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## MASTER THESIS

# INTERACTION OF COVID-19 WITH SUSTAINABLE SUPPLY CHAIN MANAGEMENT ACTIVITIES

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### **ABSTRACT**

Supply chain disruptions and unforeseen risks can arise at any time due to economic tensions or environmental challenges, such as the current COVID-19 crisis. This case study aims to reveal the interaction of the COVID-19 pandemic with sustainable supply chain management (SSCM) activities and demonstrates that a SSCM approach puts businesses in a better position in times of disruptions. In this qualitative research, thirteen sustainable entrepreneurs were interviewed in order to better understand their position and explore the benefits of SSCM for dealing with COVID-19, the benefits of COVID-19 for SSCM, and the challenges sustainable entrepreneurs of start-ups and SME (small and medium-sized enterprises) experience in these times.

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## INTRODUCTION

COVID-19 led global economies to a standstill and downtime by also exposing the vulnerability of global and connected supply chain management (Roberts, 2020). Therefore, COVID-19 can be seen as the trigger for the need to change and to reflect on how entrepreneurs have operated so far. The media pointed out and questioned if the global trade connections brought disadvantages and if a shift to more localized supply chains were the desired response (Boyd, 2020).

All businesses experienced supply chain issues due to COVID-19. The outcomes are production slowdowns and transportation restrictions which harm the productivity of businesses (Boyd, 2020). Moreover, 75% of the companies, interviewed by the Institute of Supply Management, mentioned to experience supply chain disruptions due to COVID-19. Companies must accordingly catch up for delayed or missed deliveries or even think of shifting to produce other items, such as face masks and frontline medical workers equipment to generate the forfeited profit (Boyd, 2020).

The WTO defines COVID-19 as “*a pandemic which represents an unprecedented disruption to the global economy and world trade, as production and consumption are scaled back across the globe.*” (WTO, 2020) “*There is no getting around that*”, emphasizes WTO Director-General Roberto Azevêdo (WTO, 2020). “*We need to lay the foundations for a strong, sustained and socially inclusive recovery. Keeping markets open and predictable, as well as fostering a more generally favorable business environment, will be critical to spur the renewed investment we will need*”, underlines WTO Director-General Roberto Azevêdo (WTO, 2020). Accordingly, it is essential to put the focus of this research on SSCM and its potential relationship with COVID-19 and sustainability.

Sustainable entrepreneurs, sustainable business approaches and SSCM approaches are distinct concepts, however, highly interact with each other. Usually all sustainable founders have strong sustainable values, which lead to the establishment of a sustainable business approach, while also building up a sustainable supply chain management in order to ensure sustainability in the whole business (Gray & Balmer, 2004). The term sustainable entrepreneur is defined as a person who grounds a business with the goal to make the world more sustainable, which is based on the Brundtland Report (Our common Future) back in 1987: “*Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*” (Brundtland, 1987)

Currently, all companies face obstacles in their supply chain management due to the COVID-19 pandemic. Supply chain management is complex and hard to analyze, thus it is indispensable to find similar strategies and challenges among the entrepreneurs to be able to understand their worries and thoughts and share insights which can be adapted by similar businesses to overcome the obstacles.

Consequently, sustainable entrepreneurs of start-up or SME in the fashion and lifestyle sector were interviewed. A start-up is defined as a young company with limited resources with the goal to develop or create a new, unique product or service for the market (Fontinelle, 2020). Small and medium-sized enterprises are defined by the EU recommendation 2003/361 by the factors of staff headcount and turnover (or balance sheet total) (European Commission, 2003). A medium sized business must have less than 250 staff headcount and not more than €50m turnover. A small business is defined by less than 50 employees and a maximum of €10m turnover (European Commission, 2003). In this research the largest business consists of 60 employees and thus falls within the medium-sized category. The rest of the interviewed businesses represents small businesses and start-ups. Regarding their size, it can be noticed that the interviewed businesses usually experience limited resources and capital (European Commission, 2003). Consequently, large-scale companies with extensive resources and budget will not be part of this research.

Factors and criteria of sustainable supply chain management are seen as potential advantages to overcome crises more easily, hence the practical relevance of the research addresses start-ups and SME, since those participated in the qualitative interviews. This research could help start-up entrepreneurs to see where to put the focus when building their own supply chain management since the phase of starting a business can get easily vast and overwhelming. This thesis can help potentially traditional start-ups or SME to create and establish more resilient and agile supply chains, in order to be prepared or even prevent economic loss.

The majority of research in the field of supply chain management worldwide is on large-scale enterprises and very limited literature is available in the field of SCM referring to SME or start-ups (Archer, Hong & Jeong, 2006). This leads to the conclusion that the conducted frameworks and developed strategies for large-scale enterprises are less or not suitable for SME due to differences in implementation, feasibility and resources (Archer et al., 2006). Thus, this research adds insights of the perspective of start-ups and SME to the academic debate.

Moreover, the topic of the potential correlation of SSCM and crises provides additional information to the existing SSCM literature.

The aim of this thesis is to understand and answer the research question: “*How does COVID-19 interact with sustainable supply chain management activities?*” with a focus on the following sub-questions:

- “*What are the benefits of SSCM for dealing with COVID-19?*”
- “*What are the benefits of COVID-19 for SSCM?*”
- “*What are the challenges sustainable entrepreneurs of start-ups and SME experience in these times?*”

The master thesis is structured as follows:

First, in the theory section, previous research regarding supply chain management, sustainable supply chain management and supply chains in times of crisis will be demonstrated and explained. This study seeks to understand the interaction of the COVID-19 pandemic with sustainable supply chain management activities. To be able to create legitimate outcomes, a qualitative approach is applied in the method section, which includes thirteen interviews with entrepreneurs of start-ups and SME in the fashion and lifestyle sector. The results section will demonstrate the patterns emerged during the interviews in order to answer the research questions and highlight significant findings in the discussion section. Furthermore, this study offers recommendations, limitations as well as demonstrates its value to academia and the practical field.

## THEORY

### Supply chain management

The concept of supply chain management is well established in the literature and is generally divided into the management of the upstream and downstream supply chain (Lambert, Stock & Ellram, 1998). Authors often talk merely about the upstream supply chain, however, supply chain management also implies transporters, warehouses, retailers, and customers (Cousins, Lamming, Lawson, Squire, 2008).

Ayers (2001) proposes the definition of a supply chain as *“life cycle processes comprising physical, information, financial, and knowledge flows whose purpose is to satisfy end-user requirement with products and services from multiple linked supplier.”*

Although definitions of the concept of supply chain management differ across authors, it can roughly be defined as the activity (product development, sourcing, manufacturing, logistics, information communication) and process of sourcing the raw materials needed for the product of a business until the delivery of the product to the (end-) consumer, including the planning, controlling and executing of a product's flow (materials, production, distribution) (Mentzer, DeWitt, Keebler, Min, Nix, Smith & Zacharia, 2001). Supply chain management had already existed for a long time but before organizations/businesses merely focused on what was happening within their company which led sooner or later to ineffective supply chains (Rouse, 2019). Therefore, entrepreneurs had to understand that all components of the supply chain management were linked. Even though it might sound like a linear and simple process, supply chain management is highly complex, since a lot of different parties have to play together to run well, which demands good collaboration, communication between all participants and risk management (Mentzer et al., 2001).

### Sustainable supply chain management

SSCM has its roots in SCM with an extension of the initial SCM concept and has shifted from the one-dimensional (economic) perspective towards a three-dimensional concept (adding the environmental and social components) (Sarkis, Zhu & Lai, 2011). Sustainable supply chain management can be seen to realize the social, environmental, and economic goals, set by a company, to improve the long-term economic performance of the individual company and its supply chains (Ahmad, Brito, Rezaei & Tavasszy, 2016). Thus, sustainable supply chain management can be explained as the management of the material, information, capital flows and the cooperation between all companies which are included in the supply chain with the

focus on the three dimensions of sustainability: economy, environment and the social aspect (Ahmad et al., 2016).

It is crucial for long-term benefits to employ environmental and social responsibility (which includes product safety, employee's health and safety, prevention of pollution, conservation of resources and high quality) (Rouse, 2019). Rouse (2019) highlights that by establishing sustainable practices in the up- and downstream supply chain, costs can be reduced in the long run, which means that companies can make profit by adopting sustainable practices. By doing so, companies profit from cost reduction, competitive advantage, better management of risks and improvement in operational efficiency. Numerous companies have already identified GSCM (green supply chain management) as an advantage since also customers and suppliers request them to do so (Rouse, 2019).

The above-mentioned definitions all show that the managerial decisions of a company should have the goal that the company itself, but also the whole supply chain, have a good performance regarding the three layers of sustainability (Ahmad et al., 2016). Therefore, companies need to look beyond their increase in profit, and include the environment and the need of their stakeholders (social dimension). Stakeholders are more than just the suppliers, it also includes the local communities, the government, and customers (ibid.).

### **Advantages of developing SSCM**

According to the Step-by-Step Guide to Sustainable Supply Chain Management published by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (Weiss, Hajduk & Knopf, 2017), different advantages, however also obstacles, appear by developing a sustainable supply chain management.

The advantages of SSCM compose out of minimizing and avoiding risks, designing efficient business processes, strengthening the capacity for innovation and transparency, and living up to higher standards in the business environment as well as creating values collectively (Weiss et al., 2017).

Even though, SSCM is in the long-run beneficial, obstacles occur along the path. It is, therefore, vital to understand as an entrepreneur that sustainable supply chain management is complex and more time-consuming to manage and to organize than traditional SCM (Weiss et al., 2017). Exchanging information and communicating with all partners of the SC are essential factors. By being completely transparent, usually negative impacts get uncovered which need

to be eliminated to avoid and prevent risks. Negative impacts can arise through sub-suppliers; consequently, a code of conduct is important to avoid risks, or even better, to work with the suppliers directly. Furthermore, data management is according to Weiss et al. (2017) the only key to transparency, however, it is time-consuming and resource demanding to collect all the needed data (ibid).

### **Drivers of SSCM**

Businesses experience influences from internal and external factors to implement a sustainable supply chain management which are defined by the literature as pressures or drivers of SSCM (Saeed & Kersten, 2019).

The authors divide external drivers of SSCM into societal-, regulatory-, and market pressure and emphasize that those factors are situated outside the business, however, they influence the internal actions of a business (Saeed & Kersten, 2019). The societal pressure is composed of media/press, public pressure and NGO pressure. Whereas the regulatory pressure assembles the factors: government legislation, regulations, financial benefits and certifications. The market pressures seem to be the most visible ones and deal mostly with relationship improvements, business performance/ reputation and pressures from competitors, shareholders, suppliers and customers with the aim to achieve competitive advantages and adapt to the globalized 21<sup>st</sup> century (Saeed & Kersten, 2019).

The organizational-concerning factors, also defined as internal drivers of SSCM, were divided into organizational resources, corporate strategy, organizational culture, and organizational characteristics (Saeed & Kersten, 2019). The latter depends on the sector, size, geographical location, level of implemented sustainability actions and degree of internationalization. Organizational culture includes the innovativeness, the shared information, health and safety regulations and the applied code of conduct. Organizational resources describe the human and physical capital and the employees' pressure. Corporate strategy is composed of commitment, strategy and performance (Saeed & Kersten, 2019). All the mentioned pressures influence and trigger businesses to adopt a SSCM approach (ibid.).

### **Challenges of SSCM**

Abbasi and Nilsson (2012) detect major challenges for SSCM which are constituted of cost increase, operationalization of sustainable development, changing cultures and mindset, and obstacles to control and manage uncertainties. The primary focus of SCM is based on the



financial aspect, which presents a challenge for SSCM, since less resources are available, however, higher costs of production and payments are noticed (ibid).

Simpson, Demeter, Power and Samson (2007) identify pressures coming from customer-, supplier- and governmental side. Latter requires more cooperation and collaboration among businesses and further with governmental organizations (ibid.). Customers demand lower prices, however, high sustainable quality (Walker, Di Sisto & McBain, 2008). Therefore, the cost factor describes the persistent cause of conflict of social- and ecology trade-off versus economy trade-off (Walker et al., 2008).

Lambert & Cooper (2000) emphasize that the performance of a supply chain describes the interaction of each involved partner in the supply chain management. Whenever the supply chain performance is affected, the whole supply chain is concerned (Aramyan, Lansink, Van Der Vorst & Van Kooten, 2007). The factors that influence (sustainable) supply chain performance involve supply chain relationships (longevity of the relationship, customer-, supplier involvement, information sharing, trust), manufacturing (quality, flexibility), and other factors, such as environmental uncertainty (Mehmeti, Musabelliu & Xhoxhi, 2016).

### **Supply chain management in periods of crisis such as the COVID-19 pandemic**

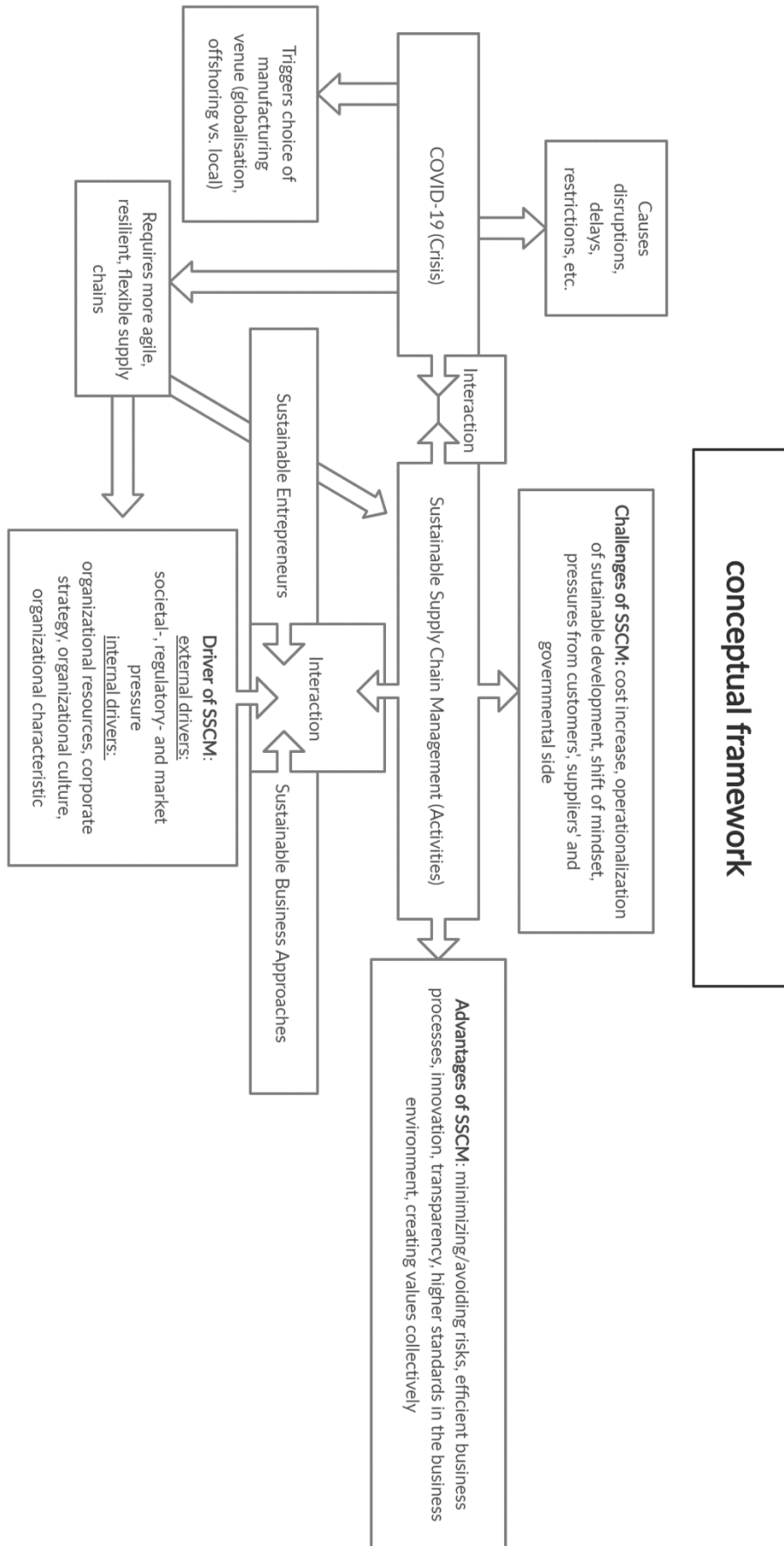
Even though the interaction of COVID-19 with SSCM constitutes the research question, so far only traditional supply chain managements were examined in the literature. It is however necessary to provide a foundation, to afterwards compare and contrast these outcomes with SSCM.

The ISM – Institute for Supply Management published first results on the impact of COVID-19 on supply chain management (Boyd, 2020). The survey involved 628 respondents (sustainability was not a criterion, which companies had to fulfill) covering the sectors of manufacturing and non-manufacturing U.S. organizations. The study reveals that 75% of the participants noticed disruptions due to COVID-19 in the transportation of their goods (ibid.). Manufacturers in China stressed that the workload capacity reached only 50% of the normal performance. Moreover, more than 44% of the interviewees did not have a prevention or a backup plan with their Chinese partners in case of disruptions. Delays in receiving orders seemed inevitable and a lack of information exchange was experienced by the majority as well. Due to this situation companies postponed visits in the factories in China (Boyd, 2020).

Within traditional supply chains it has been noticed that the pandemic undermines the importance of sustainable actions (Roberts, 2020). The faster suppliers have to work due to COVID-19, the less they care about environmental responsibilities, since everything which counts are set deadlines to stay in business. An increase in waste, energy use and water overconsumption are a few of the results. In addition, switching suppliers can lead to more challenges, since for a good supplier relationship, visiting the factories and having dialogues are requirements which cannot be proceeded due to travel restrictions (Roberts, 2020).

Another important factor to create resilient and agile supply chains, is through risk mapping and sustainability performance monitoring (Roberts, 2020). OECD Secretary-General Ángel Gurría highlighted *“that supply chain disruptions and unforeseen risks return at any time due to trade tensions or environmental challenges, consequently, supply chain management must shift to a more sustainable form.”* (Roberts, 2020) Many authors state that through globalization and offshoring the production, supply chains are vulnerable to disruptions. Consequently, the topics sustainability and sustainable supply chain management will be subjects, businesses have to deal with after the pandemic, to decrease the risk of disruptions and diversify their supplier base to create a more agile, flexible and independent supply chain management (Mace, 2020).

Moreover, local supply chains will get more attention since consumers will probably seek for alternative local options. Hence, the question arises whether it is a solution to take a step back from global offshoring strategies and to go a more sustainable and local way (Mace, 2020). COVID-19 is also being compared to the climate change crisis where disruptions in supply chains of businesses have already been noticed as well. Therefore, regardless of the kind of crisis, supply chains must be built in an agile and flexible way to overcome challenges (Mace, 2020).



## METHODS

### Qualitative research approach

In order to obtain an informative overview, I decided that a qualitative approach is most suitable. Qualitative methods are helpful in researching an area where little literature exists so far. Therefore, a qualitative approach suits the complex topic of sustainable supply chain management perfectly to divide this intricate topic into more manageable parts (MeasuringU, 2020). The qualitative research approach will allow and facilitates answering the research question: *"How does Covid-19 interact with sustainable supply chain management activities?"*

Qualitative research, also called exploratory research, is defined by the Cambridge English Dictionary as *"a type of research with the aim to find out about people's viewpoints, experience and knowledge, rather than data which can be defined in numbers."* (Cambridge English Dictionary, 2020) A qualitative approach is crucial for this research because the focus is on different entrepreneurs all performing in the fashion and lifestyle sector. Although every supply chain of a company is unique, similar challenges and advantages can be noticed since all entrepreneurs fall into the same sector and size category.

The aim is to seek different views and key insights from the participants of this study, to learn about their supply chain managements. Moreover, the qualitative approach is useful since the interviewer collects most of the time more data about the asked topic than initially set out to discover. This enables the researcher to extend the initial idea which might not have included all possible options (Hammarberg, Kirkman & Lacey, 2016).

In this research thirteen interviews were conducted to collect the data. John Latham (2019) defines that a qualitative researcher has enough participants when additional interviewees would not provide any additional value and insight to the topic and refers to the concept of saturation. Accordingly, whenever you stop learning something new from a supplementary participant regarding the defined topic, the researcher has achieved saturation (Latham, 2019). Guest, Bunce and Johnson (2006) suggest and recommend that when it comes to homogeneous groups, researchers can focus on around twelve participants to achieve the so-called saturation. Latham (2013) agrees with this proposed guideline confirmed by his own experience on a research study regarding CEOs, where eleven participants took part. He argues, however, that by exceeding the point of saturation, in his case twelve participants, the author ensured that no new relevant data would emerge in additional interviews/observations (Latham, 2013). These guidelines confirm the validity of the number of interviewees used in this research.

The data collection methods vary using semi-structured or (un-)structured approaches according to the defined focus group (Hammarberg et al., 2016). Through interviews, observations and the collection of data in person, the interviewer obtains a broader picture of the problematic, and hence can link all the collected data to uncover the crucial triggers and causes (MeasuringU, 2020). However, qualitative research has to be as rigorous, reliable and valid as quantitative research (Gioia, Corley & Hamilton, 2013).

A semi-structured interview style was applied, since neither an unstructured nor a structured interview approach would fit. Unstructured interviews are mostly conducted in long-term field work and structured interviews could lead the participants in one direction (Corbin & Morse, 2003). In semi-structured interviews the respondents answer to pre-defined open-ended questions. The interviews last between 30 minutes up to an hour, depending on how many questions are asked (Corbin & Strauss, 2015). The interview guide consists of core questions and related subsection questions. To create an equilibrium and an approach best tailored for this research, the thirteen interviews were divided among founders, sustainable managers, product managers or operation managers based in the fashion and lifestyle sector. In this research the interviews lasted between 30 and 70 minutes depending on the interview partner.

### **Interview partners**

Conducted between April 9<sup>th</sup> and May 18<sup>th</sup>, 2020, the pool of participants largely represented experienced practitioners, managers, and directors in a supply chain management role. The respondents defined their businesses as start-ups or SME in the fashion and lifestyle sector.

The fashion and lifestyle sector comprised in this research, entrepreneurs operating in the field of shoe-, backpack/bag- and (sports) clothing production and distribution. All interviewees were mentioned and stated by their function, the sector, or/and the country they are based in, however, neither real nor invented names were used in this research.

Company category	Company field/sector	Country	Interviewee function
Small business	Clothing	Bali/Spain	Founder
Start-up	Clothing (period panties)	Canada	Production manager

Small business	Clothing	Germany	E-commerce director/ Operation Manager
Small business	Clothing	UK	Founder
Start-up	Sport clothing	Netherlands	Founder
Small business	Clothing	USA	Director of operations
Start-up	Clothing	Turkey	Founder
Small business	Clothing	Germany	Operation Manager
Medium-sized business	Clothing	Germany	Corporate Social Responsibility Manager
Start-up	Bags/Backpacks	Germany	Founder
Small business	Bags/Backpacks	Netherlands	Founder
Start-up	Shoes	France	Founder
Small business	Shoes	Germany	Founder

### **Interview guideline**

The questions raised during the interviews were based on an interview guide (see Appendix A) and addressed the topics:

- definition and meaning of sustainable supply chain management
- assurance of sustainability within their supply chain
- current and future state concerning challenges and opportunities in the supply chain management due to the COVID-19 pandemic
- changes in the sustainable supply chain management since COVID-19
- biggest challenges entrepreneurs face and how they (try to) overcome them
- sustainable supply chain management as an opportunity in times of crisis

### **Analysis**

The semi-structured interviews were recorded and transcribed in order to be examined, coded, categorized and analyzed. The thirteen interviews were transcribed through a data-

driven coding/open coding method with the help of the software MAXQDA 2020 used for qualitative analysis.

The data analysis of the semi-structured interviews consisted of three phases:

First, the analysis started by transcribing the conducted interviews to capture the overall message and perspective of the entrepreneurs. The transcripts of the recorded interviews provided a clear understanding of the experiences and insights of the participants.

Second, the interview transcripts were imported into MAXQDA 2020 to continue with the coding and the development of the codes. The aim of this phase of the analysis was to code relevant passages in the interview transcript that related to sustainable supply chain management and COVID-19. Therefore, an open coding was first examined, and afterwards predefined codes were used to provide as unbiased results as possible.

Third, the example sentences which defined quotes from the data were added to the defined code. Moreover, linkages among the themes (codes) were defined to create categories. A theme or a topic was considered important if at least three entrepreneurs mentioned it in order to maintain and define it as a valid code. The data collection as well as the data analysis were examined to find patterns and linkages in the data.

The coding process was carried out three times in total to ensure that all word units were assigned to the adequate code. One new topic emerged during the conduction of the interviews, which was the role of the government, which will be discussed in more detail in the discussion section. After adding to each word unit, a code, similarities and differences among the themes and patterns were explored. Saturation was reached, since no more new codes and themes emerged which allowed me to continue the analysis.

Through the intensive analysis of the data, it was possible to filter out deep insights and significant findings to answer the research question of this paper. The findings will be explained to the reader in a logical line of argumentation to uncover the most stated challenges and advantages in the result section. The codes established through the process are divided into six categories: Resilience, Strong partnerships, More conscious consumer, Transparency, Strategic learnings and Challenges (more details see Appendix C).

## RESULTS

In this section, the results of the semi-structured interviews are presented. Each developed category will be described in more detail. Even though the entrepreneurs slightly differ in the sectors: shoes, bags/backpacks, or the clothing field, they all fall into the broader category of fashion and lifestyle.

The terms sustainable businesses, sustainable entrepreneurs and sustainable supply chain managements will often be mentioned throughout the results section. However, it must be clear, that although these three terms differ from each other, they still influence and are highly linked with each other (see conceptual framework).

### Resilience

All participants mentioned in the interview how crucial a SSCM approach and creating resilient supply chains are in times of crisis. The interviewees often referred to different types which can be indicated as results from a resilient supply chain management, such as flexible action, thinking ahead, dynamic/adaptability, alternatives in production, shift to producing face masks and innovation. The willingness to be innovative and adapt to new situations as an entrepreneur was portrayed as being indispensable factors for sustainable entrepreneurs to compete in the same market with traditional entrepreneurs. The French shoe business founder and the Dutch sports clothing company mentioned that the key for resilience is to try to clarify and discuss as many possible options in advance, to have Plan A, B and C, if needed. *“I also believe that action needs to be dynamic, ever evolving and based on consultation with people interacting within the chain”*, explained the manager of the Canadian company.

*“It is crucial to be flexible and adapt to new situations, sometimes you are lucky, sometimes you are strategic”*, emphasized the manager of the American clothing brand. In any way, thinking ahead and being able to adapt is necessary to establish a resilient SSCM. Moreover, it includes to always be open-minded and improve, wherever possible to become more sustainable. The backpack producer from Germany added that: *“The more rigid a system is, the more difficult it is to deal with external factors. And I think you need some flexibility to adapt business models to the 21<sup>st</sup> century.”*

All of the German entrepreneurs shifted their production to manufacture filtering face masks during the COVID-19 pandemic. The operator of the German family business stated: *“We were lucky that in the end so many people were interested, but we didn’t know that and*



*we still took that risk because we saw an opportunity.” The German backpack producer underlined as well: “within 48 hours we could establish a new supply chain to produce face masks, which was only possible due to our good connections with our partners.”*

### **Strong partnerships**

Supporting and understanding the suppliers is even more needed in times of crisis. It means closely aligning with the own organization and the internal stakeholders, to encourage, listen, support and motivate each other which can even strengthen the relationships among the whole SSCM. *“It is rather a question of loyalty and if trust means something to you, therefore we won’t give up when bad times are coming, we are all in the same boot”,* underlined the German shoe producer.

A SSCM includes to care about making good and sustainable choices and team up with transparent manufacturers who guarantee a safe and healthy environment for the team, and truly protects their rights, values and environment. The sustainable manager of a German brand ensured: *“It is easy to paint a doomsday scenario and, consequently, shut down and cancel all commitments, we as a company have made. That would be the usual way of business and that is what we learned is happening right now, with first manufacturers announcing that they have to shut down for the next weeks as a consequence. We care and will work together.”*

According to the interviewees, the key is a great relationship with all suppliers and equal treatment. For a very long time in the fashion industry, there used to be a hierarchy. On top there was the designer and the brand, followed by the suppliers and workers who produced the clothes, which is not the case in a SSCM approach. There is no product if not everyone is on the same page. *“People producing our shoes should live from it and now it is time to take responsibility and show that you care. We realized more than ever that in an extremely competitive market the only true way to make a difference and somehow “survive” is staying loyal to the values of the brand, where sustainable engagement is key”,* explained the German clothing founder.

### **More conscious consumer**

All interviewed sustainable entrepreneurs consented that their customer is a more conscious one and defined that this type of consumer prioritizes a good quality product. Therefore, it is interesting to experience, according to the interviewees, that conscientious customers are beneficial in times of crisis, since they are being open to a shared value type

approach and support currently businesses by consuming their products. The interviewees experience that their consumers pay attention to information/transparency in regard to the product and demand sustainable/green products.

*“Keeping consumers up-to-date and create human relationships, since they are going through a crisis as well, is part of a good SSCM approach”*, underlined the French founder. Clear communication, showing that the entrepreneurs care, showing that they are a human company is elementary for the interviewees. Moreover, they experience sympathy from their consumers, who were also willing to wait for their orders.

### **Transparency**

Transparency is significant in a SSCM approach. The more information a company has about its factory/suppliers the better is the understanding of the big picture of the whole sustainable supply chain management. The interviewees look at the sourcing differently. It is about finding the right supplier to build a partnership and about purchasing goods and services, considering the people, the planet, and profits. Moreover, it is about how the products are made, where they are made and by whom. It is about transportation choices and about being fair, transparent, and open to all partners, which is what should count in a SSCM approach.

According to the Turkish sustainable brand founder: *“Businesses should be aware of the social and environmental impact of their supply chain process and that they must have strong accountability mechanisms. For many fast fashion brands, they do not know and explain what their suppliers should do in detail. They make a contract with the intermediary agents and they do not feel themselves responsible for the wellbeing of workers who made their raw materials, fabrics, or end products. In the contrary, sustainable supply chain approach depends on accountable and responsible sourcing.”* The production manager of the Canadian business emphasized that it is important to: *“continue to invest in this area of your business and open up your circles to learn from people who are NOT utilizing sustainable practices and SSCM, so you are not in your own eco bubble to be able to realize the impact that more sustainable practices have on your business and the planet.”*

For businesses with a SSCM approach it is essential to conduct verification audits regardless of the location where they are producing, to ensure transparency. Even though two interviewees produce not in Europe but in Bali and Vietnam, they stress that they are proud to support local artisans and encourage them to enhance their local textile tradition. Moreover,

even though they do not produce in Europe, they monitor everything to highly ensure good working conditions for the workers and visit the factories as often as they can.

### **Strategic learnings**

Absorbing new trends, trying to acquire as much knowledge and know-how as possible is necessary for applying a SSCM to survive in the competitive market. Sustainable entrepreneurs agree that learning from mistakes and improving is fundamental for a SSCM approach. Hence, in those times of crisis it is crucial to slow down and rethink the vision and mission and how to improve the SSCM approach. *“My advice is taking advantage of this existential and profound moment to develop their businesses by going beyond the product and focusing on the values and storytelling of the brand, where sustainable practices and SSCM have to take an essential role”*, explained the German sustainability manager.

Local production in the future will increase and is seen as a strategic learning since consumers will seek for local options. The French shoe brand founder explained that: *“exploitation can also happen in Europe, therefore visiting the factories and ensuring the standards, adapting a SSCM approach is essential.”*

### **Challenges**

Problems and issues have already existed in the textile industry before COVID-19, which can now help entrepreneurs with a SSCM approach to stand out. *“Covid-19 has highlighted the issues that already existed around working conditions and how the front facing brands do not care about who is making their materials, clothes, etc. Since the industry runs on such long lead times, I have just learned that there are a lot of challenges with people cancelling their orders”*, stated the Dutch founder of high-quality bags.

Regardless of the SC approach, all entrepreneurs faced shortages and delays due to closed factories and retail stores. Once COVID-19 arrived in Europe, it reached all entrepreneurs and they were affected because they had to close their studios/shops. Due to COVID-19, none of the entrepreneurs could at the time of the study, travel and visit their factories. A SSCM approach often requires frequent visits, transparency and closer relations, which is hardly feasible due to the crisis.

Entrepreneurs applying a SSCM approach have already higher costs compared to conventional entrepreneurs, thus higher costs in the future will have a big impact on their businesses. Due to a drastic increase in the exchange rate, the cost of the materials are increasing

day by day, which is a serious challenge for the entrepreneurs. *“Normally businesses pay 30% upfront and 70% when the item got delivered. Since there are a lot of brands who have not paid their orders now, there will be 50-50 payment in the future, otherwise it is a too high risk for the factories to start producing without having the money yet. This will have a huge impact on us since the business is based on cash flow”*, was pointed out by the Dutch and French entrepreneurs. The real revenue losses will probably be noticeable in the first quarter of next year, highlighted the majority of the interviewed entrepreneurs, *“and by then the further development of this crisis is visible”*.

The crisis is good for SSCM or broader sustainable businesses, though behaviors are hard to change, therefore the fashion industry will not change immediately. None of the entrepreneurs believe that everyone will apply a SSCM approach after the crisis, even though companies reassessed where they can be more moveable and agile. *“I have heard a lot of companies saying that they will be more sustainable once the crisis will be over, but human behaviors are difficult to change. There will be changes but I am skeptical if the majority will change”*, mentioned the Dutch sustainable founder.

Change and a SSCM approach is needed due to the experienced fear, and the vulnerability of the planet. The fashion brand founder based in London highlighted: *“Sustainable thinking was already essential and absolutely necessary in the education of the next generations from the very beginning. But practicing it, was another thing ... Living with fear, realizing how fragile we and the world can be, has helped us realize that we needed to take a big step forward, and that no separation can be made between personal and professional sustainable acting.”* The founder of a sustainable label in Turkey emphasized that: *“this is a thing that will shape our mindset and the way we continue. People will learn from the pandemic, but we do not know how long it will last. It will have an impact on the mindset, but the question will be for how long.”*

Patterns emerging in the theory section include that conscious clients support businesses in times of crisis, the interest on local manufacturing, the vulnerability of the planet and furthermore of SCM approaches, hence resilient SSCM is needed to overcome crises. Moreover, SSCM requires strong partnerships built on trust, control and transparency, however all entrepreneurs experience challenges in those times of crisis.

## DISCUSSION

This research aims to generate knowledge on how COVID-19 interacts with sustainable supply chain management activities. The theory section shows clearly that businesses require agile and resilient SSCM to prevent economic loss and overcome crises. The emerged patterns in the theory section can be allocated to the research questions:

*Sub-question 1: “What are the benefits of SSCM for dealing with COVID-19?”*

- A resilient supply chain management created through thinking ahead, being innovative and adapting to new situations
- Strong partnerships built on trust and commitment
- Transparency within the SSCM approach by monitoring and tackling issues to improve and strengthen the SC
- Local manufacturing leads to more transparency, since the supply paths are shorter
- Adequate usage of available resources and inclusion of social needs

*Sub-question 2: “What are the benefits of COVID-19 for SSCM?”*

- More conscious clients support businesses with SSCM
- Limited resources, therefore, a SSCM approach needs to be the new standard in the future
- Shift to a more local manufacturing/production, which business with SSCM approach have already adapted to
- Spreading awareness among the society that the planet is vulnerable, and change is needed

*Sub-question 3: “What are the challenges sustainable entrepreneurs of start-ups and SME experience in these times?”*

- Not able to visit factories
- Customer behavior is hard to change in the long run
- Higher costs compared to conventional methods, maybe the costs will even rise in the future (materials, prepayments, etc.)
- Traditional and sustainable businesses, however, face revenue loss, restrictions, delays

The results indicate that a SSCM approach puts businesses in a better position in times of crisis as it usually involves closer working partnerships and adaptability for new situations. Businesses worldwide experience disruptions in the production and the transportation due to COVID-19. The major problem however is that a high number of traditional entrepreneurs receive little to no information from their direct partners in China and due to the situation, no visits or personal meetings can take place (Boyd, 2020). To ensure that workers work under good working conditions, either controls must be undertaken or developed trust must be established, which seems to be less the case for traditional entrepreneurs (ibid.).

A SSCM approach based on adapting to new situations, being flexible and working together, facilitates for sustainable entrepreneurs the burden of COVID-19 through a faster adaptation in case of disruptions. OECD Secretary-General Ángel Gurría mentioned that supply chain disruptions and unforeseen risks can return at any time due to trade tensions or environmental challenges, thus supply chain management must shift to a more sustainable form, which means that it is crucial to create resilient and agile supply chains (Roberts 2020). All interviewed sustainable entrepreneurs consented with the statement of the OECD Secretary-General, however, the data suggests that only if the entrepreneur is willing to implement real sustainable values in their business approach, a sustainable supply chain management approach is achievable.

The study demonstrates a correlation between COVID-19 issues and SSCM approaches, which goes even a step further and raises the question if the future of manufacturing lies in globalization/offshoring or in local production? From the interviews it can be seen that “*Made in Europe*” is neither a proof for sustainability, nor a guarantee for good working conditions. In some places in Italy and in Portugal the working conditions are similar to the ones in China. Therefore, local production can solely ensure sustainability through transparency, which only works through the mechanism of trust and control. All entrepreneurs highlight how they value loyalty and trust, however, confirm that monitoring is necessary to ensure sustainability regardless the production location.

The analysis confirms that the consumer plays a key role as well and that the crisis could lead to an increase in conscientious consumerism. The interviewees agreed that as soon as less money is available, impulse buying decreases. People’s buying behavior shifts then to purchases of goods they really need, they think twice and prefer good quality products which

last longer. This attitude might lead in the future to customers who inform themselves more about brands, choose sustainable products and reduce unnecessary purchases in general.

Since COVID-19 has negative effects, such as revenue loss, restrictions or delays, on all supply chains, businesses having a SSCM approach experience no more harm than businesses without one. An adverse effect for SSCM is that no factories can be visited due to COVID-19, which however is essential to ensure sustainability and good relationships. Moreover, a shift to a more conscious consumerism seems to be an advantage for SSCM, however customer behavior is hard to change in the long run. Companies' decision making depends heavily on customer purchase behavior or a shift of the whole market in a certain direction. So, a lot of companies could adapt, but currently big brands are not moving towards a more sustainable production method. This proves again that changing the market and the perception of people is quite difficult and that it will take time to achieve this change in a sustainable and long-lasting way.

Contrary to the hypothesized assumption, the factor of governmental financial aid and the responsibility of governments in regard of entrepreneurs arose in the data. The data contributed a clearer understanding that the external factor of the government plays a significant role for some interviewees, who highly depend on the political direction of the country. Since in this research entrepreneurs from several countries were interviewed, further analysis on the influence of the government would be highly interesting, however this would go beyond the scope of this paper. Nevertheless, the role of the government should be taken into account, whenever an impact on sustainable entrepreneurs is possible.

### **Theoretical contribution**

This research contributes to existing theory by putting the focus on SME in regard of SSCM, a topic which remains most of the time neglected by academia (Archer et al., 2006). Even though researcher did academic work on that topic, the majority focusses on large-scale businesses, whose frameworks are not suitable for SME (ibid). Moreover, 99% of the businesses in the EU are SME, which should be an additional incentive to focus more on SME in the academic field (European Commission, 2003).

In addition, this thesis adds valuable insights into the correlation of SSCM and disruptions/crises. In this research it was demonstrated that businesses with a SSCM approach

not only overcome crises more easily, they can even benefit from disruptions. This finding needs greater attention in the academic field and could be the starting point of further studies.

Due to COVID-19 and the limited time and resources provided for this research, the theoretical implications need to be further researched and confirmed in order to generalize the results for all (sustainable) SME and start-ups.

### **Practical contribution**

The research also seeks to provide valuable knowledge for practical contribution. Throughout the results and discussion section, it becomes clear, that the values and criteria of sustainable supply chain management holds advantages to overcome crises more easily. Accordingly, this research contributes as a support and guidance for entrepreneurs founding a start-up or for entrepreneurs of traditional start-ups or SME who want to switch to a SSCM approach.

Since the research was conducted in cooperation with start-ups and SME, the company size plays a decisive role and should therefore be also taken into consideration when applying practices in real life. This does not mean that the findings could not be implemented in big businesses, however, they were not examined in the research and the results may differ (as seen in the theory section).

Six key findings from this research stood out:

- sustainable supply chain managements are advantages to overcome crises more easily
- sustainable supply chain managements may even benefit from a crisis
- communication and thinking ahead is crucial in supply chain managements
- the importance of working together rather than building a hierarchy
- all different parties are needed and equally important for being able to create a product
- transparency and monitoring is necessary to ensure sustainability
- in times of crisis, all entrepreneurs face challenges

This research can be seen as an instruction paper:

- directed to all start-up and SME entrepreneurs, regardless of the sector/field
- to improve traditional start-ups or SME to create and establish more resilient, agile and sustainable supply chains
- for start-ups to build up their supply chain on key factors of SSCM



## LIMITATIONS & FURTHER RESEARCH

Although this research considers the points of view of multiple different entrepreneurs, ranging from founders to sustainability managers, only one specific type, namely sustainable entrepreneur, participated. Due to the time and resource constraints of this research, the scope was purposefully narrowed to sustainable start-ups and SME in order to achieve reliable results for this focus group.

However, a significant limitation is the fact that the information of the conducted interviews was coded by only one researcher, which might lead to the impression that personal judgements, sentiments or perspectives affected the results. Nevertheless, as long as saturation was achieved and high-quality data was used, Reay (2014) concludes that ideas and personal judgements do not have an impact on the results.

Furthermore, when conducting the analysis of the data, two different concepts appeared, which were not considered beforehand: circularity and the governmental role in times of crisis. Since circularity was only mentioned by two interviewees, it was not included in the categories of advantages to overcome periods of disruptions. However, it still outlines an interesting topic, which should get closer examination. Nevertheless, circularity is a complex topic as well and to include it only partially in this research paper would not do it justice and should be therefore given time and resources in future research.

The new insights of this study contribute to existing literature and can be seen as a starting point for promising and potential areas for future research on this topic. For future studies, it would be interesting and significant to expand the focus group and conduct a study with a larger sample of sustainable start-ups, small and medium-sized businesses to gain better knowledge and achieve more precise results and to evaluate if the findings are consistent with a larger number of participants.

Future research could also collect data from traditional and sustainable entrepreneurs in order to compare supply chain management with sustainable supply chain management, since in this research, the point of view stems entirely from sustainable entrepreneurs.

As it became apparent in this research, applying a sustainable supply chain management constitutes an advantage and helps to overcome or prevent disruptions more easily. However, external factors often play a crucial role, such as the governmental parameter including the

intervention or nonintervention of the government. Consequently, further investigation could be done on the role of the government with supply chain management in times of crisis.

Ideally, a research on a larger scope could consider interviewing and comparing a larger sample of different sized sustainable and traditional entrepreneurs and governmental experts, which would be beneficial to generate an even broader perspective and detect even more unidentified patterns.

## CONCLUSION

This qualitative research in the form of a case study aimed at showing how sustainable supply chain management can be advantageous when disruptions arise and even benefit from them. After existing literature was reviewed, outcomes that supply chain management must be redesigned in a more sustainable way, were expected. Nevertheless, the variety of the interviewed sustainability entrepreneurs contributed with insightful knowledge to the existing theories. With the findings provided, this research had the goal to uncover the advantages sustainable entrepreneurs experience with their established SSCM approach, to help other traditional entrepreneurs or start-ups to make the first step towards a more sustainable supply chain management. Moreover, this research could also be seen as an instruction paper for entrepreneurs in the interest in conquering disruptions more effectively in the future.

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**APPENDIX**

**Appendix A: Interview Guide**

Interviewer(s): &

Interviewee(s):.....

Organization interviewee(s).....

E-mail address Interviewee(s):.....

Supervisor: Thomas Long

Date interview:..... Recorded: Yes/No

Attachment(s):.....

**Questions:**

**THEME: INTRODUCTION**

Q1: Can you introduce yourself and your role in the business?

Q2: What is the meaning of sustainable supply chain management for you (and your colleagues)?

Q3: What are the most important factors for achieving sustainability in the supply chain?

**THEME: CURRENT STATE**

Q4: What has changed since COVID-19 in your opinion in sustainable supply chain management?

- What has changed so far in **your sustainable supply chain management** since COVID-19?

Q5: Due to COVID-19, did/do you think of changing your sustainable supply chain management? If yes, in which ways?

Q6: Can you describe the main challenges you face concerning COVID-19 in your sustainable supply chain management?

- How do you (already) try to overcome these challenges?

Q7: Do you think that COVID-19 could be also seen as an opportunity for businesses? If yes, in which ways?

THEME: FUTURE STATE

Q8: Do you believe **sustainable** supply chain management will become more important due to COVID-19 in the future? Why or why not?

Q9: What do you expect is the negative impact for your sustainable supply chain management of COVID-19 in the future (next 5-10 years)?

Q10: How do you expect the sustainable entrepreneurs and sustainable supply chain management would benefit from the impact of COVID-19 in the future?

Q11: Do you have any tips for (sustainable) entrepreneurs, what they should learn from COVID-19?

Q12: (Lastly), is there anything you think I should have asked, that I haven't?

End questionnaire.



**Appendix B: Disclosure Form****Your Consent and Understanding to Participate in a Case Study on Challenges and Opportunities of COVID-19 for sustainable supply chain management**

Dear Entrepreneur:

You are invited to take part in an interview as part of a thesis project (Sustainable Entrepreneurship Project), delivered within the master programme Sustainable Entrepreneurship at Campus Fryslân, University of Groningen.

The interview has two purposes. The first is to conduct a research aiming at identifying challenges and opportunities of COVID-19 for sustainable supply chain management. The second purpose is to identify the impact COVID-19 has on the sustainable supply chain management currently and for the future.

By consenting to this interview, you acknowledge and agree to the following:

1. You confirm and understand what the research is about and that you will have the opportunity to ask questions.
2. You understand that your participation is voluntary and that you can withdraw at any time without giving reason.
3. For the purpose of conducting research, the interview will be recorded, transcribed and analyzed. Recording and transcription will not be used for any other purpose besides conducting the research. The recording will be immediately deleted after transcribing the text.
4. The data obtained from this interview will be handled confidentially by the researcher (Isabel Sophie Knittelfelder) and her supervisors.
5. The goal of this interview is to collect qualitative data for the research Challenges and Opportunities of COVID-19 for sustainable supply chain management.
6. The names of participants will not be published. The participants will be identified with their function. Full anonymity can be requested by the participant. This interview is supported by the student's professor.

Please note that the finalized anonymized research reports will be made available for further study on the University of Groningen's research database.

Interviewee Name + Function:

Business name:

Date:

Signature:

Researcher Name: Isabel Sophie Knittelfelder

Date:

Signature:

## Appendix C: Categories + Codes

The codes established through the process divided into 6 categories are:

- Category 1 – Resilience:  
flexibility, alternatives in production, more robust supply chains, shift to producing face masks, think ahead, deal with unforeseen circumstances, innovation, dynamic/adaptability
- Category 2 – Strategic learnings:  
slow-down, re-regulate, learning from made mistakes, necessary standards, increase of local production, better understanding of the product, more online due to closed retail stores, traditional businesses less overview of SCM, less selling for traditional brands due to overstocks, more digital
- Category 3 – Stronger partnerships:  
loyalty, responsibility, commitment, communication, close contact, equity along the supply chain
- Category 4 – More conscious consumer:  
more information/education for consumers, useful and good quality product, customers appreciation, consumer demand for green products, consumer demand for transparency
- Category 5 – Transparency:  
accountability, local manufacturing, traceability, monitoring
- Category 6 – Challenges:  
fear of opening a business, lack of raw materials, cancellation of orders, delays, uncertainties, closed retail stores, restrictions, one-sided dependency, revenue loss, not enough (financial) governmental help, higher costs, slightly changes in the right direction, change of thinking/acting, hard to change long-term behavior, a better normal