcing's awareness of the

supply risk component of supplier sustainability risk and sourcing's incentives to manage the reputational risk component shape the proactiveness or reactiveness of the company in management of supplier sustainability risk.

- The arrow from "Risk Awareness" to "Supply" indicates that the company's focus on managing the *supply component* of supplier sustainability risk is influenced by sourcing's awareness of environmental and social events causing such risk.

- Arrow from "Incentive Structure" to "Reputation" demonstrates that sourcing's incentive structure shapes the focus of managing *reputational component* of supplier sustainability risk.

Finally, there is an arrow that reaches from the box in the middle, Managing Supplier Sustainability Risk to one of the external factors:

- The arrow from "Proactiveness/Reactiveness" to "Sourcing Practices" indicates that the understood sense of urgency to act on environmental and social concerns in the supply chain translate into enhanced sourcing practices in this area, for example auditing and supplier selection.

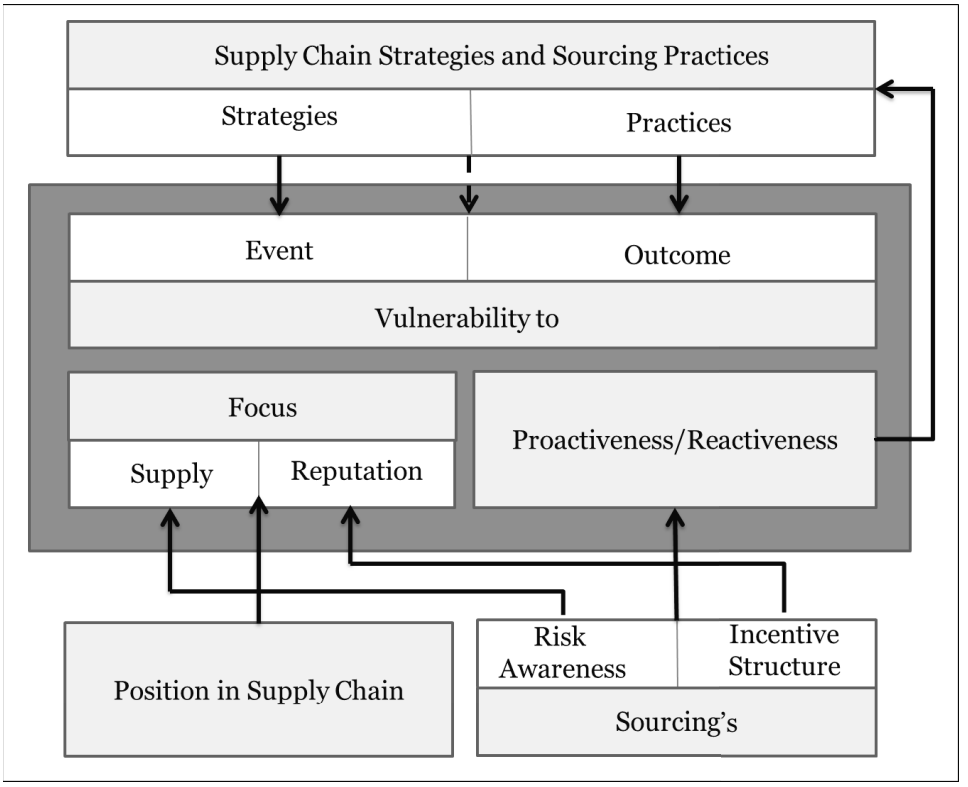

Figure 9 Managing Supplier Sustainability Risk

To summarize, in the framework, the items within the box in the middle represent how much supplier sustainability risk the company is facing, what the focus of risk management in the company is and how proactive or reactive the operations are towards supplier sustainability risks, while the boxes outside represent the factors responsible for the variation in them. The likelihood of an event, an environmental or social incident in the supply chain which can potentially harm the reputation or supplies of the company, is determined by the supply chain's vulnerability to event, which again is an outcome of the supply chain strategies applied by the company. The event itself does not necessarily lead to risks being realized. However, the probability of such outcomes is determined by the company's vulnerability to outcome. The vulnerability to outcome is affected by a company's chosen sourcing practices.

The potential outcome of the event can be the realization of either supply or reputational risk or both. The company's position in the supply chain leads to a certain focus on managing either reputational or supply risk or a certain weighting of both. As discussed earlier, the position close to the end-consumer results in an enhanced focus on the reputational element of risk. The focus on and actual management of these risks is not necessarily the same. What drives the actual management of risk is in the hands of sourcing. Sourcing's incentive structure has an effect on whether the reputational risk component has the power to enforce actions in the supply chain. Sourcing's awareness of the supply risk component, however, brings the focus closer to the sourcing organization's key drivers of cost and availability and is thus more easily received into sourcing's agenda.

The overall proactivity or reactiveness of the sourcing organization in managing supplier sustainability risk is determined by two qualities of the sourcing organization. The awareness of environmental or social risks in the supply chain increases the proactivity of supply risk management, while the proactivity of reputational risk management requires additional incentives to be implemented. Again, these have an impact on the design of sourcing practices in general.

In this study, supply chain strategies represent the wider decisions related to the supply base, such as make-or-buy decisions, fundamental decisions to engage in LCCS, and the like. Sourcing practices, on the other hand, are in this study the strategic decisions of a specific sourcing category, such as how many alternative suppliers a certain good, service or raw material has and who the suppliers for them are. The key properties of supply chain strategies and sourcing practices were described in detail in Section 5.1.1.

The managing supplier sustainability risk framework highlights the amount of risk, the focus of risk management and the proactive vs. reactive attitudes towards risk management as elements at the core of what the managers experience as problematic in managing supplier sustainability risk. The framework shows that the factors that contribute to this experienced "grey area" are the supply chain strategies, sourcing practices, position in the supply chain and sourcing's incentive structure and awareness of risk. These factors are not always linked to managing supplier sustainability risk, and thus this framework can give valuable insight to analysing the company's situation regarding the possibilities and constraints of acting on supplier sustainability risk. Table 19 summarizes the definitions of the framework's concepts. In the next section the relevant literature is discussed.

Table 19 Definitions of Framework's Concepts

CONCEPT	DEFINITION
Vulnerability to outcome	The amount of risk of encountering an environmental or social incident in the supply chain
Vulnerability to event	The amount of risk of adverse consequences in case an environmental or social incident takes place in the supply chain
Environmental or social incident = event	An adverse incident that has environmental or social consequences, e.g. operating against laws and regulations or misconduct vs. supplier code of conduct
Position in supply chain	"Distance from end-consumer", i.e. where in the supply chain the company is positioned in continuum of upstream–downstream, closer to raw material production or the end-consumer
Proactiveness/Reactiveness	Explains how proactive the company is in managing supplier sustainability risk.
Sourcing's incentive structure	Explains the drivers for the sourcing function in an organization
Sourcing's risk awareness	The sourcing function's level of awareness of risks inherent in operations
Focus	Explains which risks drive the action in the organization
Reputational risk	In this research, the risk of harming a company's image due to supplier's environmental and social performance
Supply risk	In this research, the availability at risk due to supplier's environmental or social performance

6.2. Previous Literature

The previous literature was reviewed through a focused key word search in academic databases. Searches on "supplier sustainability risk", "sustainable supplier management", "green supplier management", "sustainable supply chain management", "sustainability risk", "supply chain risk management" and "global sourcing risk management" with a specific focus on literature reviews performed on the topics

enabled the following discussion on intersections of the emerged framework and previous literature. The same method was utilized in Chapter 5 to identify the relevant literature to compare the emerged elements of the framework to. This section will discuss the literature in relation to the full framework and its implications. Furthermore, in the introduction (Chapter 1) a slightly broader set of key words, including (in addition to the above): "sustainability", "CSR", "risk management" and "supply chain management", were used to deliver an introduction to the positioning of this thesis. However, this section offers a more focused comparison of the key themes of the emerged framework to the previous literature.

6.2.1. Sustainable Supply Chain Management and Supply Chain Risk Management

Sustainable supply chain management was selected as the broad topic for this thesis before entering the field. It has been established that engaging in sustainable supply chain management is today considered a necessity, or license to do business, allowing managers to finally take tangible actions towards sustainable supply chains (Carter and Easton 2011). At the same time, supply chain risk management grows in importance as the vulnerability of supply chains increases (Normann and Jansson 2003).

There are similar root causes for the recent increased interest in both sustainable supply chain management and supply chain risk management. Both claim that longer, more complex supply chains reaching to emerging markets have initiated the need to investigate supply chain management practices in these areas further. And what drives the development of supply chains in this direction is the inherent cost focus of supply management and sourcing.

Manuj and Mentzer (2008a:134) explain the appeal of global supply chain configurations to be that they "provide access to cheap labour and raw materials, subsidized financing opportunities, larger product markets, and the governments of different countries may sometimes offer varying inducements (e.g. tax abatements) to attract new business". At the same time, according to Christopher et al. (2011:72), both risk of disruptions in supply and quality challenges are associated with global sourcing and are widely documented. However, there have not been enough studies on how these two are related to each other and whether there are trade-offs between them. Increased vulnerability of event, that in this study has been connected to supply chain strategies, mainly LCCS and similar ventures to "unknown" locations and suppliers, can be seen as part of the general increase in complexity of supply chains. Research has found that as the complexity of a supply chain (or network) increases, the risk increases as well (Harland 2003). Reuter et al. (2010:46) confirm that "sustainability criteria are still not sufficiently and effectively embedded in MNCs' [multinational companies'] global supplier management process" and that sustainable supplier management should reach out to impact the sustainability of the whole supply base.

This study has focused on the elements of complexity that have an impact specifically on supplier sustainability risk. Out of all supply chain decisions, sourcing decisions could have the biggest impact on this, while "Global sourcing trends are making supply chains longer and more fragmented and this is exposing firms to greater costs and risks" (Christopher et al. 2011:77). Christopher et al. (2011:72) state that in their sample the majority of the companies revealed lower cost as "one of the most important factors for their global sourcing strategy". In addition, Spekman and Davis (2004:415) consider "price reduction" to be the key metric in an organization to measure success in

supply chain management: "Traditional supply chain thinking was based on the premise that lower prices add value". This study revealed that when sourcing is driven predominantly by cost and availability, as traditionally is the case, the efforts to improve supplier sustainability are likely to be minimal.

The previous literature highlights the globalization and changing supply chain strategies as a source of increased risk in the supply chains. The supply chain strategies of LCCS integrate well with sourcing's main goal of cost savings, while the sustainability risk is at the same time heightened. Next the sourcing practices that potentially mitigate risk are discussed in light of the previous research.

6.2.2. Sourcing Practices

Sourcing's role as the key implementer of supply chain risk management and sustainable supply chain management has been acknowledged. Blome and Paulraj (2013:567) state that "given that purchasing is a key boundary-spanning function in the successful management of the supply chain, it can play a unique role in enabling comprehensive CSR objectives within firms". This research does not go into detail on what the sourcing practices or sustainable supplier management practices are for mitigating the supplier sustainability risk or encouraging suppliers to implement more sustainable practices, but there were many such practices mentioned in the interviews as well as collected in the secondary data. Rather, the focus of this study is on understanding managers' perceptions of what explains the variation in the behaviour or general attitude of companies regarding supplier sustainability risk management, and therefore the actual practices were in the final framework left at the topical level. There are various studies (e.g. Reuter et al. 2010, Bask et al. 2013) that complement the picture regarding supplier sustainability risk mitigation practices. Reuter et al. (2010:45) extend insights of the dynamic capabilities view to understand how sustainability is integrated in supplier management in purchasing and supply management, while Bask et al. (2013:380) study consumer preferences for sustainability and take a supply chain perspective on it, which adds to the understanding of what companies should focus on to reach competitive advantage in supply chain sustainability efforts.

Supply chain risk management is also often discussed in terms of actual strategies designed for risk management. Manuj and Menzer (2008b:216) state that managers responsible for supply chain sustainability management should understand risk management strategies such as postponement, speculation, hedging, control/share/transfer, security and avoidance. This discussion derives directly from financial risk management and logistics. Manuj and Menzer (2008a:142) talk in financial terms about hedging supply chain risks. They refer to globally dispersed portfolio of partners. This is similar to the avoidance of single supply situations mentioned by many of the interviewed managers (C1-I, C2-I, C4-I) and is one of the drivers of vulnerability to outcome. When a company has a geographically disperse supply base, even if the "event" realizes, the outcome may not be extensive due to alternatives to supply.

Christopher et al.'s (2011:77) research showed significant variability between firms in practices implemented for global sourcing risk mitigation. Sourcing practices can, according the emerged theory, help mitigate supplier sustainability risks, including both reputational and supply risks. Foerstl et al. (2010:118) propose that "mature and sustainable supplier management capabilities are a source of competitive advantage in

terms of lower exposure to reputational risks and enhanced operational performance". If mitigated supply risks are thought to belong under enhanced operational performance, this is fully aligned with the outcome of this research. The emerged theory does not take into consideration the benefits to competitive advantage. Competitive advantage drives the sustainable supplier relationship management practices and is thus interesting to understand.

In their literature review, Gimenez and Tachizawa (2012) look at supplier assessment tools and collaborative practices to determine the impact of these mechanisms on sustainable performance and the enablers of these mechanisms. The enablers they divide into internal and external. "The internal enablers identified are: the firm's environmental commitment, senior or top management support, the availability of resources, the strategic role of the purchasing function, the development of supply management capabilities of purchasing personnel, the role of the project leader and appropriate performance measurement systems. The external enablers are mainly related to the characteristics of the supply chain relationship and the issues cited are: trust, national culture, logistical and technological integration and clarity of objectives" (537). The framework presented in this study goes deeper into the internal factors of sourcing and does identify the same need for appropriate performance measurement systems as Gimenez and Tachizawa (2012) found. Regarding external enablers, the trust and national culture were highlighted in this study in the overall impact of chosen supply chain strategies to the company's vulnerability of event.

While sourcing with its practices is at core of this thesis, in addition to understanding the full scope of the company's supply chain strategies and position in the supply chain, there are a few studies that have specifically looked at supplier sustainability risk. The concept "supplier sustainability risk" is employed in the literature by Foerstl et al. (2010). Leppelt et al. (2013:94) elaborate on the topic within the same industry context and formulate a concept of sustainable supplier relationship management (SSRM). They define SSRM as the "buying-firm-induced effort for coordinated and cooperative actions over an extended period of time, in order to achieve increased levels of sustainability in the dyadic supply chain for the benefit of both firms" (95). They look at the practices of the leading companies in the area as well as what is caused by not engaging in SSRM. The framework presented in this research goes beyond the acknowledged and purposefully constructed SSRM practices and looks at the existing realities of the company's situation, such as its position in the supply chain, the broader supply chain strategies and sourcing practices in general, which affect the company's motivation to engage in SSRM in the first place. It is important to understand what the company's situation is and what drives its actions before advocating SSRM practices. Risk as a motivator for action can be valid, especially in the case of sourcing's motivation structure. What would make sourcing put effort in sustainable supplier management unless there was clear incentive to do so? Leppelt et al. (2013:94) found that there were three key influential factors which motivate sustainability leaders and constrict sustainability followers what comes to SSRM practices. Risk was one of the categories, in addition to corporate strategy alignment and the company's listing in sustainability indices. Especially in the case of motivating sourcing to implement the practices, this study argues for the importance of the risk perspective in general, and supply risk in particular. Two other influential factors by Leppelt et al. (2013) could be incentivized separately in sourcing to cause the desired action. Moreover, Spekman and Davis (2004:415) acknowledge the impact of a rewards system that "favors individual unit thinking over cross-functional and cross-firm thinking".

Hofmann et al. (2013) investigate how sustainability-related supply chain risks materialize for the focal firms. While discussing the supply chain, however, they focus on the risks originating in the upstream area of the chain only. They highlight the importance of also looking at stakeholder reactions, not just disruptive events. With traditional means, the risks are often underestimated and mismanaged. They define sustainability-related risk as "a condition or a potentially occurring event that may provoke harmful stakeholder reactions" and sustainability-related supply chain risk (in short supply chain sustainability risk) as a sustainability risk within a focal firm's supply chain" (9). This research highlights the distinction between demand and supply side risks, while Hofmann et al. (2013) acknowledge them and bundle them under the newly created definition (above). "In addition to purely operational and purely sustainability-related risks, there are operational risks that have the potential to be sustainability risks at the same time" (9).In the conceptual framework presented in this research, the distinction is made between vulnerability to event and vulnerability to outcome. The root cause is thought to initiate both potential disruption and/or potential stakeholder reaction. Hofmann et al. (2013) make a distinction between a disruption-driven "ordinary supply chain risk path" and a stakeholder-driven "supply chain sustainability risk path", both leading to damage to focal firm at the "effect level". In the outcome of this research, the risk paths are seen to collide earlier: sustainability-related risks at the incident level can cause both disruption and stakeholder reaction, both potentially damaging the focal firm.

The original coding of this study included various codes relating to sourcing practices of managing supplier sustainability risk. Sophisticated sourcing practices can help to mitigate risk, specifically to reduce the company's vulnerability to adverse outcome of an event taking place in the upstream supply chain. Next the literature is discussed from the perspective of different industries, sourcing categories and risk focus.

6.2.3. Industries, Sourcing Categories and Risk Focus

The supply chain risk management and sustainable supply chain management literature deal with a broad range of industries. Carter and Easton (2011:54-55), in their literature review of sustainable supply chain management literature, posit that from an industry context perspective, much focus has been on consumer product industries and the transportation industry for closeness to the consumer and size of carbon footprint, respectively. This study has taken "distance from end-consumer" as one of the theoretical sampling criteria and thus provides variation in the industries in the sample. The industries present in this study varied from information and communication technologies to the marine and energy industries. Position in the supply chain is identified as a key factor in predicting the importance of the reputational risk component of supply chain sustainability risk in the company in question. A limiting factor of freely choosing an industry to focus on in this study was the delimitation of the sample to Finland-based companies, which were also to be large enough to have dedicated sustainability function.

The approach to sustainable supply chain management can vary in different sourcing categories. Pagell et al. (2010:58) project the switch from supply chain management to sustainable supplier chain management as the dominant logic. They contribute to the traditional purchasing portfolio thinking (Kraljic 1983) where commodity suppliers are treated differently from strategic suppliers by adding the sustainability dimension. They find that treating commodity suppliers as strategic does not necessarily increase the cost and risk, but on the contrary increases profits in long term. This research does

not engage in a discussion of purchasing portfolio decisions and treats sourcing practices similarly regarding the whole supplier base. This may not be realistic and does ignore the variation within the supplier base. In purchasing portfolio thinking, commodity sourcing is driven by price and availability while partnership focus drives the more strategic categories.

This study identified two different components of supplier sustainability risk, namely, reputational risk and supply risk. Companies in the study were focusing, to varying degrees, on the two depending on their position in the supply chain, that is, the distance from the end-consumer. Pagell et al. (2010:68) state that "No longer is the emphasis just on risk to profits, but now managers must consider risks to one or more elements of the TBL [triple bottom line]. Hence, for instance, supplier non-conformance due to unsafe working conditions might have minimal direct short-term profit penalties but could have devastating effects on the firm's social performance. The possible risks have expanded but the recommendations remain the same for strategic suppliers". It is evident that in the above, Pagell et al.'s thinking on the reputational risk element is considered separately from the supply component, and profit penalty is considered from the demand side only. Otherwise, it's not possible that non-conformance would lead to only "minimal short-term profit penalties". Reputational damage to corporate image is considered the key outcome of adverse events in the supply chain. For example, Reuter et al. (2010:45) state efforts to ensure supplier sustainability as means to "avoid the risk of reputational damage to the buying company". This study's key contribution is the insight on supply risk related to the environmental and social performance of the suppliers, which has been seldom brought up in the literature.

Supply chains are vulnerable to both changes in customer preferences and disruptions, and thus resilience is a required property of a successful supply chain (Carvalho et al. 2012:49). From supply chain agility literature's point of view, strategic sourcing and a firm's strategic flexibility have been argued to be the key drivers for agility (Chiang et al. 2012:49). These two dimensions are also found in this research to have an impact on the way supplier sustainability risks are managed. Agility and flexibility relate closely to managing the disruption risks present in extended, global supply chains. Chiang et al. (2012:50) describe the difference between agility and flexibility as follows: "while flexibility concerns the manager in terms of what kind of processes should be designed, what kind of resources should be obtained and what investments should be made to reduce time, cost or performance penalties to adjust to changes, agility is more specifically about whether the organization has made investments that are aligned with the competitive demands of the environment". Vulnerability to event can be high, but strategic sourcing and a firm's strategic flexibility in supply chain strategies can mitigate vulnerability to outcome. The outcome of potential disruptions can be significantly reduced with heightened agility. Next the reputational and supply components of supplier sustainability risk are further contrasted against previous literature.

6.2.4. Reputational vs. Supply Component of Risk

This study examines supplier sustainability risk from the perspective that it has two distinct categories, reputational and supply component of risk. The previous literature has mainly considered the reputational threat to a company. Ahi and Searcy (2013:329) conducted a comparative literature analysis of definitions for green and sustainable supply chain management. According to them, the literature is increasingly adopting a

triple bottom line approach to sustainability. This study takes the Elkington's (1998:37) triple bottom line as base for defining sustainability but does not make large distinctions on the three goals. In addition, Spekman and Davis (2004) discuss corporate social responsibility as one of the dimensions of supply chain risk and consider it to "the extent to which supply chain members' reputation and image can be tainted by the actions of another member who engages in activities that result in public sentiment or outcry or, even worse, is accused of criminal behaviour where liability extends up and down the supply chain" (418). Supplier sustainability risk is seen from both environmental and ethical perspectives as well as inherently from an economic perspective. Risk management, in this case either reputational or supply risk, is considered to show at the economic bottom line.

Carter and Rogers (2008:356) list the supporting facets of sustainable supply chain management in addition to triple bottom line to be risk management, transparency, strategy and culture. They look at strategy from a corporate perspective and call for integration of sustainability in core business strategies. However, they do not mention the supply chain strategies that would be made with sustainability as a variable. This research argues that riskier supply chain strategies, such as LCCS strategies, increase the vulnerability to adverse environmental and social incidents in the supply base. The strategy component was put forth in Reuter et al. (2010) as they state that the global sourcing geared towards emerging countries increase the supplier sustainability risk. Risk management as a supporting facet of sustainable supply chain management is viewed by Carter and Rogers (2008) from contingency planning perspective, but they also acknowledge the potential supply disruptions. This research examines risk management at the core of supplier sustainability management and considers the strategies and practices influencing it.

Reuter et al. (2010:58) find that "the structure of the SGSM [Sustainable Global Supplier Management] processes is not contingent on the perceived stakeholder pressure or the sustainability content to be covered by SGSM" and that diversification may occur after establishing the agenda. A sense of urgency to act in order not to lose the first mover advantage can also be seen. This research has shown that there are different forces driving the attitude of practitioners to be active in supplier sustainability risk management than stakeholder pressure and specific sustainability content. Position in the supply chain is potentially reflected in the company's focus of risk management and moderated by sourcing's incentive structure and risk awareness. The risk is also perceived differently depending on the broader supply chain strategies and current sourcing practices. The current literature does not necessarily take into account a different position in the supply chain or sourcing's internal factors that affect the enthusiasm to actually enforce and implement sustainability in the supply chain.

Carter and Rogers (2008) elaborate on the challenges in implementing sustainability. They propose that "firms begin to take more holistic view of the costs and benefits associated with social and environmental projects". They also state that there are activities that are both economic and sustainable. According to this study the actions aimed at mitigating the supply risk component of supplier sustainability risk are definitely economic as well. Carter and Rogers (2008:371) state that "true sustainability occurs at the intersection of all three areas – environmental, social and economic – and includes multiple activities". They talk about conflicting social, environmental and economic goals due to a disconnect from strategy and a fragmented approach (378). Integration with strategy is shown in this study to mean a deeper integration of decisions such as supply chain geographic decisions, generic sourcing's practices and incentive structure.

Christopher et al. (2011:67) classify global sourcing risks into four categories: supply risk, process and control risks, environmental and sustainability risks and demand risks. Their approach differs from previous frameworks, such as that of Manuj and Menzer (2008a:133), by including the issues of sustainability. According to their definition, the sustainability risk "refers to increasing vulnerability across the chain due to the negative impacts of global sourcing on economic, social and environmental sustainability" (69). This research in effect proposes that supplier risks related to sustainability are actually included in the supply risk and demand risk: in supply risk from the perspective that environmental and social incidents in the supply chain can cause disruptions in supply and in demand risk due to the reputational effects of such incidents. Regarding supply chain risk, Manuj and Menzer (2008a:135) further divide risk into quantitative and qualitative losses; for example, lost sales due to stock-out would represent quantitative risk while loss of brand equity would be an example of qualitative risk. This division into quantitative and qualitative losses may be useful in the context of this study. However, the loss of brand equity can also turn into quantitative loss in the form of lost market share in the long run.

Overall it can be seen that this research has presented a new perspective on the management of supplier sustainability risk. It approaches the problem inductively from a practitioner perspective and thus does not rely and iterate on perspectives from previous literature, ensuring a fresh angle to the subject area. Christopher et al. (2011:73) acknowledge that there is still a considerable literature gap on the full span of global sourcing risk and its boundaries and that it is impossible to claim that practitioners perceive the different sources of risk the same way as researchers do.

This concluded the review of previous literature related to the emerged framework. Next, a member checking workshop is described where the findings of this study are presented to practitioners.

6.3. Workshop – Study 3

After the framework had emerged, a workshop (C6-W) was arranged with company C6 (Appendix 1). The workshop is also referred to as Study 3 to indicate the third phase of the field work. The purpose of the workshop was to gain insight into how practitioners understand the emerged framework as well as have an early assessment of the quality of the research conducted.

6.3.1. Workshop Design

The workshop constituted the "member checking" phase of the research. Member checking is a procedure where the researcher invites externals to review the theory. In grounded theory literature, member checking is mentioned as the prime strategy for validation of findings (Goulding 2002:89). Goulding (2002:89) discusses the use of others to ensure validity and consistency in interpretation and gives varying examples of how member checking has been utilized in grounded theory research. Also, within the supply chain management literature, Manuj and Pohlen (2012:799), in their steps of evaluating grounded theory, state as a potential question to ask: "Was member checking, or some other technique, used to confirm that the author's analysis is consistent with the data (participants)?" and thus suggest member checking as a potentially essential step in grounded theory research.

In this study, a two-hour workshop was arranged for two participants from company C6 (see Appendix 1). C6 is a manufacturing company having operations all over the world and serving the marine and energy markets. Their customers are mainly transportation companies and private companies selling to governmental bodies. Thus, C6 is rather distant from the end-consumer. The company is also found in the Talouselämä 500 list in the top 20 Finnish companies (Talouselämä 500, 2012). The participants C6-Wi and C6-Wii represented the sourcing department and sustainability department, respectively. Both had a wide understanding of their field of expertise and could refer to the presented framework not only as representatives of C6 but more generally as practitioners and managers of sourcing and sustainability.

At the beginning of the workshop, the participants were given a handout including figures 5-9 with short explanations and key words. First, a short presentation of the discovered framework was given, and the participants discussed during and after the presentation, reflecting on their past experience and the current situation at C6 in terms of organization structure, sourcing practices, and supply chain strategies. The flow of discussion was not controlled by any pre-set questions; rather, the discussion was allowed to flow freely around the topics. Approximately one-third of the workshop could be described as observation from my part as the participants engaged in discussion together around the organizational realities within their company. The participants had not worked together previously nor had any contact before the workshop. Thus, their understanding of the supply chain sustainability risk had not been shaped by joint discussions, which provided fruitful ground for insights.

The workshop was taped and downloaded to QSR-NVivo 10 software where it was transcribed and analysed. Next, the workshop findings are presented by going through the framework part by part.

6.3.2. Practitioner Understanding of Framework

The discussion started with the key finding that in managing supplier sustainability risk, not only does the reputational risk component matter, but the supply risks matter also. This sparked a conversation over sustainability's role in C6's sourcing organization. C6-Wi stated:

> "Sustainability is not high in the priority list of sourcing. When I asked the boss about that, he said there had been an improvement action some time ago initiated by the group sustainability department".

The reputational risk component is not thought about so much by C6's sourcing because supply reliability is the key driver for their operations. C6-Wi recognized the supply risk component as belonging also to the sustainability area, even though they had not recently experienced a stop in supply directly due to sustainability issues with their suppliers.

The framework suggests that C6's position in the supply chain far away from the end-consumers explains their less concerned attitude towards reputational risk. The participants confirmed this to be the case. C6-Wii stated:

> "Most of the reputational risk is perceived in the quality side. The interest in sustainability issues varies customer by customer as they operate in different parts of the world".

C6-Wi found the idea of the slope of reputational risk in Figure 7 to correctly describe the situation. C6 is approximately in the middle of the supply chain in terms of distance to the end-consumer, which varies in terms of the customer base of different divisions, but in any case quite far from end-consumer. However, he questioned which would be the companies that were even further away from the end-consumer and would perceive the reputational risk even lower?

About C6's supply chain strategies, C6-Wi states:

> "There has been no need for pull-back from low cost country sourcing as we never went there. We have some of our own production in China with local sourcing there. For [other operations] they never went for low cost. For a long time they have preferred Finnish suppliers so they can trust the quality and not encounter surprises with tight schedules".

At C6, sourcing practices are quite sophisticated, but they are in the beginning phases when it comes to sustainability. Supplier development engineers are responsible for auditing the suppliers, and the suppliers are expected to at least head in the direction of implementing sustainable practices as described in a handbook directed to suppliers. Together, we concluded that in Figure 5 (on vulnerabilities), C6 is positioned in the lower left corner where there is low Vulnerability to Event but high Vulnerability to Outcome. C6 has thousands of suppliers, many of which belong to the "long tail" as C6-Wi put it. By that he means that there are few large suppliers and thousands of small, local suppliers. There were various single supplier situations due to various customizations for the customers despite the modular nature of their business. However, their suppliers were often in Finland or Europe.

Sourcing's incentive structure and risk awareness sparked the most debate. C6-Wii questioned the incentive structure idea, whether the bonuses actually drive operations. He saw that these initiatives should first gain the support of the top management of the department to motivate action. W6-Wi stated:

> "We have so many KPIs [key performance indicators] that one more would not make so much difference. On the other hand, we have three main things to follow – quality, supply and cost. If sustainability was added as the fourth, it could make a difference".

They found the idea of increasing sourcing's awareness of risks in the sustainability area useful, specifically on what constitute the key risks depending on the supplier's location and processes. They also stated that not everything should be bonus driven; action should take place despite bonuses.

After the whole framework (Figure 9) was presented, the participants needed yet another look at it. So the explanation was repeated with further details and examples. There was a question about the arrangement of the boxes. The explanation of external and internal processes regarding supplier sustainability risk clarified the framework. Also, the world "Event" was considered to describe the idea less accurately than the word "Incident" would. Incident could potentially describe the negative nature of the event better than the more neutral "event". They also felt the sourcing incentives should be KPIs (key performance indicators) rather than incentives as the bonus structures are not always clearly defined by the general target-setting of sourcing. Otherwise, the participants could both relate to the vocabulary for the most part. The participants clearly understood what the study was about.

In the company in question, the level of sophistication in sourcing practices was high when it comes to the documentation of practices. However, in terms of the

environmental and ethical conduct of suppliers, the company did not have extensive on-going actions.

The company's position in the supply chain is not close to the end-consumer but is positioned rather towards the upstream. They do not find extensive pressure from the customer side to have an environmentally sound supply chain and production; however, the investors pose demands in that particular domain. Sourcing is driven by KPIs related to quality, availability and cost. Sustainability is only occasionally mentioned in sourcing strategies. Thus, it is interesting to find out how, on the one hand, sustainability risk is as a concept readily accepted and understood from extensive common knowledge of incidents in the supply chains of consumer brands, but on the other hand, there is insignificant action towards mitigating these risks in C6.

6.3.3. Conclusions from Workshop

In the workshop, we concluded together that the position of C6 in the supply chain (far from the end-consumer) and the lack of sourcing's awareness of potential supplier sustainability-related supply risks and incentive structures to manage the reputational component of the risk do reflect in the current situation of C6 – that is, the organization is reactive in managing the supplier sustainability risk, and the focus is mainly on the reputational risk component. Also, it was understood from the workshop that the company has very low vulnerability to event in the supply chain as their supply chain strategies have never sought cost benefits through LCCS strategies; rather, they rely on supplies close to their own operations from trustworthy suppliers. C6 has sourcing from, for instance, China, but that is mainly for their own local operations in China. It was discussed that C6's low vulnerability to event explains the subdued role of sustainability matters in C6's sourcing department and the minor attempts to implement sustainable supplier relationship management practices.

It can be concluded from the workshop that the framework managed to represent the realities and dynamics of managing supplier sustainability risk at C6. All the elements of the framework "predicted" and explained the state of supplier sustainability risk management at the company. The phrase Supplier Sustainability Risk Management is included in the middle box (Figure 10) to distinguish it from the variables affecting it.

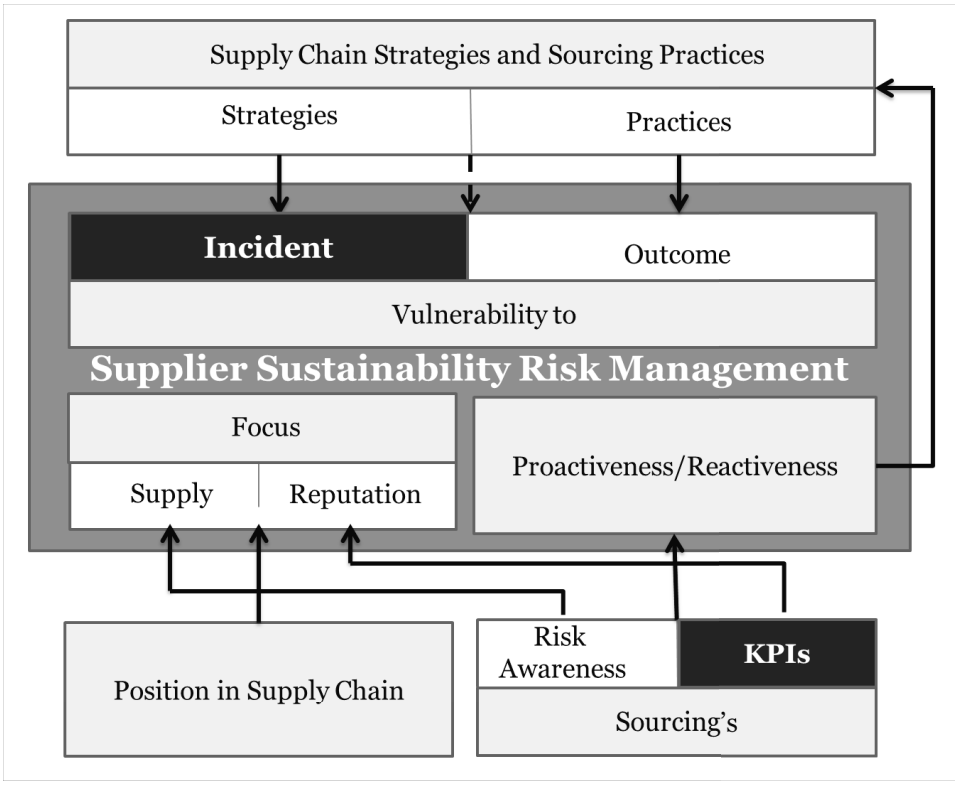

Figure 10 Framework with Modifications after Workshop

The major lesson to the participants of this workshop was the realization that in order to implement sustainability in supply chains, it is important to communicate and "sell" the idea to sourcing, the implementer, on the sourcing organization's own terms. Thus, to speak in terms of supply risk instead of reputational risk can give the needed edge to discussions and receive buy-in from sourcing leaders. That again can have an effect on the incentive structure or rather the KPIs that were mentioned as driving the operations in sourcing. Overall, the workshop modified the framework slightly, but only the naming of concepts. Figure 10 presents those changes. The quality of research can be valued to some extent based on Study 3 as it gives an indication on how the discovered framework fits the practitioners' realities. The quality of the research is discussed in detail in Section 7.1.

This study does not include cross-case tabulation as means to come to conclusions about the emerging framework. Such tabulation would not correctly represent the coding which was refined over a sequence. Even though the methodology does not encourage cross-company analysis during the analysis phase, it is beneficial to summarize the findings from all companies in the initial sample (C1–C5) and the member checking study (C6). Table 20 summarizes the position of companies involved in the study regarding the dimensions of the framework. The valuations are subjective and based on the interviews and company reports.

Table 20 Summary of Companies in Relation to Framework Dimensions

	STUDY 1	STUDY 2				STUDY 3
Company	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
Position in supply chain	Downstream	Upstream	Upstream	Downstream	Middle	Upstream
Sourcing's risk awareness	High	Low	Medium	High	Medium	Low
Sourcing's incentive structure	Awards sustainability focus	Early phase	Early phase	Awards sustainability focus	Early phase	Early phase
Focus	Reputation	Supply	Supply	Reputation	Supply	Supply
Supply chain strategies	High LCCS	Medium LCCS	High LCCS	Increasing LCCS	Balanced LCCS	Minimum LCCS
Vulnerability to event	High	Medium	Medium	High	Medium	Low
Sustainable sourcing practices	Sophisticated	Early phase	Early phase	Sophisticated	Early Phase	Early phase
Vulnerability to outcome	Medium	Medium	High	Medium	Medium	Low

6.4. Summary

This chapter presented the final stage of theory discovery – the emergence of theoretical codes and the relationships between the categories – and also included the previous literature as part of the data informing the emerged theory. The discovered framework was presented, illustrated and finally discussed in light of previous literature. Finally, Study 3, the member checking phase of the framework, was presented. The next chapter discusses the conclusions of this research.

7 CONCLUSIONS

In this chapter, the quality of this research is assessed in dimensions of fit, relevance, workability and modifiability, as suggested by Glaser (1978). This thesis makes a contribution to both the sustainable supply chain management literature as well as to the supply chain risk management literature by discovery of a framework on managing supplier sustainability risk. As all grounded theory research, this thesis also has direct implications and application for the practitioners – in this case, those working in supply chain management, sourcing, sustainability and risk management. The limitations of the study are related to the chosen study methodology as well as to the scope of business the sample's companies had. The suggestions for further research are mostly natural consequences of the chosen methodology as grounded theory studies often call for deductive verification. The following sections deal with these topics in more detail.

7.1. Quality of Research

This section starts with a review of the research questions set out in the beginning of the thesis work and the answers this grounded theory-based study has given in relation to those questions. Then, this study is subjectively measured against the quality criteria applicable to grounded theory research. The dimensions of fit, work, relevance and modifiability are covered to the extent it is possible in this stage after presenting and discussing the framework to practitioners in a workshop (Study 3). Moreover, the criteria recently set specifically by the supply chain management literature (Randall and Mello 2012:863; Manuj and Pohlen 2012:784; Denk et al. 2012:742) for grounded theory in the field has been discussed in relation to this research.

7.1.1. Research Questions Answered

The original research questions stated in the beginning of the thesis were determined at a stage where only the primary two interviews had taken place. As grounded theory research is an overlapping process of data collection, analysis, and discovery, even the research questions were not meticulously followed during the journey. I now compare the questions to the discovered framework grounded in the research data.

1) What challenges are perceived in managing supplier sustainability risk?

In essence question number one is answered in the middle box of framework (Figure 9): the key concerns of company's management of supplier sustainability risk according to this study are the amount of vulnerability or risk the company faces, focus on either reputational or supply risk and the level of pro-activity of managing the risk. Supplier sustainability risk found the biggest challenges in sourcing's drivers to manage the environmental and social performance of suppliers. Sourcing is traditionally geared towards managing the cost and availability of goods and services. Reputational risk management is not well incentivized in the sourcing organization, leading to reluctant, reactive management of environmental and social issues in the supply chain. The supply risk is a core driver for sourcing, and thus supply risks related to environmental and social performance of the supply chain are indirectly incentivized. In most cases, it

is the lack of awareness and the fire fighting mentality that prevents supply risk related to sustainability from being recognized.

6) *How is the ownership of supplier sustainability risk distributed within an organization?*

This question did not emerge as important in light of the further data. Thus, the ownership of risk in the organization was not included even as a category in the final theory. The ownership issue was a single string in the initial discussions with the one company but did not find support in other interviews. What was found in the interviews was that the supplier sustainability risks' management in the sourcing organization is dependent on how sourcing is incentivized to manage it. The reputational risk is the concern of the company in general and needs to become a sourcing driver as well in order to receive enough attention from sourcing. Supply risks related to environmental and social performance, on the other hand, are clearly in the interest of sourcing to manage, given they have awareness of them.

7) *What explains the different approaches to risk management related to the sustainability of suppliers in manufacturing companies with global supply chains?*

The discovered theory replies mostly to this last question. The answer to question number one determines the scope of risk management. Supply chain strategies and sourcing practices determine the amount of risk through vulnerability to outcome and event, position in the supply chain drives the level of focus on reputational or supply risks and sourcing drivers determine the proactivity of risk management activities – explaining all or most of the variability in approaches of manufacturing companies with global supply chains towards managing supplier sustainability risk.

The questions changed slightly in the process as is customary and even desirable from the grounded theory methodology perspective. The study finally answered this main question:

What explains the variation in perceived risk levels and the reactive or proactive attitudes towards supplier sustainability risk management between companies?

The mismatch between questions and answers proves the point that the data have revealed more than preconceived ideas would have about what the answers should be – or what the questions should be.

7.1.2. Fit, Work, Relevance, Modifiability

Denk et al. (2012:756) stress that "grounded theorists need to adhere to the quality criteria proposed by the school of thought they choose to follow". This study has followed the tenets of the Glaserian approach and this section utilized the quality criteria suggested by Glaser.

The fit of this research is ensured by utilizing the grounded theory methodology with its key processes of constant comparison, theoretical sampling and memoing as much as

possible without setting forth any preconceived categories or fitting the data into any previous models while letting the categories and finally the theory to emerge from the data themselves. It is almost impossible for the theory not to fit in case the grounded theory methodology is utilized systematically. Thus, the measurement of fit is more about measuring how deeply the researcher has understood the methodology and has been able to show how it has been utilized in the research. It has been my intention to open the method up in writing the "storyline" of the analysis and thus explain how I have come to certain conclusions and made certain decisions.

The relevance and work is difficult to measure without organizing a deductive study with the intent to verify whether the practitioners find a theory to explain and predict the key problems in their work. If I use my own insights as a sourcing and sustainable supply chain management professional, I fully recognize the theory's key concepts, albeit in a new light compared to before the data gathering and analysis took place. I find them shedding light onto the grey areas in managing the risks in sourcing and sustainability. The motivation structure particularly and the often confused drivers of sourcing to do anything to assess and improve the environmental and social performance of the supply chain are now clear. The workshop organized after the discovery of the theory (Study 3) indicated a good fit with the practitioner realities. However, the workshop represents too small a sample from which to draw further generalizations.

The emerging theory was constantly compared to the existing literature in the final stages of analysis and thus modified by it. This is early proof of the modifiability of the theory. It is not set into stone; rather, categories can be added, reduced or changed if there is new knowledge that is relevant to the topic. The workshop also slightly modified the theory in terms of terminology. The concept of "event" would have been better understood as "incident". "Event" came from the literature, "incident" from practice. Thus, modification is possible according to the situation of the company and the terminology used there.

In their review of the literature, Manuj and Pohlen (2012) blame grounded theory research in supply chain management for weak or missing "information regarding theoretical sampling of subsequent participants and the rationale for reaching theoretical saturation". In this study, the set of data was not determined beforehand. The process started with a single interview over topics related to sustainability and supply chain management. The risk of suppliers' environmental and social performance emerged as the core category, and the first interview was followed by another interview with the first interviewee and then subsequent data gathering of company reports and interviews with additional companies where I could continue discussion of this specific core category. The data and emerging concepts led the sampling until the core category had been explored from various angles suggested by the subcategories and finally saturated the theme with no new properties emerging to describe the behaviour. Denk et al. (2012:754) state that "the emergence of theory is a key tenet of the Glaserian school of thought that cannot be forced or preconceived by the researcher". As there were no preconceived hypotheses or frameworks to fit the data, the theory was allowed to emerge though the above-mentioned process.

Outlining how the theory emerged while informing the reader of the base of primary and secondary data is seen as important in the presentation of grounded theory (Denk et al. 2012:755). In this study, the coding procedures were explained with tables and in writing. Chapter 3 and 4 gave the storyline of how the open coding resulted in the identification of a core category and subsequent selective coding. Section 5.1. explained

the related categories and their properties in detail, and Section 5.2. revealed and illustrated the theoretical codes and relationships between the categories, finally arriving at emerged theory in Chapter 6. There were no pre-existing conceptual categories, and the sources of data were illustrated by examples of coding, the indicators, quotes and memoing. Numerous tables of coding development have been presented to ensure "sufficient detail to demonstrate rigor and credibility" as called for by Manuj and Pohlen (2012:785). While a certain level of detail is required in the presentation of a grounded theory study, there needs to be a balance as "The role of the researcher is not to provide a perfect description of an area but to develop a theory that accounts for much of the relevant behavior" (Manuj and Pohlen 2012:789).

The use of multiple sources of data – in-depth interviews, annual reports, sustainability reports and YouTube videos as well as the workshop in the end – were illustrated in detail with the data gathered on the first company of the sample to show how the data were analysed and shaped the emerging categories and further the theoretical sampling. The secondary data of company reports and videos gave important background information on the environment in which the interviewee operated as well as of the ways of the industry in general, thus giving a basis for comparisons within different dimensions of the organization and supply chain. The use of memos was described within the write-up. Memo material was used throughout chapters 3–6, but it was more explicitly explained in chapters 3 and 4 with direct memo quotes. The research process was presented in a sequential manner. However, there were various iterations across the steps of the process (see Section 2.3), and the reality was not as straightforward as the presentation may seem. This is part of the grounded theory process.

The presentation of theory and the level of detail is discussed widely (Manuj and Pohlen 2012:784; Denk et al. 2012:742). Theory is to "be presented as a well-codified set of propositions or in a running theoretical discussion, using conceptual categories and their properties" (Glaser and Strauss 1967:31). Manuj and Pohlen (2012:786) were concerned that in their sample of supply chain management grounded theory literature the "majority of studies used an interview protocol but failed to provide or describe it which raises concerns regarding the objectivity of the questions, whether the questions biased the findings, and how the interview protocol evolved to support theoretical sampling". Interview protocols were not used at all in this study. Starting from the first interview, the discussion was open and questions built on the emerged categories and built on the answers, ad hoc and in vivo. The questions differed from interview to interview as there was more information cumulating. For example, the concept of "risk silos" emerged from the first interview. A discussion was opened specifically on "risk silos" in the following two discussions, but since there was no further support for the concept, it was not on top of the discussion list when interviewing subsequent managers. However, the concept "risk silos" was still in the back of my mind, and if the interviewee mentioned something relating to issues with the supply organization and sustainability organization managing risks separately, I continued from there and in my mind constantly compared the incidents even during the discussion, later putting the ideas into a memo. "Risk silos" did not end up having much explanation power regarding the behaviour.

The context of Finland-based multinationals which have operations in developing countries offered a great fit with the sustainable supply chain management topic under study. In order to study the challenges the practitioners face with sustainability, operations in developing countries offered a heightened risk profile, generating a bigger proportion of work dedicated to the issues. I had good access to the Finland-based

multinationals partially benefiting from my own experience in managerial positions in field similar to that of the interviewed managers.

This research adhered to the Glaserian school of thought of grounded theory methodology. The goal was to develop a theory explaining the dominant themes that drive the behaviour of the practitioners, not to arrive at a set of findings. If the case was the latter, Denk et al. (2012:754) suggest using the Straussian approach. Denk et al. (2012:742) stress the importance of arriving at only one core category and pushing to a "final level of abstraction" so that the tenets of grounded theory are met in both the Glaserian and Straussian schools of thought. Those criteria were fulfilled in this study through omitting other interesting leads that emerged from the data and focusing on the risks arising from suppliers' environmental and social performance.

Grounded theory methodology suited well in studying this particular topic. Davis-Sramek and Fugate (2007:26), in their article on the state of logistics, integrate the cumulative opinion from logistics visionaries by saying that in logistics/supply chain management research "all research methods are acceptable, if the appropriate method is chosen based on the research questions".

7.2. Research Implications

This study answers the call for grounded theory research in the field of supply chain management. According to Denk et al. (2012:757) "the GT approach should be utilized more in future SCM research, particularly given the preponderance of more positivist studies in SCM discipline". Unlike many other methodologies, grounded theory gives access to the social and structural aspects of supply chain management (Randall and Mello 2012:865) and thus gives new and important insight into the field.

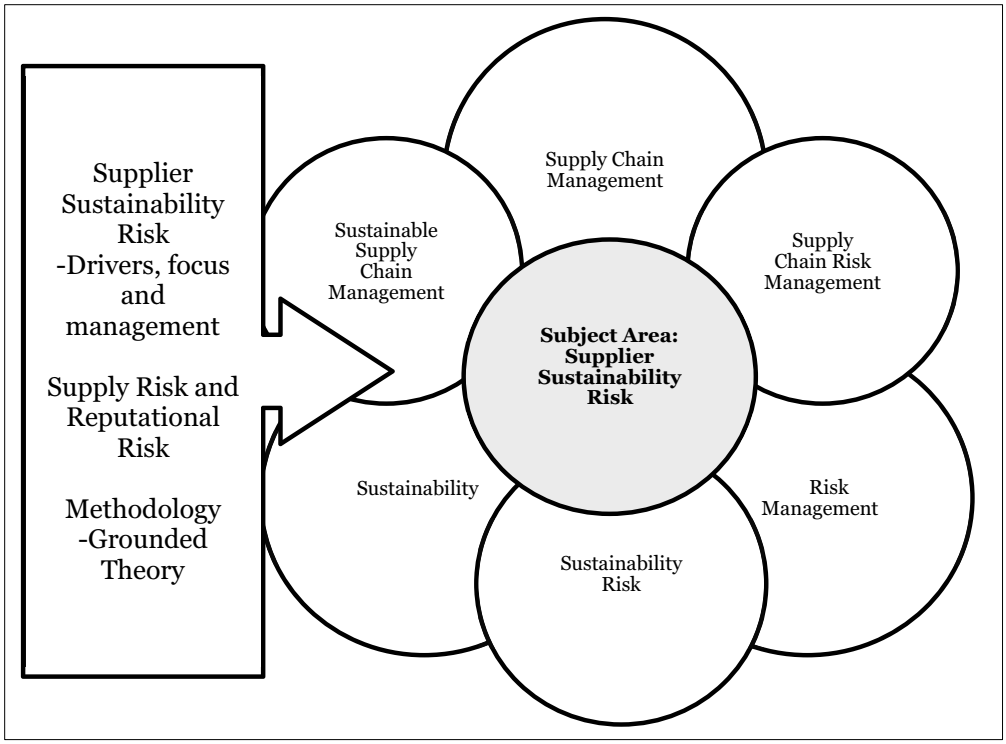

Figure 11 Contribution to the Relevant Literature

From the methodology perspective, this research contributes to the supply chain management literature by applying grounded theory methodology without compromises related to the required form of publishing. The Ph.D. manuscript format does present some minor compromises to the presentation of the research but not to the extent to jeopardize the application of the method systematically. Academics of supply chain management could utilize the grounded theory method more to increase the relevance and fit of the studied problems and create new theories that practitioners can directly utilize.

The first theoretical implication of this study is the identification of supply risk as one of the key elements of supplier sustainability risk management in addition to managing the reputational risk. The stakeholder theory-driven reputational risk view has been the core argument of academics examining corporate social responsibility in the supply chain context (Amaeshi et al. 2008:223; Salam 2009:355; Ehrgott et al. 2011:99). The previous literature identifies the reputational risk as an element of supplier sustainability risks, but it falls short in identifying the connection of sustainability performance to supply risk. This study conceptualizes how and why the phenomenon occurs.

This research contributes to the supply chain management literature in the supply chain risk management area (Figure 10). Only recently has supply chain risk management become a prominent stream of research in supply chain management studies. Some of the existing frameworks (Manuj and Mentzer 2008:192; Christopher et al. 2011:67) include the environmental and social performance-related risks, but they deal with them very vaguely or include them in other categories. The reputational risk

component is often reported while the supply risk component is fully omitted from the frameworks. The conceptualization of these two sustainability risk categories has not matured. This research gives a first attempt to conceptualize these risk categories and list the focus areas and drivers for managing them in the company context.

This thesis also contributes to the sustainable supply chain management literature (Figure 10) in linking the understanding of environmental and social performance of suppliers to the risk management perspective and potential drivers of efforts in the area. The sustainable supply chain management literature has so far largely ignored the impact of sustainability issues to the supply of goods. This most likely has to do with the roots of the sustainable supply chain management literature in corporate social responsibility (CSR) literature. The CSR perspective is that of a single company; when extending that to the supply chain context, the reputational elements of sustainability are the most obvious areas of study, while the supply component is forgotten as a less obvious consequence. The supply risks are less likely to be connected to the environmental and social performance of suppliers, even if in real life the outcome of such incidents results in an acute supply shortage.

The framework of managing supplier sustainability risk contributes to the literature as there are only few attempts to understand this aspect. Foerstl et al. (2010:118) explore the identification, assessment and treatment of supplier sustainability risks and conclude that mature capabilities in this area are a source of competitive advantage both from the reputational risk and operational performance perspectives. Their findings are in line with the findings of this research. The contribution of this research is in understanding why companies perceive these benefits differently. A company's unique position in the supply chain determines the need to focus on reputational or supply risks, and the company's overall supply chain strategies put the company in a unique position. While Froestl et al. (2010:118) automatically assume the sourcing practices (identification, assessment and treatment of risk) to have a positive impact on the level of reputational risk and competitive advantage, this research argues that the level of vulnerability to outcome is in fact moderated by the vulnerability to event in the first place – that is, in what kind of risk position have the supply chain strategies let the firm to be in to begin with. Also, this research contributes by highlighting sourcing's role, despite the company's general stance, with regards to sourcing's incentive structure and risk awareness impacting both the sophistication of sourcing practices and the proactive or reactive management of supplier sustainability risk.

Hofmann et al. (2013) investigate how sustainability issues manifest themselves as risks and how they create losses for focal firms. They view supply chain risk sources as creating disruptions while supply chain sustainability risk sources create stakeholder reaction, ultimately resulting in damage to the focal firm. This research argues that both disruptions and stakeholder reaction originate through same path. If sourcing is incentivized correctly and is aware of the supply risk component of supplier sustainability risk, the analysis and treatment does not need to differ from the "ordinary supply chain risk path".

This research has provided a fresh insight into the supply chain risk management and sustainable supply chain management literature by highlighting the importance of supply risk component and the sourcing's role in managing supplier sustainability risk. The study has also mapped the critical variables of managing supplier sustainability risk from practitioner perspective and related them to the drivers of the varying approaches in managing supplier sustainability risk across companies. Next the managerial implications of this study are discussed.

7.3. Managerial Implications

The claim of grounded theory for the practitioners is that the method guarantees that the theory fits, is relevant and works. Grounded theory provides solutions to managerial problems that are recognizable by the practitioners (Randall and Mello 2012:863). It gives an insight into the daily work and incentives of sourcing managers – what are the drivers, why are environmental and ethical rules pushed to the upstream supply chain, should sourcing care more and should we calculate what the implication of hick-ups in this area are for securing the supply and the right cost level? Are we doing enough to mitigate the risks? How can we assess on broad scale what our position is towards this risk regarding the risk increasing/mitigating supply chain strategies and position in the supply chain?

Supply chain managers are encouraged to look at their particular situation from the perspective of where in their supply chain their company is positioned and what the profiles of their suppliers and customers are. This drives the likely amount of risk in the reputational dimension. A cross-functional discussion with the sales, marketing and communications departments reveals the importance of the reputational risk management in the particular supply chain. The incentives of the sourcing organization should then be analysed properly to see if the department is incentivized only by cost reduction and availability management, forgetting environmental and social performance management altogether.

The supply risk related to the environmental and social performance of the suppliers is then the responsibility of the supply chain organization itself and should be analysed properly to understand the amount of risk, drivers of risk and what can be done to manage the risks. Sometimes the connection is not seen in supply shortages and the environmental or social performance of the supplier. The symptom is managed without looking at the root cause of the problem. The fire fighting mentality and shallow analyses of past supply shortages can lead to this. Following a risk management procedure and including the root causes in the nature of the environmental and social performance of suppliers to the analysis bring a realistic picture of the supply risks faced. This can then have an impact on future supply chain strategies, too, to reduce vulnerability to event as well as sourcing strategies to reduce vulnerability to outcome.

The incentive structure of the sourcing organization should be fit to both the focus required by the position in the supply chain and the vulnerability to the adverse events in the supply chain. It is often difficult to reason for other incentives than the traditional cost and availability; thus, a clear analysis of past incidents and their outcomes is required to present the shock resistance (or lack thereof) in monetary terms. Each function in a company had a predetermined role to play, and for sourcing it is often that of the cost reductionist. Thus goals that sourcing should strive for must be measurable in terms of money.

Utilizing the terms “vulnerability to event” and “vulnerability to outcome” clarifies the environmental and social performance-related risks for the decision-makers. This is often a grey area, where most wander into the emotional realm with thoughts such as whether companies should care about the environment and social issues at all, is it all “green wash” and that businesses are for making money, not caring. However, in reality, the risks are real in financial terms as well. Some companies claim that they can make good business out of being responsible; many do not boast that they are making good business out of being responsible, but simply reduce the supply risk levels.

This research can prove to be both relevant and useful to managers in terms of understanding sourcing's incentive structure and the reasons for different treatment of supply and reputational risk elements in different parts of the organization, the knowledge of which can help managers push for more profitable and sustainable supply chain management that benefits the goals of the whole company. The framework can be utilized by companies to assess their unique position regarding managing supplier sustainability risk and to make adjustments accordingly.

7.4. Limitations

This research offered a grounded substantive theory. To generalize more and create a formal theory of managing supply chain risks, the framework should be tested in other areas which could provide further insights and thus clarify or modify the categories in the theory. Quality management in supply chains could be one area where the findings may be fruitful since also in quality management the control issues and distance of suppliers is very critical. The incidents themselves have a significant impact on product and sales, but the effect can be minimized with the right strategies.

The chosen methodology was applied in a fresh context instead of being further developed. Another limitation of this research, related to applying grounded theory, is that I taped all the interviews conducted except for the first two (C1-Ii and C1-Iii). This is specifically discouraged by Glaser (1998). I did not trust myself enough as a researcher to follow this guideline fully. Moreover, it seemed valuable while using the NVivo software. I do not see how the recording jeopardized the research process as I did not go back to the recordings after writing down the key points from them on the same day the interview took place. In addition, I followed the process meticulously and attempted to show this in the write-up of the analysis in form of the "storyline" and the description of the different steps that took place.

Since the study was based on Finland-based global manufacturing companies, the propositions developed may hold only for similar supply chains. Companies with very local supply chains may have difficulty in recognizing the vulnerability to event aspects in the study as their supply chains lack the variation. They can utilize the theory, though, when analysing globalization strategies. The theory can help them recognize the risk aspects in the environmental and social performance of the supply base. It is always easier to implement the environmental and social aspects right in the beginning of supply chain and sourcing strategy creation rather than retrofit these elements later on. The theoretical sampling's focus was narrowed down with the criteria found over the course of the study and geographical scope (Finland-based companies); however, it is possible that there were more companies that would have fulfilled the criteria that could have been included. Theoretical sampling was conducted according to grounded theory principles where data collection informs the sampling decisions, and thus it is not obligatory to have covered all possible companies that fit the criteria.

7.5. Suggestions for Further Research

The theoretical model should be refined and tested with qualitative and quantitative data across different companies, different industries and different upstream tiers of suppliers. That kind of testing could reveal important variations depending on different positions in the supply chain and the different supply chain strategies being utilized. Overall, the supply risk component of the environmental and social performance of

suppliers would benefit from further study in order to increase the understanding of this element in the supply chain risk management discussion.

Expanding the context from, for example, multinationals to local companies, and those operating in Finland to other geographical locations, could lead to formal, or eventually "grand theories" with greater explanatory power. Manuj and Pohlen (2012:789-790) state that "Substantive theories initially may be developed through comparative analysis within the same substantive or empirical area to fill a gap in our theoretical understanding of a phenomenon. The research could develop a formal theory where comparative analysis occurs among several different substantive areas".

The paradigm of inquiry – that is, the sustainable supply chain and risk management context – requires theories that are relevant and "fit" instead of transmitting theories from other disciplines (e.g. Denk et al. 2012). Thus, this research can serve as a launch pad for further verification. The Glaserian approach to grounded theory adopted in the study supports verification studies as there is now a set of concepts relevant to the practitioners, a single core category, offering an original area of study for further testing of the theory.

The earliest interviews suggested there is something interesting in the ownership of risk within an organization that may be blurring risk management responsibilities. A further study on the division of ownership in risk management could benefit the risk management literature in general and the supply chain risk management literature in particular. In the case of reputational risk management, it was found in this study that sourcing is the best-suited function to manage it, but sourcing does not have a natural incentive to manage reputational risk. Thus, an intentional incentive plan has to be created to motivate sourcing to take action. There may be relevant dimensions to this other than an incentive structure, which could be explored in detail.

The vulnerability to event and vulnerability to outcome conceptualization would benefit from further study. For example, a systematic literature review of the terminology may prove beneficial. The term "vulnerability" is used in various types of literature, mostly in risk management, but as was stated above in this thesis, it is used also in humanitarian literature. Companies interviewed for this study recognized the term vulnerability and some used it in the interviews themselves.

It was mentioned in Section 4.2 that the direction of pressure to improve environmental and social performance can also come from the less obvious direction of suppliers – this calls for further detailed study. The topic came up only in one of the interviews, and it was not possible to draw conclusions based only on that brief comment. Many questions remain. In what kind of industries is this typical? Do suppliers actually refuse to sell to customers with poor environmental and social performance? Is this kind of behaviour related to the negotiation power topic? This area offers a fruitful discussion and can involve the investor perspective as well.

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APPENDIX 1 DATA SOURCES

Primary Data

Interviews	Code	Date & length	Position in the company	Organizational function
Face-to-face	C1-Ii	15.12.2011 2.5h	Head of Supplier Sustainability	Sustainability + sourcing
Face-to-face	C1-Iii	28.12.2011 2h	Head of Supplier Sustainability	Sustainability + sourcing
Face-to-face	C2-I	3.4.2012 1.5h	Director, Supply	Sourcing
Face-to-face	C3-I	3.4.2012 1.5h	Sustainability Director	Sustainability
Phone	C4-I	15.4.2012 1h	Sustainability Director	Sustainability
Face-to-face	C5-I	3.5.2012 1.5h	Director, Supply & Quality Manager (2 persons)	Sourcing

Workshop	Code	Date	Position in the company	Organizational function
Face-to-face meeting	C6-W	11.11.2013 2h	C6-Wi Sourcing manager C6-Wii Sustainability manager	C6-Wi Sourcing C6-Wii Sustainability

Secondary data

Company reports	Code	Name of report	Year of publication
C1	C1SR	C1 Sustainability Report	2011
C1	C1AR	C1 Annual Report	2011
C2	C2SR	C2 Sustainability Report	2010
C2	C2AR	C2 Annual Report	2011
C3	C3SR	C3 Sustainability Report	2011
C3	C3AR	C3 Annual Report	2011

C4	C4SR	C4 Sustainability Report	2011
C4	C4AR	C4 Annual Report	2011
C5	C5SR	C5 Sustainability Report	2011
C5	C5AR	C5 Annual Report	2011

YouTube video	**Code**	**Topic of video**	**Title of interviewee**	**Year of publishing**
	C1YT	[C1] Sustainability	CEO and VP Sustainability	2012
	C2YT	[C2]'s industry & sustainability	Sales Director UK	2010
	C3YT	[C3] Sustainability	CEO	2011
	C4YT	[C4] Annual highlights	CEO	2013
	C5YT	[C5] Overview	Company Communications	2011

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HANNA-RIITTA HARILAINEN

MANAGING SUPPLIER SUSTAINABILITY RISK

Supply chains are increasingly global, often reaching to developing regions. The media pressure brand owners to be responsible, but a product is only as sustainable as the practices of all the companies involved in manufacturing it are. It's not enough that the brand owner acts responsibly; sustainable practices have to reach component and raw material suppliers upstream.

Image risk has often been recognized as reason for investing in sustainability. In the supply chain context, supplier misconduct also presents a supply risk. Smooth flow of goods is at stake. Examples of this are strikes and the breaking of environmental laws that cause line stops at supplier factories. These realized supplier sustainability risks seldom receive media attention or reach consumer consciousness; however, they potentially cause challenges in availability and supply. The sophistication of supplier sustainability risk management varies by company, and managers are often unaware of its enablers. The topic of supplier sustainability risks is not yet sufficiently addressed in the literature, despite its increasing importance.

This research utilizes grounded theory methodology, an inductive approach in which theory is seen as emerging from the data. The chosen methodology particularly suits situations where the subject area has not yet been studied and can give fresh insights. Empirical data were gathered from the managers of six Finnish multinational companies, and the perceptions of the interviewed supply chain and sustainability managers were used to relate the findings at the company level.

The key finding of this study is the importance of supply risk as a potential driver for investments in supplier sustainability. A company's supply chain strategies are linked to its vulnerability to incidents in the supply chain, while the sophistication of sourcing practices is linked to the vulnerability to outcome of such incidents. A company's position in the supply chain drives risk focus on reputational risk and/or supply risk and sourcing's incentive structure together with risk awareness drive the proactive or reactive management of supplier sustainability risk.

This research contributes to both supply chain risk management and sustainable supply chain management literature. Managers can utilize the framework to understand when proactive supplier sustainability risk management makes sense and what its enablers are.

EFMD EQUIS ACCREDITED

Association of MBAs

ISBN 978-952-232-220-3 (printed)
ISBN 978-952-232-221-0 (PDF)
ISSN-L 0424-7256
ISSN 0424-7256 (printed)
ISSN 2242-699X (PDF)

EDITA PRIMA LTD, HELSINKI



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