

Seeking Sustainability beyond Tier 1 Suppliers within Supply Chain

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ABSTRACT

Sustainability is a hot topic nowadays, also in a business context. Due to social awareness in society, firms are pushed to think about how to deal with this concept and act on it. However, firms at the end of the supply chain do not always have clear visibility of their supply chain. Therefore they are using their direct supplier, tier-1, to improve their sustainability but also further down the supply chain. From the literature, actors and factors that stimulate sustainability were found. These factors are economic benefits, power, incentives, awareness, rewards, and disclosing of information. However, the literature did not mention whether these factors are significant to motivate first-tier suppliers. Therefore, this thesis aims to find out the key factors that motivate tier-1 suppliers to stimulate sustainability toward lower-tier suppliers. Multiple cases were used by interviewing sales and purchasing employees since they have direct contact with buying firms and lower-tier suppliers. Three key factors that motivate first-tier suppliers to fulfill this role were identified. Firstly, the Environmental Responsibility that tier-1 suppliers feels drives them to think and act on the concept of sustainability. Secondly, the pressure from the Government and non-governmental organizations forces them to comply with the sustainability guidelines. Thirdly, the influence of customers can be visualized in pressure from customers, like buying firms or the end customers or their demands creating a marketplace on which tier-1 suppliers are willing to act. Furthermore, sustainability implies not always an increase in prices. Also due to the rising awareness of this concept, the rising of a marketplace related to sustainability was seen. The presented key factors could help organizations to understand what influences sustainability and what they can contribute to the improvement of sustainability within the supply chain.

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Keywords

Supply chain – Sustainability – First-tier suppliers – Transparency – Buyer-Supplier Relationships – Visibility

1. INTRODUCTION

Different researchers have identified the importance of transparency within a supply chain. For the buying firm to gather information about the sustainable practices of its suppliers. This is necessary since the increasing social awareness in society. Examples are customers and consumers demanding assurance of safe products and services. Furthermore, they want to be ensured that these are meeting sustainable standards (Montecchi, Planger, & West, 2021). Visibility of the supply chain is therefore needed to know who a firm's direct and indirect suppliers are. So transparency comes hand in hand with visibility (Sodhi & Tang, 2019). Buying firms are familiar with their first-tier suppliers but do not have a clear picture of the supplier's suppliers. This addresses the problem of how sustainable practices will be implemented by lower-tier suppliers. To tackle this problem, buying firms are giving their direct suppliers an important role. A part of this role is that they have to implement sustainable practices into their supply network.

The literature mentioned furthermore that first-tier suppliers are responsible for improving the sustainability of their practices. And for the implementation of this in their suppliers. Some factors were stated why first-tier suppliers should encourage their suppliers to obtain these practices. A gap in the literature is identified as a lack of studies on what drives first-tier suppliers to stimulate sustainability within the lower part of the supply chain. The literature mentioned how the first-tier supplier could play a role for the buying firms. However, few papers mentioned the reasons for the first-tier supplier to be an "agent" for the buying firms. Furthermore, the literature did not mention whether these factors are significant to motivate first-tier suppliers. In this thesis, the focus will be on identifying what are the key factors which motivate first-tier suppliers to stimulate the sustainable agenda of the buying firm. The following research question has been developed in line with the research gap:

What are the key factors that motivate first-tier suppliers to mobilize their lower-tier supply chain to implement sustainable practices?

This study investigates the causes of direct suppliers to stimulate sustainable practices toward lower-tier suppliers. It focuses on the identification of the key factors that push this supplier to mobilize the lower part of the supply chain. A qualitative case study was applied, with the use of semi-structured interviews. Which led to five cases, all in a different sector. Three key factors which motivate first-tier suppliers to push sustainability toward lower-tier suppliers were found during this research. Firstly, the Environmental Responsibility of firms causes them to consider what they can do to have less impact on the environment and to act on it. Secondly, government and non-governmental organizations (NGOs) have their influence on how business is conducted. Thirdly, buying firms demand sustainability and therefore they create a market for sustainable products and projects.

This thesis contributes to the literature in a few ways. Firstly, by enlarging the already existing knowledge, for example by (Ayuso, Roca, & Colomé, 2013) and (Grimm, Hofstetter, & Sarkis, 2014). Because it was found that first-tier suppliers do not have very clear visibility of suppliers beyond tier 2 supplies. The reason for this is, that they feel no responsibility for these suppliers. Therefore there is a lack of visibility on the lower-tier supplier from the first-tier supplier. Secondly, the results imply that this first-tier supplier can act differently than as an agent for the buying firm. This research stated that these suppliers want to take the lead if their customers are willing to pay for more sustainable products. Therefore this study contradicts the literature describing the first-tier supplier's role of being an

"agent" for the buying firm (Wilhelm, Blome, Bhakoo, & Paulraj, 2016). Thirdly, this thesis extends the existing knowledge about sustainability within the supply chain by identifying the key factors that motivate first-tier suppliers to stimulate sustainability throughout the supply chain.

2. LITERATURE REVIEW

2.1. Supply chain transparency and Sustainability

In the last decade, customer awareness about sustainability has increased. A factor that pushes companies to be more transparent about their operations and activities. Transparency is important for the buying firm to identify where sustainable improvements could be made. The definition of Montecchi et al. (2021) will be used: "Supply chain transparency is the practice of disclosing detailed and accurate information about operations and products, such as their origin and sourcing, manufacturing processes, costs, and logistics." (p.2). Also, governmental institutions and non-governmental organizations (NGOs) are forcing transparency too (Kashmanian & Moore, 2017). This is in ways of informing the marketplace about a firm's supply chain and undertaking activities to improve the performance of suppliers. Examples they could disclose information about, are the tier-1 suppliers, the environmental footprint of all tier suppliers, the costs within this network, and compliance with suppliers' workplace safety (Sodhi & Tang, 2019). There are also beneficial factors, companies could be rewarded for their sustainable operations, such as receiving certificates or rewards. Besides benefits transparency has also its disadvantages, since companies have to be open toward their consumers, investors, and the public in general. These are manipulation of stakeholders with information, spillover effects on their reputations, and becoming less competitive when disclosing strategic information (Tondolo, Santos, Tondolo, & Paiva, 2023)

Due to the rising awareness sustainability has become a familiar topic nowadays. (Kuhlman & Farrington, 2010) explain that sustainability is seen in three dimensions: social, economic, and environmental. These three areas are interdependent on sustainable development, also known as the Triple Bottom line. Sustainability is been defined as maintaining the overall well-being over an indefinite period. It seeks to transfer the current well-being to future generations. This is in line with these authors who are stating that this goes beyond the environment. Like cultural heritage, economic infrastructure, technology, and so on. Sustainable improvements could more likely be found at the beginning of the supply chain. In line with this, the authors (Allenbacher & Berg, 2023) say that social issues are occurring more at the lower-tier suppliers.

This section mentioned the relationship between transparency and sustainability. Furthermore, the supply chain actors customers, government, and NGOs were identified and the factors used by them to stimulate sustainability.

2.2. First-tier suppliers

With first-tier suppliers is meant the direct suppliers of the final product (Choi & Hartley, 1996). Within a supply chain, multiple tiers of suppliers could exist. Firms have no or little view of these multiple tiers of suppliers. A reason is that lower-tier suppliers are often small companies. Therefore they are not that visible to the general public making them less revealed to institutional pressure. Reason for the buying firms to make from their first-tier suppliers a catalyzer is to push these sustainable practices toward lower-tier suppliers (Wilhelm, Blome, Bhakoo, & Paulraj, 2016). The authors identified the first-tier supplier as a "double agent". This means that he acts as an agent for the buying firm carrying out two roles, whose primary role is to

implement sustainable standards within his operations and activities. The second role is about implementing requirements in their supply network. Which becomes more difficult as the asymmetric information flow increases between them and their suppliers. But still, (Allenbacher & Berg, 2023) found that an effective buyer-supplier relationship is positively related to sub-suppliers' abidance with sustainable practices. (Hofstetter, 2018) also sees that suppliers are nowadays responsible for extending sustainable standards. However, suppliers are struggling with implementing requirements.

A few factors which motivate the first-tier supplier to carry out their secondary agency role were identified. These are economic benefits, power, and incentives. Wilhelm et al. (2016) saw the economic benefits as higher attainable market prices and improved productivity of lower-tier suppliers. The power asymmetry could lead to a high sales dependency on buying firms, causing no power to negotiate sustainable standards. Furthermore, a worse incentive system hurts the execution of this secondary role. Because distribution and monitoring sustainability at lower-tier levels increases costs. One of the key power sources is a firm's size. When they have more power over their supplier, then pushing their sustainable agenda becomes a lot easier. By contrast, a power balance between a buying firm and a supplier stimulates them to collaborate.

Furthermore, when a supplier is more powerful than the buyers, the collective voice of the buyers could influence the sustainable practices of the supplier (Marttinen & Kähkönen, 2022). But much literature about the motives for first-tier suppliers to stimulate sustainable practices toward their suppliers is missing.

2.3. Lower-tier supply chain

Lower-tier suppliers are also known as sub-suppliers, which are the suppliers' suppliers. In the literature, they are also referred to as the suppliers called tier 2 or tier "n" suppliers (Hofstetter, 2018). Some risks are beyond Tier 1 suppliers, at the beginning of the supply chain where space is for sustainable improvements. Furthermore, the practices of these suppliers could have a big impact on the buying firm's reputation, finance, and so on. In line with this examples are used by (Kashmanian R. M., 2018) of child labor and mining minerals in war or conflict zones. Since such practices could be viewed as ethically wrong and harm a firm's reputation. Reason for firms to have no relations with these kinds of practices. Besides the difference in roles between first-tier suppliers and sub-suppliers, there is also a difference in power. "Generally speaking, the closer supply chain members are to the end customer the more power they have." (Choi, et al., 2021). Which gives more away about the complexity of supply chain management.

One strategy to deal with a large supply chain is to work with multiple regional supply chains. Each sourcing, making, and delivering the same product within local markets. However, it is difficult to find an optimal balance between global and local supply chains. The advantages of local supply chains are that they are more flexible and can customize products. Furthermore, within a local supply chain, is it easier to get better supply visibility, which increases transparency. Differences in culture

and inappropriate incentives are factors too that make the mobilization of lower-tier suppliers difficult, but there is no simple formula to get the sub-suppliers in check with social sustainability (Venkatesh, Zhang, Deakins, & Mani, 2020).

However, the literature did not mention whether the mentioned factors used by the different actors in the supply chain are enough to motivate first-tier suppliers to mobilize the lower part of the supply chain to obtain sustainable practices

2.4 Framework

Based on the literature the following framework is developed within Table 1. This table gives an overview of the factors used by these actors to stimulate sustainability. The different actors are customers, the public, buying firms, Tier 1 suppliers, lower-tier suppliers (Tier 2 used), and non-governmental organizations. As a result of the framework, the focus will be on capturing the key factors that motivate tier-1 suppliers to stimulate sustainability within the supply chain.

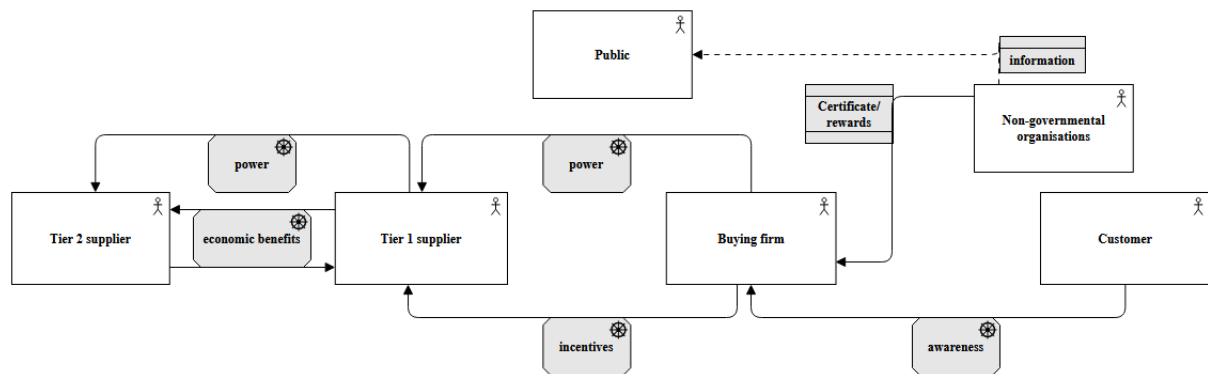


Figure 1: Factors used by supply chain actors to stimulate sustainable practices

3. METHODOLOGY

3.1 Research design

This study aims for identifying the key factors which result in the mobilization of lower-tier suppliers to implement sustainability by the first-tier supplier. Therefore an explanatory approach is best. Which is about explaining a causal relationship (Fisher & Ziviani, 2004). As it allows for a better understanding of the complexity of the agency's perspective on the buyer-supplier relationship. This is because both the buying firm and the first-tier supplier as well as a tier 1 supplier with a sub-supplier have this relationship. In this research, the supply chain of one firm was aimed to be used, where information was to be gathered through twelve interviews with different buyers, a Tier 1 supplier, and lower-tier suppliers. This is to explain what Tier 1 supplier drives to stimulate their suppliers to be more sustainable, the secondary role of a double agent.

3.2 Case selection

In this research, the agency perspective on the buyer-supplier relationship is the unit of analysis. In the case selection, different cases were to be selected between de tier 1 supplier Company X and its buyers. Different acting buyers were to be selected to identify similarities and differences factors. The main criterion for the buyers was company size (small or big) and sectors. Therefore different buyers, in terms of size and sector were to be selected for the cases. For the tier 2 suppliers, one big and small supplier was to be picked.

For the cases that were to be selected, the interviewees were to be selected from the suppliers' and the buyers' sides, so that both sides' perspectives are represented. From the main company, the first-tier supplier, a sales and purchasing manager was the best choice, since these employees are closely involved in the buyer-supplier relationship. Purchasing managers from the buying firms were to be selected too, who were in direct contact with the first-tier supplier to ensure knowledge from the buying side. In total twelve interviews were to be conducted on twelve buyer-supplier relationships within Company X. Meaning that there were interviews with the sales staff from Company X and one purchasing manager from a buyer firm. In the last two cases, a first-tier purchasing and lower-tier sales manager were to be interviewed.

However, due to rejections and availability restrictions, it was not possible to conduct this research in the supply chain of a first-tier supplier. So a different approach was undertaken. Which resulted in five cases in total, visualized in the table below, table 1. Because the cases represent first-tier suppliers, this is to find out the key factors that motivate them to fulfill the role of an agent for the buying firms. Sales and purchasing staff were interviewed since they have direct contact with buyers and suppliers. Three cases are labeled as S (and a number), which is the first-tier supplier and the buyer part of that relationship (BX). In the other two cases, the tier-1 supplier is now the buying firm (B1 and B2) and SX represent their suppliers.

Table 1: The selected cases

Case	Function of interviewee	Buyer or supplier side	Company size (employees)	Industry	Interview Duration (minutes)	Online or in Person
S1-BX	Senior Sales Manager	Supplier side	140	Chemical Industry	30	In Person
B1-SX	Head Purchasing & Logistics	Buyer side	65	Metal Industry	16	Online
S2-BX	Sales Manager	Supplier side	x	Trailer building industry	20	Online
B2-SX	Strategic Purchaser	Buyer side	54	Carpentry Industry	17	In Person
S3-BX	Sales employee	Supplier side	43	Fossil-fuel Industry	15	In Person

3.3 Data collection

Before the start of the interviews, the interviewees got informed about the different concepts, to avoid any confusion. These are sustainable sourcing, supplier engagement, and buyer-supplier relationship (see Appendix A). The interview approach used was semi-structured. For each concept, different questions were asked since a semi-structured interview approach was used these questions to capture the big picture. Specific questions were asked as a result of the interviewee's responses. The interviews were conducted in person or via an online meeting, where all the audio was recorded.

The concepts used for the interviews with the buyer side were sustainable sourcing and supplier engagement. The first concept relates to the literature section on the first-tier supplier. Because the questions of this concept are related to, what the literature sees as the secondary role of the first-tier supplier. This concept tries to catch whether the firm has guidelines for sustainability,

the reason for its existence, and how lower-tier suppliers are reached to comply with these standards. The second one, supplier engagement, is related to the literature section on transparency and sustainability since transparency about suppliers' operations and suppliers is needed for engagement. Transparency is important since it is related to identifying where room is for improvement in sustainability. Related to the first concept six headline questions were asked. The other questions related to the second concept, namely:

1. *Could tell me about your company's sustainable standards/guidelines and how important are these?*

This question aims to capture whether sustainability is important for the firm and to find out how important this topic is in their business. Furthermore, through follow-up questions to find out the reasons for its existence.

2. *Can you describe the supply chain process from the beginning to the end?*

To get an overall picture of the supply chain, was the goal of this question. And to see to what extent there is clear visibility.

3. *How do you reach lower-tier suppliers with your sustainability program and standards?*

This is to get the picture of whether and how sustainability is stimulated by the subsuppliers.

4. *How do you evaluate whether your first-tier and lower-tier suppliers' products are in line with your sustainability standards and give them feedback?*

This question wants to identify how buying firms monitor their suppliers and what the consequences are if guidelines or policies are not met.

5. *How do you see first-tier suppliers' role in implementing sustainability to lower-tier suppliers?*

To get the view of the tier 1 supplier clear of how they feel about distributing the sustainable agenda of the buying firm.

6. *Is the pressure to stimulate sustainability toward your suppliers?*

The goal of this question is to find out if and by whom firms are stimulated to stimulate sustainable practices.

7. *How does your company select its suppliers and how can you ensure that products or materials are produced environmentally?*

8. *How do you support suppliers' transparency about their operations and suppliers and how is this safeguarded?*

These questions are focussing on finding out how companies are matching their suppliers with their sustainable guidelines. And finding out how open firms are about their operations in a supply chain is the object of the two questions above.

9. *How do you incentivize suppliers? And could you share an example?*

10. *What are the benefits for your direct suppliers to adopt your sustainability standards and push them toward lower-tier suppliers?*

The last two questions are aimed to identify if suppliers and subsuppliers are rewarded for sustainable practices and to identify what are the possible benefits of those practices for themselves. The concept buyer-supplier relationship was used as a concept for the supplier side. Which is related to the literature on first-tier suppliers and lower-tier supply chain. Because this concept aims to identify the relationship between the two and how they cooperate to achieve sustainability within the lower part of the supply chain.

1. *Could tell me about your company's sustainable standards/guidelines and how important are these?*
2. *Can you describe the supply chain process from the beginning to the end?*

These two questions have the same objective as the first two questions above.

3. *Can you describe whether you disclose information about your supplier to the buying firm?*

This question aims at identifying the reason why firms do or do not disclose information about the lower part of the supply chain and why the buying sides want to know this.

4. *Do you have customers, who are demand sustainable projects?*
5. *Is pressure felt to stimulate sustainability toward your suppliers?*
6. *How do you work together with buyers to encourage sustainability throughout the entire supply chain?*

The two questions above aim to find out the role of the customers in the concept of sustainability and whether they influence it. Furthermore, whether they are working together or that it is just the responsibility of the supplier.

7. *How do you consider the position of NGOs and how big is their influence on your sustainable practices?*

What the position and the influence of NGOs are and how important these parties are valued by the supplier is the goal of this question. The interview protocols in Appendix B and C provide an overview of questions for the buyer and supplier side. Here headlines questions were used, and follow-up questions to get more specific answers.

3.4 Data analysis

The data analysis began after the data collection process. First, all the interviews were transcribed using audio-to-text software. Second, coding is used to label the transcribed data. "*Codes are tags or labels for assigning units of meaning...*" (Huberman & Miles, 1994). Third, cross-comparisons were used to observe similarities, differences, and patterns between the different cases. Based on these steps and conclusions the Research Question will be answered.

Table 2: Coding connected to literature and results

Codes	Related literature	Related to result
Pressure for sustainability within the supply chain	2.2. First-tier suppliers	-Identification of which entities are causing the pressure and how that is visualized. -Finding the external factors
Disclosing information about lower tier-suppliers toward customers	2.1 Supply chain transparency and Sustainability 2.3. Lower-tier supply chain	-Finding out if and why first-tier suppliers are willing to share this -To what extent the visibility is clear -The influence of this part of the supply chain on first-tier suppliers and on buying entities
Guidelines for sustainability	2.1 Supply chain transparency and Sustainability	-Finding the internal and external factors of its existence -Identification of who takes the lead in this.
Supply chain	2.3. Lower-tier supply chain	-Identification of the current visibility -Reasons for first-tier suppliers to select their suppliers

4. RESULTS

The collected data from the interviews were analyzed using MAXQDA 2022. This is to identify similarities in factors that caused tier 1 suppliers to stimulate sustainability further down the supply chain. To answer the research question: *What are the key factors that motivate first-tier suppliers to mobilize their lower-tier supply chain to implement sustainable practices?* the following paragraphs describe the results gained from the interviews. These are seen as the key factors, which are Environmental Responsibility, Pressure from the Government and NGOs, and the Influence of Customers. Therefore the following sections are answering the research question. All the quotes in the following paragraphs are *italicized*. Since the interviews were conducted in Dutch, the quotes are translated into English.

4.1 Environmental Responsibility

The first key factor that was seen in all interviews, except one, was the consequences for the environment of doing business. All the companies in this research realized that their enterprise has an impact on the environment, therefore they see it as their responsibility within the organization. The following quotes are related to the question about the advantages of sustainable practices.

"It is also a sense of responsibility, therefore we want to reflect that this is the case." And *"Yes, of course, we have advantages from it, the world around us."*

Some interviewees mentioned that focussing on environmentally doing business has a few additional benefits. Examples named were image and marketing purpose. However, it was found that, although the impact on the environment is highly valued, it is not always feasible in some industries to bring this duty fully into practice. The reasons given in case three are the low-profit margins and the increase of the prices due to more sustainability in their products. Therefore clients have to be willing to pay more for sustainable products.

"We have to deal with customers and if they are demanding such products, then we want it too. However if the customer does not want it, then we are always too expensive and therefore we are not investing in such products."

Another note that should be addressed, is that not every firm is dictating sustainable norms. Therefore not every company can act as much on their environmental responsibility as they would.

Which was seen in case five:

"But do you still expect that the production is sustainable?" Answer: *"We are dependent on the big player, like Shell, BP and Total, who are dictating the norms and how to deal with the total production process."*

So some big firms are making up the norm regarding sustainability, especially in markets with homogeneous products. The reason is that some players can not demand more sustainability from their suppliers than is common in the market. So it depends on the type of industry to what extent companies can invest in a better environmentally friendly supply chain.

4.2 Pressure from the Government and NGOs

Some branches have already guidelines for sustainability, others are in the process of dealing with this question and how to put it into practice. Although four of the interviewees mentioned the pressure of the government and non-governmental organizations (NGOs) on their way

of doing business. However, this influence differs per type of company.

“I already named Shell which is one of our customers, who have continuous NGOs on the floor.” And “About sustainability, I have heard rumors that it is also the case that it is forced sometimes from higher on by the government.”

So also a difference in influence was seen. It derives from indirect influence to direct influence. In the last case, for example, the government is the one stating the guidelines for sustainability which are dictating the way of operating. This was seen in the composition of diesel. Biofuel must be added to this product. This makes the product more sustainable. Furthermore, sometimes governments are not stating clear goals. One respondent mentioned that the influence was more “theoretical”, meaning that they have to think about sustainability instead of concrete guidelines or action that must be undertaken. The type of business is related to the influence coming from the Government and NGOs. Firms operating in the fossil fuel and chemicals have more strict rules from these parties. This could be related to their type of business since these are more related to harming the environment.

4.3 Influence of Customers

The third factor that motivates first-tier suppliers to push sustainability further down the supply chain, is the influence from customers. This was identified in three interviews. This influence can be divided into two parts. The first one is the pressure on the first-tier supplier to actively invest in the sustainability of their products and operation. Furthermore to actively push this through toward their suppliers.

“... customers are going a step further, conducting interviews and kind of audit by our suppliers related to safety, quality, and sustainability.”

An example from case one is visualized this pressure. If their suppliers are not in line with the sustainability norms of the customers, they are pushing the first-tier supplier to look for another one, or they could lose the project.

The other part of the influence from customers is the demand for sustainable products and projects, which creates a marketplace. To which some firms are glad to act. One clear example was seen in one of the cases. There, a collaboration was seen between firms to develop sustainable products. Also, it was found that sustainability could lead to a reduction in costs, such as materials and transport. Which showed that sustainability can also be attractive. However, it is different from homogeneous products. Because these products are not distinguished from each other, therefore possible price increases due to sustainability improvements are not accepted by customers.

“Sustainability is not always more expensive....” And “there is a high demand for sustainability therefore we try to be in the front, and that is our business concept.”

It was mentioned too that if a firm is not focussing on sustainability, its business will be in danger in the next ten years.

4.4 Visibility of suppliers and their selection by first-tier suppliers

Other findings were found are related to the visibility of lower-tier suppliers by the first-tier supplier and their selection. It was found that first-tier suppliers do not have always a clear sight of their sub-suppliers. The firms mentioned that it is not their responsibility and that they are not directly conducting business with them. Therefore not all different-tier suppliers are stimulated to implement these practices. This is an obstacle to

the implementation of sustainable practices into the whole supply chain. Since the first-tier supplier does not always have a clear visibility of the supply chain, the buying firm has to find other approaches for the implementation of sustainable practices throughout the whole supply chain.

In most cases, three out of five, tier-1 suppliers chose for local suppliers. This is because such suppliers have a few advantages over oversea suppliers from India or China for example, such as the logistic advantage, good visibility of the direct suppliers, and better ensuring of good quality. The firms value long-term partnerships with the security of delivery above partners that can provide against lower prices.

The table below shows which factors were identified in the different cases that drive first-tier suppliers to increase their sustainability and in their supply chain.

Table 3: Overview of identified factors in the different cases

Case	Industry	Environmental Responsibility	Pressure from the Government and NGOs	Influence of Customers
1	Chemical industry	X		X
2	Metal industry	X	X	
3	Trailer building industry		X	X
4	Carpentry industry	X		X
5	Fossil-fuel industry		X	

5. DISCUSSION AND CONCLUSION

Since the theme of sustainability is becoming more important nowadays, it is also a hot topic in supply chain management. The literature addresses the importance of this concept and identifies the role of the first-tier supplier as an “agent” for the buying firm to stimulate sustainable practices toward their suppliers (Wilhelm, Blome, Bhakoo, & Paulraj, 2016). A gap in the literature on the factors for first-tier suppliers for stimulating sustainability within the supply chain was found. Therefore this study aimed to identify the key factors that motivate first-tier suppliers to fulfill this role.

5.1 Discussion of result

The results of five cases were used to answer the research question. After the interviews, coding, and cross-comparison three key factors, that motivate tier-1 suppliers to stimulate sustainable practices toward lower-tier suppliers, were identified. First, the environmental responsibility causes that all the respondents saw that operating more sustainably is better for the environment, which is their responsibility to take into account. However, this does not mean that everyone can heavily stimulate sustainable practices further down the supply chain. In the fossil-fuel industry, the big players are stating the norms for sustainability, so other players can not demand more from their suppliers that go beyond these norms. The trailer building industry hesitates to stimulate these practices actively since it increases the prices for clients which could harm their business. Furthermore, it was shown that first-tier suppliers do not have a

clear visibility of the whole supply chain themselves. They feel no responsibility for their sub-suppliers, which makes it more difficult to stimulate sustainable practices throughout the entire supply chain.

Second, the pressure from the Government and NGOs. Some firms felt direct pressure from the government, one was indirectly faced with NGOs because their clients had direct pressure from these organizations. It differs per type of firm how this pressure is. Some were faced with norms dictated by the governments, other felt soft pressure from the government to be more sustainable. The Government and NGOs are giving strict policies to firms that could directly be related to harming the environment. Examples are chemical and fossil-fuel firms.

Third, the influence of customers. three out of five saw the clients as a factor for sustainability. Since they could force first-tier suppliers to invest more in sustainability or their demand for such products created a market for this. On which they can anticipate like making a business out of it. Furthermore, sustainability means not always an increase in prices, also the opposite has been seen.

To conclude, the key factors that motivate first-tier suppliers to stimulate sustainable practices toward lower-tier suppliers are Environmental Responsibility, Pressure from the Government and NGOs, and the Influence of Customers. Although firms feel that is their responsibility to conduct business in an environmentally friendly manner, they do not always act on it. The influence of the Government and NGOs is stronger in sectors that have a direct negative impact on the environment. Customers such as buying firms pressure first-tier suppliers to be more sustainable and to stimulate this further down the supply chain. Also, it was seen that first-tier suppliers took the initiative to develop sustainable products to fulfill the demand from customers.

5.2 Implication for the literature

The introduction and literature review described that due to growing awareness in society, buying firms are stimulated to gather information about their suppliers of the entire supply chain. However, they do not have a clear visibility of the lower-tier suppliers. Therefore, these firms use their direct suppliers to mobilize the lower-tier suppliers to implement sustainable practices. The literature mentioned some motives for first-tier suppliers to fulfill this role but left out whether these are significant. This thesis looked into the role of these suppliers to identify the key factors that motivate them to stimulate sustainable practices toward lower-tier suppliers. This study provides three new insights to the literature.

First, the first-tier supplier has, due to the direct contact of buying entities and more visibility on the supply chain, a good position to play an important role in the sustainability question. It was found in this thesis that first-tier suppliers do not have very clear visibility of lower-tier suppliers. Although they know their suppliers (tier 2), suppliers further down are less known. This contributes to the literature of (Ayuso, Roca, & Colomé, 2013) and (Grimm, Hofstetter, & Sarkis, 2014) which mentioned that first-tier suppliers should manage the sustainability standards of lower-tier suppliers in the supply chain. But to what extent first-tier suppliers have visibility was not discussed. This thesis extended this insight by finding out that tier-1 suppliers do not feel responsible for their sub-suppliers, and therefore not always have clear visibility of these suppliers. In two cases, it was found that organizations feel not responsible for the sustainability of their sub-suppliers, only of their direct suppliers.

Second, in the literature, the role of the first-tier supplier was described as a “double agent”, meaning that this supplier’s role

is to implement sustainability within his firm and to stimulate its implementation within its supply network (Wilhelm, Blome, Bhakoo, & Paulraj, 2016). It was found in this study that the first-tier supplier is not necessarily an agent of the buying entities. Through the awareness of its impact on the environment and the arising of the marketplace demanding sustainable products, this supplier could therefore be the initiator for improving sustainability within the supply chain. Therefore this study contradicts this literature by stating that the first-tier supplier does not always have to be an “agent” for the buying side. Since this option was not mentioned in the current literature, which could imply that being an “agent” is the only option for the first-tier supplier.

Third, the key factors of Pressure from the Government and NGOs and the Influence of customers are in line with those (Kashmanian & Moore, 2014) and (Wilhelm, Blome, Bhakoo, & Paulraj, 2016). Kashmanian and Moore saw the role of Third-Parties as informing the marketplace and stimulating sustainability in various ways. In this thesis, the Government, NGOs, and Customers could be seen as third-party organizations. It was found that the influence of the Government and NGOs is more strict and demanding in sectors that have a direct impact on the environment, such as chemical and fossil-fuel companies. Wilhelm et al. (2016) identified some motives for first-tier suppliers to stimulate sustainability within their network. But the key factors identified in this study were not mentioned, therefore this thesis extends the current knowledge about sustainability within the supply chain.

5.3 Managerial Implications

This study contributes to supply chain management, it shows the role of the first-tier supplier in improving sustainability throughout the supply chain. The study shows that the importance of sustainability is different per industry and therefore that the role to what extent this supplier is motivated to stimulate sustainable practices is different too.

This study states that managers should be aware of the rising importance of sustainability. Because it is a booming business, and if firms are not preparing for this, the future of their business is at stake. It was seen that not every company was equally far. Some were at the beginning of setting up guidelines for sustainability, others already developed a business model on it. Furthermore, managers need to be aware of what factors motivate or demotivate their suppliers to operate more sustainably and to stimulate this further down the supply chain. This is to improve the overall sustainability. Because it seems that this concept will be more important in the future. And it is not always the case that sustainability is always more expensive. This helps managers to be prepared for the future and take advantage of this rising concept.

5.4 Limitations and future research

When reading this research, some limitations need to be taken into account. The original plan was to conduct twelve interviews in six cases. To achieve this multiple tier 1 suppliers were contacted to investigate four cases between this first-tier supplier and their clients (buying firms) and two cases between this direct supplier and its subsupplier. However, due to rejections from companies, another path was chosen. Sales and purchasing employees from different companies were approached. This resulted in the final representation of five respondents each from a different type of industry, which is an important limitation. Because this small sample size is a poor representation of first-tier suppliers. Furthermore, due to this small sample, the results from this study can not be generalized. Therefore alertness is advised when reading the results. Another limitation is that this

qualitative research could be influenced by the interviewer. This could be through the way of responding to answers which might influence answers later on or lacking in asking follow-up questions.

These limitations have influenced this study, resulting in the reduction of the study's validity. Furthermore, this study might be not complete, since information could be missing due to a lack of follow-up questions. This research provides a base for further research. First, the findings already mentioned that first-tiers suppliers are stimulating their direct suppliers to be more sustainable but not further down the supply chain. Since a small sample was used, this should be investigated on a bigger scale. This is important because the suppliers at the beginning have the most impact on the total sustainability within a supply chain and also could have an enormous impact on buyers' finance and reputations (Kashmanian R. M., 2018).

Second, to maintain and improve sustainability, responsibility could support this. But then a large-scale research study should be conducted, to find out which player in the supply chain should be held accountable for violation in a certain chain of the whole supply chain. Furthermore, how could technology innovations increase the visibility and traceability of a supply chain is an option for future research too.

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8. APPENDICES

Appendix A: Definitions of the concepts in the interview protocol

Supplier engagement	“.. it calls for supplier their managers and employees to invest their “full selves,” physically, cognitively, and emotionally in the task.” (Wohlgezogen, Hofstetter, Brück, & Hamann, 2021).
Sustainable sourcing	“...it considers economic, environmental, and social criteria in sourcing decisions at the same time” (Schneider & Wallenburg, 2012). So it is all about Corporate Social Responsibility (CSR).
Buyer-Supplier relationship	

Appendix B: Interview protocol buyer (purchasing staff)

Question	Answer
Sustainable sourcing:	
1. Could tell me about your company’s sustainable standards/guidelines and how important are these?	
2. Can you describe the supply chain process from the beginning to the end?	
3. How do you reach lower-tier suppliers with your sustainability program and standards?	
4. How do you evaluate whether your first-tier and lower-tier suppliers' products are in line with your sustainability standards and give them feedback?	
5. How do you see first-tier suppliers’ role in implementing sustainability to lower-tier suppliers?	
6. Is pressure felt to stimulate sustainability toward your suppliers?	
Supplier Engagement:	

7. How does your company select its suppliers and how can you ensure that products or materials are produced environmentally?	
8. How do you support suppliers' transparency about their operations and suppliers and how is this safeguarded?	
9. How do you incentivize suppliers? And could you share an example?	
10. What are the benefits for your direct suppliers to adopt your sustainability standards and push them toward lower-tier suppliers?	

Appendix C: Interview protocol supplier (sales staff)

Question	Answer
Buyer-Supplier relationship	
1. Could tell me about your company's sustainable standards/guidelines and how important are these?	
2. Can you describe the supply chain process from the beginning to the end?	
3. Can you describe whether you disclose information about your supplier to the buying firm?	
4. Do you have clients, who demand sustainable projects?	
5. Is pressure felt to stimulate sustainability toward your suppliers?	

6. How do you work together with buyers to encourage sustainability throughout the entire supply chain?

7. How do you consider the position of NGOs and how big is their influence on your sustainable practices?