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Healing or Harmful?

*A case study of healing crystals supply chain and how transparency can work as
a tool for retailers when developing a sustainability strategy*

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Abstract

The market for healing crystals has exploded in recent years due to increased consumer interest in the ‘healing’ qualities it may offer. The main problems within the healing crystal industry is the unsafe and unethical labor conditions among others, but the most critical part is the lack of transparency within the supply chains which leaves consumers and retailers unknowing of the actual social, environmental and economic impacts of crystals. Studies have shown that more light needs to be shed on the supply chain in order for governments, producers and consumers to gain understanding of the impacts caused. The purpose of this thesis was to analyze how a small-scale retailer of crystals can, with the help of a transparent supply chain, develop a sustainable business approach in order to contribute to a less harmful industry. Thus the research was conducted with a case study with a qualitative approach and analyzed with the theoretical framework consisting of the stakeholder theory, corporate sustainability model, triple bottom line, supply chain management among others. Furthermore, empirical background was summarized with articles of previous research and used to gain deeper understanding for the research area. From the empirical findings conclusions were drawn that there is a need for third-party verifications within the field, extensive monitoring regarding effects related to sustainability and a code of conduct for retailers in order to put more pressure on suppliers. This thesis contributes to how small-scale retailers can work with sustainability throughout the supply chain by creating the right tools to influence the three pillars of sustainability.

Key words: gemstone mining industry, Green Supply Chain Management, Supply Chain Transparency, Supply chain

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Abbreviations

SDG - Sustainable Development Goals

TBL - Triple bottom line

GSCM - Green Supply chain management

SCM - Supply chain management

CSM - Corporate sustainability model

GRI - Global reporting initiative

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1. Introduction

The following introduction section starts with a general background description of the research topic and is followed by a short introduction to the case-company. The chapter is then continued with a problem discussion where relevant literature is reviewed and research gaps identified. Thereafter, the purpose and research question with our selected study is presented, ending with contribution and delimitations.

1.1 Background

A world-wide industry that has exploded in the past recent years are ‘healing’ stones, crystals and colored gemstones (McCracken, 2021). In this report ‘crystals’ will be used as an epithet when speaking of the most popular stones with healing qualities. Crystals consist of natural minerals and have historically been used as jewelry. In addition to being used as jewelry, crystals have also been considered to be a source of magical and healing powers (Britannica, n.d.) and can in present time be seen, worn and marketed by highly influential people, celebrities and yogis (Wiseman, 2019). The associated healing powers which are said to help people reduce illness, get rid of anxiety and find their true love (Wiseman, 2019), has made the market a one billion dollar business (McCracken, 2021). Although the aims with healing crystals are many and often connected with a sustainable and healthy lifestyle, the sustainable impacts from the million dollar industry has remained poorly researched (Atkin, 2018).

Before crystals obtained their healing value and became mainstream, they were ethically mined and on a smaller scale by natives (Sotelo, 2022). Alongside with the expanded demand, questions have risen of the following environmental, social and economic impacts that the industry contributes to. Some general issues that have been brought up regarding crystal mining are the unethical way of mining, the risks that ecosystems are facing and the environmental harms that are caused by an unmonitored supply chain. The industry of healing crystals has been far less researched than the industry of diamonds and while the industry of diamonds has been huge for decades, the market for healing crystals has recently grown larger (Archuleta, 2016). This has resulted in limited information that can be found about the sustainable impacts that are generated from mining, production and transportation. The lack of suppliers’ transparency and ability to trace the origin of crystals has been

criticized as demand for more sustainable practices increases. The problems highlighted within the industry are followed by suggestions or requirements of more governmental control, as in with the diamond industry (Atkin, 2018). But how small scale retailers can act in favor of sustainability is inadequate.

Sweden is one of many countries that has shown increasing interest in healing crystals. The qualities of healing crystals can be seen discussed in Health magazines (Pettersson, 2021), The government's official investigations (SOU 2019:15), and in media forums (Granroth, 2019). As the interest for crystals increases, the question arises how a country that is on the top of the list for Sustainable countries, measured by Environmental, Social and Governance (ESG) (Jonsson, 2020), lacks understanding or reflection of the negative externalities followed by the popular trend of crystals. Healing crystals can be seen marketed towards a consumer group that seems to be environmentally conscious, and keen on living a healthy and clean life in symbiosis with the surrounding environment (Wiseman, 2019). However, how aware the targeted consumer group is of the harming effects of the mass industry is unknown. As small-scale retailers of crystals enter the Swedish market, retailers stand a better chance to survive on the market by, according to Epstein & Buhovac (2014), building trust from stakeholders and creating legitimacy. It is therefore highly prioritized in society to work towards sustainable solutions for a better tomorrow.

1.2 Background: Focal company

The focal company in this study is a Sweden based retailer of healing crystals, that distributes the product through their small-scale shop in the city of Stockholm, but also offers shipping to EU, Norway, England and The United states. The company was founded in 2020 and currently has 9 employees, and focuses on a consumer group that is interested in spirituality and well-being. With a passion for sustainability, the company states that they have a general sustainability thinking that aims to reflect their business and its activities. Their way of acting sustainable focuses mainly on expressing standards or guidelines on working-conditions, transportation and packaging to their suppliers. With no own production, the company collaborates with a few international suppliers that are based in Europe with following collaborations with miners located in Brazil, Peru, Madagascar among others. The main shipments come through these three countries.

As small and medium-sized enterprises (SMEs) currently constitute 99% of European Businesses, which the small-scaled retailer is classified as, a responsibility has followed for their environmental, social and economic impacts (European commission, n.d.) Although guidelines or standards are communicated to suppliers, the focal company faces challenges in being able to fully know of the environmental, social and economic impacts that the supply chain activities contribute to. According to Cartier this is due to the lack of traceability, transparency, and insufficient disclosure regarding the three dimensions of sustainability within the industry (2019). The most common problems that are associated with the mining of crystals are underpaid and sometimes underaged employers, bad working conditions, decrease in biodiversity, and pollution in the local environment (Archuleta, 2016) the focal company is therefore in need of getting more insight in their own supply chain and strives to understand where pressure and more control is needed.

1.3 Problem discussion

In a society where awareness and demand for sustainable and traceable products has increased, the problems with this industry does not only affect the local environment where the crystals are mined. As a retailer of this product, companies face the challenge of being portrayed as unethical and carefree of their work with sustainability if the information about lack of transparency reaches the customer. Previous research shows what governments need to do in order to change the industry and how manufacturers can change their work in order to be more sustainable (Cartier, 2010). If retailers lack insight in the supply chain of healing crystals, they might continue business as usual. This means that the criminal and unethical activity in the industry can proceed since demand generates supply. By doing nothing, retailers stand the risk of both losing customers because of the lack of transparency and doing even more harm to the planet and people. A damage that would be the direct opposite from what is trying to be achieved through the UN's Sustainable Development Goals (SDGs).

The regulatory framework within the industry is limited. There are no international regulations and the ones that exist nationwide are lacking in many aspects (Archuleta, 2016). Even countries with existing regulations are often corrupt, and respect for the system is limited. The developing countries, i.e. countries that has a low Gross Domestic Product

(GDP), that most of the mines with crystals are located in (Archuleta, 2016) have governments that are not able to monitor the mining activity and cannot make sure that the work is done according to the regulatory framework. Thus, because the majority of the activity is done through artisanal and small-scale mining (ASM). The problem of which regulations should be developed and how this best could be monitored remains. Besides more strict regulations, synthetic crystals have appeared on the market in recent years as a “more sustainable option”. Pandora, one of the world’s largest jewelry companies, made a shift in 2021 saying that they would only sell diamonds made in laboratories with the argument that they want to become a carbon neutral business and act more sustainable (McClure, 2021). The synthetic crystals are an alternative to consumers wanting more sustainable options, since they are grown in a lab instead of mined from nature. Even so, there are still two reasons why this option might not be possible for retailers. First, the lab-grown crystals increase job opportunities in developing countries, many of which depend on the mining industry (McClure, 2021). Second, the lab grown crystals do not possess the “healing energies” since they are not a natural resource (gemrock international, 2022). The healing powers of the crystals are the main reasons why retailers sell these types of stones, which means a great customer dissatisfaction if they find out that the crystals are lacking their healing energies.

As of today, governments, miners and retailers try to solve the issues when they have already happened instead of being proactive. When it comes to sustainability in corporations in general, research has shown that the most efficient and less costly way of approaching this type of questions is by working proactively (Porter & Van Der Linde, 1995). By increasing the transparency in the industry, retailers stand a better chance to develop a strong sustainable strategy, survive on the market and put pressure on the suppliers so that every step of the supply chain works towards the Sustainable Development Goals (SDGs). The SDGs could work as a tool for corporations in order to better understand their businesses' effects on the environment and people and how it could be solved in the most efficient way (UN, n.d, b). By working proactively, the retailers stand a chance to change the industry before the information about the effects of it reaches out to the end-consumer. Examples of improvements include further regulations, engagement from corporations and suppliers, monitoring of the activity, and better working conditions for miners (Cartier, 2010; Wiebusch Sindelar et al., 2020). A sustainable strategy has to be developed in order for the retailers and suppliers to meet the SDGs and to provide more traceability and transparency towards

consumers of the product. By gaining more knowledge in every aspect, from the working conditions of the miners to the transportation of the crystals, the retailers will be best suited to develop a strategy that is sustainable.

1.3 Purpose of study

The purpose of this research is to fill the knowledge gap of how small-scaled retailers can work in order to make the industry of healing crystals more transparent and sustainable. It also aims to deepen the knowledge of how a sustainability strategy can work as a tool for retailers and help them meet consumer demand through transparency, but furthermore monitor their own environment, social and economic impact along the supply chain.

1.4 Research questions and contribution to the field

Considering the research gap shown in previous studies, this paper aims to contribute to the field of healing crystal supply chain, by following research question:

How can Swedish small-scale retailers, with the help of supply chain transparency, develop a sustainable strategy that has an impact throughout the supply chain?

1.5 Contributions

This paper intends to contribute to existing literature and previous research with more insight of the supply chain of healing crystals, and furthermore give more understanding for how small-scaled retailers can act in forms of creating a sustainability strategy within this industry.

1.6 Delimitations

In this thesis the focus lies in getting as much detail about the different parts of a healing crystals supply chain as possible. Therefore, due to the complexity of supply chains and time frame this study will focus on one chosen retailers general supply chain. To make this study applicable to other retailers, interviews with suppliers operating with gemstones mining in

different countries, aims to provide support of how small-scaled retailers can work with sustainability. Notice has been taken of the fact that the information gained will depend on what the company decides to disclose.

2. Theoretical framework

The theoretical framework presents the concepts and models that will be used when analyzing the case study. The following sections will present a short introduction to the chosen theoretical framework starting from general theories and ending with specific theories connected with the supply chain of crystals.

2.1 Stakeholder theory

Stakeholder theory was first mentioned in 1984, by R. Edward Freeman. Freeman suggested that not only shareholders are affected by the business, but stakeholders as well, and is a tool to gain assurance that everyone affected or affecting the business are taken into consideration. The traditional view has been that businesses have a profit maximizing view in order to satisfy shareholders. Stakeholder theory explained by Freeman et al. (2010) suggests otherwise, and presses the fact that a company's management shall in fact take into consideration that those that are directly or indirectly affected by the business, or are influencing or influenced by the business, shall be viewed as stakeholders of the company. Examples of stakeholders are the government, customers, suppliers, shareholders, employees, NGO:s, etc.

Using a stakeholder theory approach gives the opportunity to analyze different groups of stakeholders, and have a common approach in creating policies, and a strategic approach for sustainable development. In this way companies can work together with the government in order to comply with laws and have a proactive approach, but also with citizens or other parties to create value for everyone. The aim of stakeholder theory is to give corporations the tools to solve difficulties in corporate management as in public institutions, while at the same time benefiting and creating shared value amongst the stakeholders and shareholders. (Stakeholder theory, n.d.).

2.2 The Corporate Sustainability Model

The corporate sustainability model explains how a company can gain understanding of the different activities performed, their environmental, economic and social impacts, and how they can together with different strategic approaches create value within a company (Epstein & Buhovac, 2014). The model builds on four different components: inputs, processes, outputs and outcomes, which lays a foundation for better understanding the complex relations between impacts and activities.

Inputs are the drivers behind a change in sustainability that a corporation makes. Inputs could arise externally from governments making new regulations within the industry or NGOs putting pressure on corporation's work with sustainability. Inputs could also include the company's vision and mission and how they want to be seen by the consumer, specific consumer demand or the industry that the company operates within. As an example, different sustainability issues relate to different industries. The use of natural resources and how corporations use nonrenewable resources can relate to different types of mining (Epstein & Buhovac, 2014).

Once the inputs have been identified, the corporation needs to decide which **processes** they want to use in order for their sustainability strategy to improve. Different processes result in different outputs, it is therefore of key to weigh the different processes and analyze which of the processes that will generate the best result, i.e. the most successful sustainable business approach. As stated by Epstein and Buhovac (2014) the most successful sustainability strategies are the ones with top-management highly involved and strategies that go top-down, meaning that they are created and implemented on board and CEO level first and then applied to the rest of the business. Processes include a strong leadership, both a sustainability strategy and structure and finally programmes, systems, and actions (Epstein & Buhovac, 2014). The difference between a sustainability strategy and structure is that a strategy is a way of approaching problems that occur within the area and a sustainability structure means that sustainability is at the core of the company. Finally, in order to improve within sustainability some type of program or framework is necessary in order to measure the different outcomes. A system that is able to measure improvements and tell where they arise from makes it easier for the company to reward the individuals or teams that have made an effort towards a more

sustainable operation, a step that is also of value in the work with sustainability (Epstein & Buhovac, 2014).

Outputs include business performance and stakeholders reactions to the corporation's work. The sustainability performance shows how the work has paid off and indicates if the sustainability strategy needs some improvements and implies what they might be. Stakeholders' reactions to the work of the corporation is also of key since the corporation will not be able to proceed business as usual if all stakeholders are unsatisfied. Stakeholders play an important part of the corporations and their thoughts about the company shows off in both short- and long-term performance. In order to succeed with a sustainable strategy, all stakeholders need to be taken into account and their needs have to be met.

Finally, if the stakeholders are satisfied and the sustainability performance has improved, the strategy is most likely to have generated a positive financial **result** for the company and a long, meaningful relationship with its stakeholders. The long-term corporate financial result is an indicator that a sustainability strategy is not just necessary for the sustainable aspects but also for the company's financial result. This model aims to create a shared meaning for corporations and sustainability aspects and by following these steps correctly, decoupling will be achieved. Decoupling is when economic growth and environmental harm goes in the opposite direction, i.e. economic growth increases but the pressure on the environment decreases.

The model intends to give a more clear picture of how the components can act as drivers, actions and consequences (see fig 1.) and how sustainability strategies can increase performance at the same time as decreasing negative impacts (Epstein & Buhovac, 2014).

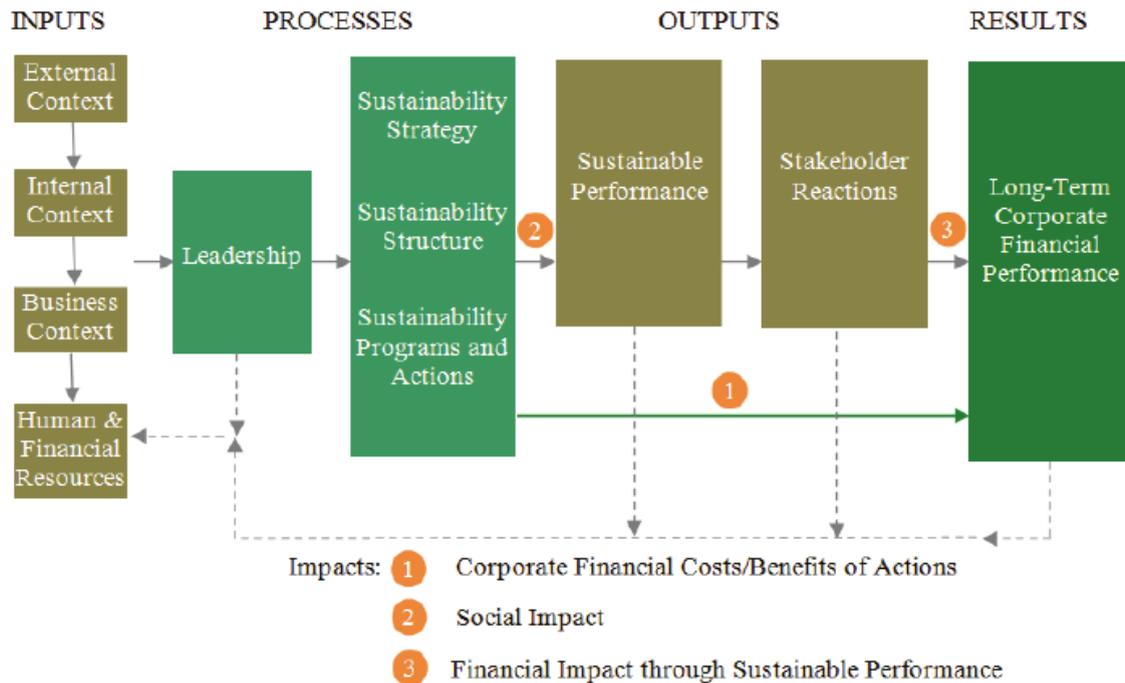


Figure no. 1: Corporate Sustainability Model Source: Epstein, Buhovac and Yuthas, 2010, p. 42

2.3 Triple bottom line

With increasing environmental, social and economic challenges, businesses operate in environments facing unstable situations and have a responsibility to contribute to long lasting change according to the UN (UN, n.d. a). For this to happen, sustainable corporate strategies are needed to influence the three pillars of sustainability while at the same time having the possibility to make profit and please shareholders. According to Elkington financial performance should therefore be complemented with reporting on social and environmental aspects to get a comprehensive picture of the company's impact on the three P:s people, planet and profit, referred to as the triple bottom line (TBL) (1997). The framework proposes companies to turn away from the main focus from financial aspects and instead regard a business environmental, social and economic performance equally important (Miller, 2020). The TBL within corporations and sustainability practices is a common concept used to interpret the efforts made (Miller, 2020).

People refers to a company's stakeholders that can be influenced or are influencing the company throughout the supply chain. How a business takes regards to the people can be seen through measurement systems of social impacts created by the business. **The Planet**

includes the impacts a business has on the environment, and can be measured by the rate of depletion of natural resources, carbon footprint, amount of emissions or waste pollution. **Profit** is measured by looking at the impacts that a company has on not only the international economy but also on the local and national economies. Which also includes generating employee opportunities, innovation, taxes, and creating wealth (Forbes, 2019).

2.4 Sustainable Development Goals

The SDGs were established in 2015 by the UN with the aim that together with 193 countries work for a sustainable future and decrease negative impacts on social, economic and environmental aspects by 2030 (UN, n.d. a). The 17 SDGs created by the UN had as objective to get people, corporations and governments to adapt their way of working and living more in line with sustainable habits and methods. The UN states how all companies no matter size, or market that they act in, can play a part in the contribution to the SDGs (UN, n.d. b).



Figure 2. The sustainable development goals. (UN., n.d.)

2.4.1 SDGs and corporations

With the help of SDGs, corporations can get insight into which SDGs are most relevant or applicable for their business activities, and can guide the sustainability work. The SDGs can serve as a basis in how business strategies and models can be transformed and advanced with the goal to act responsible and work with sustainability. Corporations that integrate the SDGs

within the sustainability work can benefit from lessening the negative impacts and at the same time find competitive advantages and profit-increasing solutions (UN, n.d. b). The European commission (n.d.) also states that SMEs have an obligation to contribute and work towards a sustainable future , therefore the SDGs can work as a tool when creating a sustainability strategy or in overall conduct a more sustainable business.

2.5 Sustainability and transparency within the supply chain

A supply chain is the whole chain of activities that is required to manufacture and deliver a product or service, with a starting point in the extraction of raw materials necessary to the final destination. The supply chain shows all stages of a product's manufacturing process and the related activities that occur at each stage of the process (CFI, n.d).

Supply chain management (SCM) is an important step in order to create benefits and efficiency that have a positive effect on customers and the company. SCM is about handling all steps of a products life cycle, from cradle to grave, which involves raw material extraction, production, distribution, and disposal. When SCM is integrated with the triple bottom line, sustainability becomes an important aspect throughout the supply chain in order to have a green supply chain management (GSCM) (Muduli et al., 2013).

GSCM can be seen as a corporate strategy to stay ahead of threats, trends or changes, and is an efficient strategy in many sectors, as well as in the mining sector. As the triple bottom line concept integrates with SCM, GSCM helps companies to make it easier to monitor and measure the environmental impacts that can be drawn from business activities throughout the supply chain. It can also work as a tool for maintaining the minimal legal requirements and regulatory standards for pollution levels. Other than having a positive effect on companies environmental and financial performance, GSCM can reduce risks of environmental harms by encouraging innovation (Muduli et al., 2013).

Transparency within companies is defined by Epstein and Buhovac (p. 23, 2014) as the revealing of all relevant facts to current and potential stakeholders by openly and upright communication related to the past, present and future financial performance of the company. It is related to a business or organization's ability to see internally that they are practicing due

diligence and can showcase this externally to stakeholders. By doing so corporations can gain a competitive advantage in forms of building relations based on trust which in turn can result in a positive perception and marketing advantages. As implied, transparency can work as a corporate tool and be essential when forming corporate strategies (Egels-Zandén, et al, 2015).

2.6 The industry of diamonds, a similar business field

The neighboring business-field of diamonds and its cause and effects when it comes to sustainability has been further examined. Given solutions for maintaining a sustainable approach within that field includes the statement that in order for companies to develop a strategic approach and a sustainability model for their business, transparency and knowledge is of key (Shanker & Barve, 2020). The industry of diamonds is similar to the one of crystals since they both include extraction of a natural resource through mining. The industry of diamonds is though often large-scale which means that it is run by bigger companies and uses mechanics to extract the minerals. 10 percent of the diamond industry is done through small-scale and artisanal mining, which is different from the crystal industry since the majority of that industry is done through artisanal and small-scale mining (Graff, 2016). Large scale mining is more easy to locate and monitor and therefore the problems of the diamond industry are more transparent (Archuleta, 2016). It has been questioned in the media whether or not crystals are the new “blood diamonds” (Wiseman, 2019). The concept of “blood diamonds” refers to the conflict extraction of diamonds has brought up including corruption, criminal activity and smuggling. The movie “Blood diamonds” that came out in 2006 contributed knowledge to the general public, regarding the corruption of the diamond industry. As of today, the phenomenon with healing crystals is relatively new and the industry has not yet gotten the same attention by the general public as the diamond industry, even though the industries are alike in many aspects.

2.7 Synthetic crystals

As mentioned in the problem discussion, the international jewelry company Pandora stated in 2021 that they would switch to gemstones entirely developed in laboratories. This for the sake of the environment and unfair working conditions in the industry of gemstones

(McClure, 2021). This is just one example of a step away from minerals extracted from the earth as other companies previously have done the same (McClure, 2021). The debate about how synthetic crystals could be a better alternative to mined crystals, which are a natural resource, arised given the problems within the industry. What is said so far is that even though the extraction from earth is avoided by using synthetic crystals, it decreases the working opportunities for miners which makes the problem complex. This means that switching to lab-grown crystals and diamonds may take care of the environmental aspect of sustainability but the social aspect remains, or might even be worse. It is also of importance to mention that for retailers that sell the crystals for healing purposes and because of the energies it provides to the customer, synthetic crystals might not be an option since these types of crystals lack that ability (Alnuweiri, 2018).

3. Methodology

The next chapter, methodology, starts off by introducing the research approach and the chosen methods that will be used. A brief description of what and how data will be collected is presented, as well as a short explanation of the selected company that will be studied. Ending with methods used to increase the quality of research, and delimitations that will be made in future work.

3.1 Research design

According to Patel and Davidson (2019) research problems can be based on scientific or practical grounds, meaning that the objective is either to be able to apply the findings in practice or to extend knowledge in chosen subjects. This study was conducted to increase knowledge of how small-scale retailers can work with sustainability in their supply chain with a strategic approach, and to apply the findings in practice. Therefore this thesis was based on a deductive method and a qualitative approach, which means that conclusions of empirical findings were drawn from previous studies and research, and interviews with the case study together with literature sources were used to examine the research question (Patel & Davidson, 2019). In order to expand our understanding within the field and get a comprehensive description of the supply chain and its impacts, the interviews with the focal company and its supplier were complemented with an external actor. Thus, to fill out potential gaps in accessible data or, highlight the nonexistence of it.

3.2 Selection Process

3.2.1 Theories and Literature

The theories were chosen based on published research, relevant academic literature and electronic pages. The databases used to collect the articles include “Emerald insight”, “GreenFILE” “Social Science Research” and the University of Gothenburg's “Supersök”, all which are relevant sources to the field of business economics. The majority of the articles collected are also peer reviewed to make sure that they are legitimate which Patel &

Davidson (2019) states it is important to get reliable information. To find the most relevant literature, keywords such as; *Supply chain, Healing crystals, Transparency, Gemstone, Mining, Sustainability, Green Supply chain management, Traceability, retailer and reseller*, were used. To get access to the most relevant research the keywords were searched in pairs with coordinating words “and”, “in”, and “with”. All the articles were evaluated from the research’s geographical area, the link between mining and the business of retailers, the crystals analyzed and the publication date. The literature and theories gathered from the search was then used to interpret the empirical findings received from the interviews.

3.2.2 Case study

This thesis was based on a case study which is defined as a study made on a smaller group of individuals, and done to get a more comprehensive and nuanced understanding of the thesis subject area (Patel & Davidson, 2019). The selection of the company was determined by the location and possibility to have on-site interviews. The chosen retailer operates in Sweden making it easier to study the company as a whole and hopefully get more comprehensive information of the supply chain, unlike if a bigger international company would be studied due to the known complexity of supply chains.

In addition to the focal company, interviews with the focal company’s supplier and an external actor were conducted in order to answer the research question based on the focal company's supply chain (See Appendix C). The interview with the supplier in Peru was conducted to get more insight into how countries differ in the supply chain management and to understand the process of mining crystals further. Gemrock Peru is of this time not conducting business with the retailer in Sweden but has as aim to become business partners in the future and supply crystals from Peru. Information was also gathered from Postnord’s website, which handles the outbound logistics within the supply chain.

The main focus in this thesis is to understand what can be gained from a transparent supply chain and how a sustainability strategy can act as a tool to decrease negative impacts along the supply chain of crystals. Therefore, the Swedish retailer was chosen as a candidate in this thesis due to their sustainability thinking that permeates the business. Since the Swedish retailer is still operating on a small-scale, but actively working with a conscious mindset in their business activities, they are a suitable focal company. This thesis aims to understand the complex processes of a supply chain, and furthermore how a retailer can strategically work to

set pressure and monitor the supply chain activities, and creates further knowledge to other actors in this field.

3.3 Data collection

3.3.1 Primary data

As stated by Patel and Davidson (2019) the design of interview questions has an impact on how the respondents answer. In this thesis the primary data was collected by open-ended designed interviews, thus giving the respondent room to explain or interpret the questions freely within the framework of the different themes in the interview guide. The questions formulated were explained thoroughly when including terms or concepts that are not commonly known. Open-ended questions were used to enhance the answers and make it possible for the authors to ask follow up questions or further explanation of terms, concepts or procedures. This to get a more comprehensive explanation and discussion which is needed to analyze the results contra empirical background and theoretical framework. The themes in the interview guide (See Appendix A) originated from the theoretical framework including stakeholder theory, triple bottom line, corporate sustainability model, supply chain transparency among others, and reviewed literature. The reviewed literature worked as a guideline in formulating questions based on GSCM, and supply chain transparency, with the aim to get a better understanding of the supply chain and as much information and insight as possible. Appendix A was used for both the supplier in Germany, external actor in Peru and the same questions were used to find information regarding Postnord to the extent possible. The focal company was continuously a part of this study and communication through email and zoom-meetings occurred regularly which gave the authors the opportunity to ask supplementary questions. A general interview guide (See Appendix B) with the Focal company differs due to the continuous contact made. All interviews were conducted over the digital platform Zoom, with unlimited time frames since the respondents had busy schedules and the time difference between countries limited regarding time of day. The interviews were recorded through phone devices and transcribed with the permission from the interviewee to make sure that important aspects were formulated in a transparent way and interpretation was avoided.

3.3.2 Secondary data

The theoretical framework and literature consist of secondary data gathered through previous research, scientific articles and theories. Secondary data from the focal company and Gemrock Peru's websites were used to complement the interview answers. Secondary data from Postnords website was used to gather information about their sustainability practices which was published in their sustainability report. To be objective with the findings of secondary data that could be biased, the authors have kept this in mind during the examination and compared it with different relevant sources. Postnord website and annual sustainability report, among the other respondents' websites, were though seen as the most informative source, and therefore used in this thesis. Articles that do not investigate crystals have also been collected, such as those that research the area of diamonds. This research provides useful guidelines in this study's research since the area of mining of diamonds has been more frequently researched.

3.4 Analysis of data

In order to analyze the empirical findings gathered from the interviews the same structure was used as for the interview guide (See appendix A). The findings were sectioned in different themes where the respondents' answers were compared and similarities highlighted. This to more easily get an overall view of the respondents perception and knowledge of the industry. The different categories that the empirical findings were divided into are *sustainability*, *business model*, *situation with stakeholder* among others. Thus to enable a comparison to previous research, theories and models, and answer the research question.

3.5 Ethical considerations

Patel and Davidson (2019) explains how ethical considerations are an important part when conducting a research to enable the research to have high quality and credibility. Thus, before conducting the interviews the subject of the research was presented together with the question if the respondents wanted to be confidential throughout the study. Confidentiality means that personal data gathered through the case study can not be accessed by unauthorized persons (Patel & Davidson, 2019). This was an important aspect to clarify so that the interviewee

could explain the circumstances surrounding the industry without fearing that this could result in bad publicity.

3.6 Quality of research

The quality of a qualitative research is often defined by the validity of the report. Validity is given by studying what is relevant to the research (Patel & Davidson, 2020). In order to extend the validity it is made clear that the results gathered in the case study will be interpreted by associated literature and theoretical framework. This report and problem formulation is supported by the case study that will give more insight in the supply chain, and the transparency within it. By looking at existing research and analyzing through the theoretical framework, connections and conclusions can be drawn and result in higher validity. To increase validity several articles with different authors have been chosen to get a nuanced picture and expand the understanding and support in the analysis. The dependability of the study is noticed to differ due to ever-changing contexts, and must be considered when approaching the study.

The research method was based on interviews and a comprehensive analysis of chosen articles of previous research, called the triangulation method (Patel & Davidson, 2019). Using more than two sources for analyzing the results and the conclusions drawn will result in a more comprehensive and nuanced outcome, in order for this study to increase depth and quality.

4. Empirical background

The section concludes the empirical data that has been collected using trustful databases, evaluated from the authors and publications. The empirical background presents previous research in the area and what is yet to be further researched. This chapter provides the thesis with further insight in the industry, in order for the analysis to take place.

4.1 The industry of crystals

Crystals are mined in nearly every continent of the world (Cartier, 2010) and in recent years the industry is growing larger due to social media and a more spiritual lifestyle (Pettersson, 2010). Over 47 countries are included in the industry of gemstone mining (Archuleta, 2016). Today, large-scale mining, i.e. mining that is run by big operations and usually uses a lot of mechanics for the extraction, of crystals is illegal in many countries, therefore artisanal and small-scale mining often occurs instead (Archuleta, 2016). Artisanal and small-scale mining (ASM) makes up 80% of the total mining activity in the world (Cartier, 2010) and is the type of mining where people by hand, or by the use of smaller machines, collect and extract the stones. The people extracting the crystals usually work as individuals or in small groups, for example a family, and are often seen in developing countries (Archuleta, 2016). As mentioned in 2.0 and to put this in perspective, approximately 10 percent of the world's diamonds are extracted through artisanal mining which makes out one of the reasons why the industry of diamonds is more regulated and monitored (Graff, 2016). When mining occurs in smaller mines it is more difficult for governments to monitor the activity and make sure that the mining is following ethical pursuits. The effects on environment and labor are extensive and since the supply chain is long, costly, and demanding the industry also contributes to a lot of pollution and emissions. Stones are often mined in one continent and cut in another which means long transportation routes (Cross, 2010). The industry as a research area is complex since there are a lot of different crystals on the market, the industry is difficult to regulate, and the stones are mined in different countries and continents (Cartier, 2019).

4.2 The supply chain and sustainability concerns within the industry

The supply chain of crystals includes mining, treatment of the stones such as polishing, dyeing, cutting and transportation by trucks, boat and/or flight (Wiebusch Sindelar et al., 2020). Crystals are a natural resource which means a resource that is extracted from nature for the cause of economic growth (lexico, n.d.a.), they are also a nonrenewable resource since they are a type of mineral that will not grow back (lexico, n.d.b.). This and the fact that lands are often left without being taken care of after the extraction costs many harming effects to the environment (Cartier, 2010). The extraction of crystals contributes to environmental effects such as soil erosion, degradation, deforestation, harm to animal life, all which are contributing to global warming (Archuleta, 2016). The mining also affects biodiversity, water that has become stagnant which leads to contaminated drinking water and the cause of malaria to the local workers (Cartier, 2010). The majority of previous research focuses on the environmental aspects of the industry and the harm it does to it, but sustainability has two more dimensions other than the environmental aspects. The social aspects include poverty among workers, child labor, diseases such as silicosis and malaria and danger at the workplace (Cartier, 2010).

Previous literature shows that a sustainable supply chain within the industry of crystals has not yet been achieved (Archuleta, 2016). This has to do with the difficulties of corruption, lack of regulatory framework and the fact that there is a problem regarding who is responsible for the effects of this industry. It has not yet been established whether it is a problem for governments, corporations or a responsibility that should be shared between both of the sectors.

4.3 Regulations and transparency within the industry

Today, many retailers are not able to account for the various steps of the supply chain and the origin of the crystals which shows a lack of transparency throughout the supply chain (Wiseman, 2019). To manage the supply chain in a sustainable way, transparency and traceability is needed. Transparency is needed in order to gain trust from stakeholders but also to provide them with the correct information about the company's business (Epstein & Buhovac, 2014). Several previous research's state that the government needs to take responsibility, tighten the laws for the industry (Cartier, 2010) and continue with further research in order to gain a better understanding of the field (Cartier, 2019). Several attempts to introduce certification schemes within the industry have taken place but as of today, none

of these attempts has been put into place and used within the industry (Graff, 2016). Regarding regulations, some improvements have been made over the years. One example is the initiative taken by the World Bank. Communities, Artisanal and Small-scale mining (CASM) was launched in 2001 by the World Bank, an attempt to increase the economic growth of the industry rather than contributing to an increase in poverty and environmental destruction. This initiative has improved the regulatory framework of Madagascar and there are similar attempts being made around the globe such as the Tanzanite Foundations work in Tanzania and the initiatives of Gemfields, improving the industry in Zambia and Mozambique (Graff, 2016). These initiatives have all been taken to improve the environmental standards and lifestyle of miners and workers within this industry.

An attempt to better structure the management regarding sustainability within businesses of this field has also been done by Wiebusch Sindelar et al. in 2020, a study which gives an example of improvements in the form of a framework of indicators within the industry and how these in the best way could be monitored.

5. Empirical findings

Data have been collected by conducting individual interviews with three actors working with the supply chain of crystals. The following sections will present the empirical findings that the interview guide resulted in and primary data collected. The interview guide sets a base for the structure of the results.

5.1 General information

The interviewee of the focal company works with purchase and e-commerce and has a general background of working with environmental issues in purchase from previous employment. The focal company is currently collaborating with three private suppliers that travel to countries and buy stones. Figure 2 presents the focal company's general steps in the supply chain process.

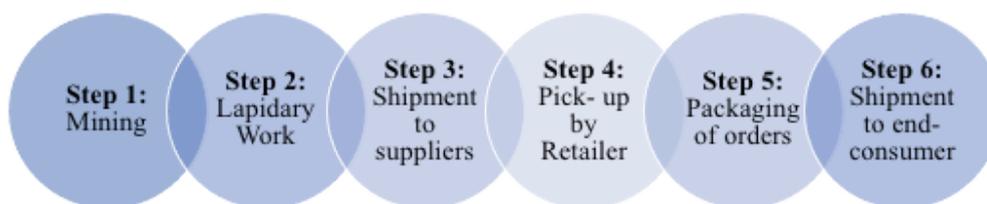


Fig 2. Overview of the general steps in the supply chain process of crystals of Focal company. Own elaboration. (Gemrock Peru, Interview 5 May, 2022)

The German supplier is one of the focal company's main suppliers located in Germany. The interview conducted with the company is held with its founder, owner, and general manager. The interview person's main responsibilities include trips to different mines in different countries such as Madagascar, Brazil, United States, South Africa, among others.

Current freight from the Focal company is shipped with Postnord and goes to regions such as Europe and the USA, and countries as Norway and England. Postnord was founded in 2009, through a merger between Svenska Posten and Post Danmark. In 2011 the name was changed to Postnord, which is currently one of the leading postal operations in the Nordics(Postnord, n.d.).

The external actor is the founder and general manager of Gemrock Peru, which is a crystal mining and lapidary company located in Peru that works with mining of crystals, lapidary work and exportation. The primary responsibilities include cutting and polishing of stones, sales, training of staff and business development. The company is currently the only one on the Peruvian market that conducts mining and lapidary work by themselves, and is registered as a legal business.

5.2 Sustainability within the supply chain of crystals

As of now, the focal company has no sustainability strategy, other than a more general sustainability thinking that permeates the business. This is in line with the work of the German supplier, as the interviewee describes a mindset that is in line with: “by doing good, you also receive good” (Interview May 5, 2022). Sustainability has been more of a core value to both the focal company and the German supplier, rather than an established documented sustainability strategy. Both the focal company’s website and the interviewee in Germany focuses partially on how the crystals are packed, saying that the use of plastic is minimized, the focal company has an aim to be completely plastic free, and the boxes used for shipping is as small as possible and often made out of recycled materials (Focal company, website, 2022; German supplier, Interview May 5, 2022). Packaging and shipment of the end-product is done by the retailer itself and recycled paper material is the main packaging material, beyond silk paper and cloth bags.

The focal company is stated to take a proactive approach as far as possible with ethical mining, transportation, and packaging, and are choosing collaboration partners that are able to ensure that guidelines are followed by traveling to the mines to see that fair payment and good working conditions are established (Interview Mars 3, 2022). This is confirmed by the German supplier, as they are concerned about social sustainability and can guarantee that the

mining is done ethically, and that the environment is taken care of in Brazil, Madagascar, and South Africa for example (Interview May 5, 2022). The reason they can guarantee this is because of his visits to the local mine and the documentation that is being done by films and photos. The union in Madagascar provides miners with face masks and ear protection so that they can avoid disease and stay protected during their working days. They also provide health care in cases of accidents. For countries such as India and China the supplier is not able to guarantee that the mining is sustainable since they have never visited those countries, even though they buy from them sometimes. However, this is not documented, and the German supplier does not talk about any contracts for employees such as miners. A problem that is brought up by the Peruvian actor who runs a company in Peru that is the only company in the country that has a formal business, meaning workers are contracted, which gives them vacation, health insurance and retirement payments included in the labor conditions. Being a contracted employee is the main social aspect that is critical to take into consideration if wanting to work in line with the SDGs. The miners are often family-based businesses, meaning that their whole livelihood depends on the income received from the mines. Thus, creating large problems when people not under contract face losing a day's income if they are ill, or have to go to the hospital, which in turn results in bad working conditions due to no possibility to be on sick leave (Gemrock, Interview May 5, 2022). As understood by Postnord's website, the outbound logistics that provide the transportation service to the focal company, good working conditions, strong leadership and equality is integrated in their sustainability strategy (Postnord, n.d.). This is in line with the focal companies view of social sustainability, even though it is more clearly stated as a strategy for Postnord than for the focal company.

Regarding environmental sustainability, the focal company states that they try to minimize air freight, a statement that is confirmed by the German supplier who describes that the transportation used for crystals in his company is trucks, cars, and marine transportation. The German supplier also states that the regulations have improved in recent years and gives examples such as landfill of used lands for extractions, cleaning of waters, no use of chemicals. However, this is not confirmed by any third-party certification since the supplier states that there is a lack of control and monitoring even if a certification such as "fairtrade"

is used (German supplier, Interview May 5, 2022). As for the question of whether there is any person responsible for sustainability, the supplier in Germany responds that there is such a person in Madagascar, Brazil, and South Africa for example. Because of the lacking documentation and lack of certifications, the focal company states that it is difficult for them to control the information given by the German supplier, even though he visits the countries where the crystals are extracted to control the work. The Peruvian supplier on the other hand states that a voluntary certification system is necessary for the environmental work to improve. There is no system to control or measure the industry today and the environmental impacts in terms of pollution, depletion etc. An initiative has been made by this company to reduce the impacts that the business has on the environment, a NFT¹ (non-fungible token) project with crystals, with the hope that half of the revenues can go to buying deforested rainforest. Other than that, they also clean and reuse water, to minimize water from going out to watergrounds. The shipment from Peru goes mainly through maritime freight when the amounts are around half a ton, but for smaller deliveries air freight is necessary. This is a logistical matter which Gemrock Peru finds hard to influence due to their international shipments (Gemrock, Interview May 5, 2022). The German supplier had never heard of the SDG's and thought it sounded like something that would be truly difficult to achieve. The Peruvian supplier had never heard about the SDGs either, but when the goals were explained to the interviewee, he stated that these are goals they work for everyday and that are integrated in the business. Postnord however works with the SDGs and is working with UN's Global Compact (Postnord, 2021) which is an initiative that enables companies to get further understanding for how to improve their sustainability work but also meant to encourage them (UN, 2022). The customers of Postnord are also able to calculate their climate impact on their shipments. It is difficult to tell if Postnord has a more active approach in working sustainability but it is clear that the strategic sustainability approach is more defined for the outbound logistics than for the inbound logistics.

As for economic sustainability, the German supplier pays double the salary for workers in Madagascar, but this is not documented in any way. The supplier's philosophy when it comes to

¹ NFT (Non-fungible token) is financial assets consisting of digital data. The tokens can be bought and sold as other physical things. (Simplilearn. 2022)

economic sustainability focuses on helping people at the location by providing families and dogs with economic contributions that help them live their lives. This could include money for health care and for food and shelter. As for the Peruvian supplier, it differentiates itself on the Peruvian market by being the only crystal selling company that generates taxes and contracted employee opportunities. The interviewee further explains that the majority of the work that is done, which is through informal businesses, has the most harmful impacts and result in negative social impacts. No regulations in this industry on a national or international level exist, and in Madagascar and Peru the business is controlled by the mob and is seen as organized crime on a governmental level. Drugs are involved in the business, and often shipped off in the containers filled with crystals to other countries, therefore bribery in the customs is occurring frequently. To work towards a prosperous future, suppliers need to work under formal and legal conditions that generates tax income to the country, but also creates work opportunities under contract and contributes to economic growth (Gemrock, Interview, May 5, 2022).

5.3 Sustainable Business Model

The supply chains of crystals differ depending on the gemstone due to origin. The focal company collaborates with intermediaries that travel to countries by themselves to pick up deliveries, or hand-pick gemstone in the mines. When questioned about if there is a person responsible for green supply chain management or head of sustainability the focal company answer was “There is no head of sustainability at the company as of this moment, but guidelines of what is requested in terms of ethical mining is made clear to the suppliers, who take responsibility in controlling the mines and workers” (Interview Mars 3, 2022). This is supported by the German supplier that conducts these controls (German supplier, Interview May 5, 2022). The external actor says that he is in charge of the green supply chain management in his company, but does not know of any other crystal shops operating in this way. According to him, there is a limit to how one can work with sustainability within the supply chain of crystals, but everything that is possible to enhance is to the best extent (Interview May 5, 2022).

Due to long distances and no certification system that could monitor the conditions, it is difficult to measure environmental, social and economic impact along the supply chain. The

external actor explains that in order to be able to monitor and measure the environmental, social and economic impacts a voluntary certification system would be needed but this is costly. A work contract could help monitor and measure social aspects by enabling to see payment to workers and overall labor conditions included in their formal job contract (Gemrock Peru, Interview May 5, 2022). The German supplier does not see any meaning of this due to his own travels to the countries where crystals are extracted from and can therefore monitor this by himself (German supplier, Interview 5 May, 2022). This results in difficulties for the focal company to do it by themselves, due to long travel distances that prohibit them from controlling on set, and no existing measurement tool (Focal company, Interview, 2022), The external actor agrees with that a international measurement system is needed for all actors in the supply chain of crystals to measure their own impact, and has a wish of his own to one day calculate Gemrock Perus ecological footprint and be the first crystal supplier that can showcase this to stakeholders (Gemrock, Interview 5 May, 2022).

5.4 Transparency within the supply chain of crystals

Transparency within the supply chain of crystals is often difficult to obtain due to corruption, informal or illegal businesses (Gmerock Peru, Interview 5 May, 2022). Although transparency is something that the retailer strives to achieve, they find it difficult due to no existing certification on the market (Focal Company, Interview 3 May, 2022). Meaning that there is no system to use in order to control that guidelines or requirements are withheld. The retailer must trust in its intermediaries and individual countries governmental control that mining of crystals is done within their selfmade standards. This is also an issue brought up by the external actor who also sees problems with no way of being transparent or generating information flow through the supply chain. According to the external actor the issue with transparency is complex due to informal business. Which means that a business is not tax registered, therefore not having any paper trail, resulting in no way of trailing the crystals origin and the processes it goes through before landing in a retailers shop. Illegal businesses means that the companies are not registered, and therefore non-existing, leading to the same difficulties with tracing. The main problem with no traceability is that there is a lack of transparency (Interview, May 5, 2022).

The difficulties with transparency and traceability within the supply chain starts though with the miners. The gemstones are often mined on small-scale, by family-owned businesses, with

their own individual mines, that are found or owned through land. Due to no governmental control in form of laws or regulations, miners' location is held secret to not risk anyone from coming and exploiting the working grounds. Miners themselves are therefore not positive to transparency because of self-protection. The location of the mines are kept unknown towards external parties because many family owned businesses' livelihood depends on it. To have a system with third parties coming in to check on the supply chain is therefore difficult. Official documents are a way of being transparent, but transparency in general can only be done by a system that controls it. (Gemrock, Interview, May 5, 2022)

The supply chain of crystals faces several challenges to become transparent. It is difficult to rely on that all information is given by the middle-hands about miners and overall of the environment in which they work. The communication is mostly based on face to face meetings conducted by suppliers that travel to different countries and buy stones from miners or lapidary workers. There is therefore no documented communication or information flow in the supply chain. Trust is therefore something required for the supply chain to work (Focal Company, Interview 3 May, 2022). According to the German supplier the supply chain is however transparent. They know everything they need to know and try to be as transparent as possible towards customers by communication. (Interview, 5 May 2022).

Postnord enables traceability and transparency within the supply chain by making it available through a tracking system and being transparent of the climate impact of shipments. Customers can easily track their shipments and the steps it goes through order number, and climate calculations can be done to see how much CO₂ emissions that one shipment contributes to. To make sure that sustainability flows through the supply chain Code of Conduct is used to monitor and mediate the demands set on the suppliers. The suppliers are continuously monitored to make sure that expectations are met (Postnord, 2021).

5.5 Current situation with Stakeholders

As of now, limited controls of the supply chain can be done and therefore of the actors as well. The retailer in Sweden has demands on how the actors shall conduct their business if collaboration is expected to exist. It is evident that not many suppliers exist on the market that are working with ethical mining or measures the environmental, social or economic impacts. This results in limited existing potential business partners on the market (Focal

Company, Interview 3 May, 2022). More requests about sustainable and ethical mining are growing, but the prices that are necessary to charge to be able to achieve this are often too high for the consumers which leads to many dropouts. Many companies can say that their stones are ethically mine but there is no proof for this and due to no control system no one can check this. This leads to many consumers believing that they are buying stones from miners or other suppliers that work ethically but in fact are not (Gemrock, Interview May 5, 2022). The external actor makes it very clear that pressure from retailers and end-consumers are needed to make a change in this industry. Consumption patterns need to change, because it cannot happen from the producers side if the price stays cheap on the general market (Interview May 5, 2022).

Demand for a decrease of negative externalities from the logistics and transport sector has pressured companies such as Postnord to serve the right insight into their supply chain. The Swedish Retailers demand about environmental and social impacts are therefore suited with the values and guidelines set on inbound logistics as for outbound logistics. Due to following GRI standards, sustainable aspects of the supply chain are monitored and measured, such as negative impacts on environmental and social aspects. How Postnord takes actions or works proactively against insufficient conditions can therefore be seen in the Annual Sustainability report (Postnord, 2021).

5.6 Future and Disruptions

The pandemic caused a higher demand on crystals which has made their business expand, this and no possibility to travel to countries and check on the conditions that crystals are made in, made it even more difficult to control the supply chain. The focal company can however see a future trend in sustainable and ethical mining but lacks a system that enables them to control their current three suppliers. The future trend of more ethically mined crystals is however increasing and can create more regulated systems that are applicable no matter country (Interview 3 May, 2022). The German supplier agrees with this and explains that because of social media, the younger generation keeps demanding healing crystals since they want to get more grounded and connected with nature. The trend of talking about healing energies and self-love has increased and therefore the demand is higher, and in the future the supplier also thinks that the regulations will increase and that the industry will be even more controlled (Interview May 5, 2022). The external actor hopes for this as well but says that

“the covid-19 pandemic generated a massive expansion of the gemstone market, and due to regulations the majority of the mines were closed which resulted in consumers that had to get their hands on crystals were left to us”. Further he explains that this expanded their business during the time and the revenues were more than what was earned together the previous four years. The future after the pandemic may go back to before when consumers could get their hands on cheaper crystals. (Interview 5 May, 2022)

The German supplier adds that the pandemic affected the supplier in various ways. All retail-shops had to close during the pandemic and since many customers did not know that the supplier is a wholesaler, they did not know that they were open. During the first four weeks of the lockdown, they did not sell any stones and got many returns. But then, thanks to the internet, the sales exploded on the web shop. The sales increased threefold. Because of this high demand, the supplier had to close the shop for new customers to keep providing the old clientele (Interview May 5, 2022).

During the pandemic e-commerce increased world wide, and parallel to them costs followed suit. Postnord works therefore with increasing efficiency through logistics, innovation, technology, and has a goal to by 2030 be fossil free. Growing need for responsibility and accountability from International level and from the private sector, has made it evident that the possibility of being a green logistics company is not only a desire but a need. Investments on green technology and vehicles, and continued work through the GRI standards are made to contribute to the SDGs (Postnord, 2021).

In the future as consumer awareness grows, a trend of more pressure set on the gemstone supply chain can be seen. Now in Peru the informal and illegal way of conducting business results in no paper trails which makes it difficult to obtain information of the economic, social and environmental aspects that permeate the business. Increased technology can lower the costs of producing crystals, but any trends of bureaucracy and governmental interference is not heard of or predicted on the market.

6. Discussion

The following chapter discusses the empirical findings with help of the theoretical framework and empirical background. A discussion of the research questions from an analytical perspective based on sustainability, supply chain management and business approach is presented.

6.1 Sustainability within the supply chain of crystals

In general sustainability in the gemstone industry is growing due to more consumer demand for ethically mined crystals and governmental regulations that somewhat controls the industry. The empirical background and findings are though agreed on how much more that is needed to be done to minimize the negative externalities that occur in the supply chain. The supply chain of healing crystals has been analyzed through a sustainability perspective, with the theoretical framework as a basis, in order to understand what aspects of sustainability to take regards to when creating a sustainability strategy and how transparency can work hand in hand with sustainability.

6.1.1 The supply chain of crystals seen from a TBL perspective

As explained by Elkington (1997) the TBL explains how important it is to take environmental, economic and social aspects into consideration when creating a sustainable corporate strategy. It is also necessary to create profit and value for shareholders when doing business. The TBL works as a tool in measuring the three pillars of sustainability, and not only the financial performance. When conducting measurements, it is easiest to start with what or whom the business is influencing or is influenced through its business activities. In the case of the Swedish retailer people consist of miners, lapidary workers, suppliers, locals, end-consumers etc. Through the empirical findings and background it can though be stated that the miners, locals, and informal workers should be the main focus when creating a sustainability strategy. With regards to Elkingtons (1997) way of measuring the three P:s the most suited ways of measuring People in this case, should be done by working conditions and contracted employees. Thus, giving employees more labor benefits and attracting workers and at the same time pushing other companies to follow suit. This as mentioned before, could

be done by getting workers under contract. Social aspects could in this case be measured through workers benefits, insurances or general working conditions included in the employment contract. But also this could be a way of finding suppliers that work in ethical ways through formal contracts.

The environmental impacts on the Planet are difficult to measure due to lack of transparency of the mines location, and therefore what environmental harms they constitute to. However, with demand and pressure set from a corporation, more monitoring and control of depletion, water contamination and emissions could be made. Due to lingering customs, departures with ships or air freight can be missed, prolonged or sometimes needed to travel back and forth due to expired permits, the carbon dioxide emissions can thus be hard to calculate. A corporate sustainability strategy should focus on that pressure is set on choosing the most efficient and least harmful way of transportation, inbound and outbound, to ensure that they are working to the best of abilities.

Profit can easiest be measured also through employer contract, which is the best way of influencing the private sector but also on a national level. Tax revenue increases and contracted workers increase the economic growth in countries. When demands from the consumer sector about contracted workers increases, employee opportunities can expand and have an impact on a national level. It is evident that the social and economic aspects are clearly linked and a needed aspect to consider in the creation of sustainability strategies, approaches and management throughout the supply chain of crystals.

6.1.2 How to integrate the SDGs in the supply chain of crystals

The SDGs is not a common term in the industry of gemstone but much of the surrounding supply chain activities are contributing to them directly or indirectly. When faced with the question of how or if implementation of the SDGs in the supply chain of crystals would be possible the answer is clear. It is needed to contribute to a sustainable supply chain and work against the main aspects seen from a producers and miners perspective; no poverty, decent work and economic growth. From a retailers perspective traceability and transparency is needed to understand the economic, social and environmental impacts generated from the supply chain, and furthermore to be able to set pressure on the most critical stakeholders, which is supported by the UN's SDGs (n.d. b) Although a few small-scaled suppliers and miners have taken upon themselves to minimize environmental impacts such as water use and

contamination by cleaning up the water used in production and then reusing it, this is not the praxis in the industry. Furthermore, employing workers under a legal contract that fights against the country's poverty and increases overall economic growth in the family owned businesses is not the regular way of conducting business in this field. The demand from end-consumers, retailers and suppliers is needed therefore to give an incentive to start working towards the SDGs. A sustainability strategy from the retailer with the SDGs in consideration can help them to measure, control and give a clear directive to the suppliers along the supply chain (UN, n.d. b).

From the empirical background and findings, one can argue that the gemstone industry could contribute to most of the SDGs, and it is important to look at which of the SDGs are important and relevant for the focal company. The interview conducted with Gemrock Peru gave us hands down the most critical aspects of the supply chain. Informal and illegal work is one of them, for which a sustainability strategy for a retailer should focus on. This would work towards the SDGs: 1 (no poverty), 3 (Good health and well-being), and 8 (decent work and economic growth). The interview with the German supplier also showed that the economical and social aspects are the most important by explaining the importance of giving back to the local community where he operates. This emphasizes the fact of knowing that the paid workers, locals and areas are not given enough for the exploitation of crystals. Thus a sustainability strategy from a retailers' end with these goals in focus, could guide and help them to understand how to measure and control the circumstances in the work areas, but also set more pressure on what their collaboration partners shall bear in mind. SDG 12 (Responsible consumption and production) is something that should be communicated towards the end-consumers and show the motives behind higher prices on ethically mined crystals. To change the consumption patterns is necessary when speaking of the crystal industry.

The UN states that a competitive advantage can be gained by work in the line of the SDGs (UN, n.d. b) which is agreed upon by the external actor (Interview, May 3 2022). During the covid-19 pandemic, supply of crystals decreased due to closed mines, this resulted in suppliers such as the external actor with higher prices but ethically mined stones were left to choose because of well filled stocks and no other suppliers. Consumer awareness and demand grew for ethically mined stones and profits increased. This in fact resulted in a competitive advantage. However, it is left to see if the demand of ethically mined stones will proceed now

as business is going back to usual and consumers can find stocks of cheaper priced gemstones on the market.

6.1.3 Sustainability as a strategic approach

As explained by Epstein and Buhovac (2014) the corporate sustainability model can work as a tool in gaining understanding for how the small-scaled retailer can take a strategic approach and create value for the company and its stakeholders. In this case local community and environment, municipality, families, end-suppliers and end-consumers are one of many stakeholders influencing the focal company.

Inputs such as human capital, natural resources, existing and non-existing regulations are some of the few components that constitute the broader environment of the business and act as drivers of the change needed for the focal company. The focal company has a sustainable thinking that is baked into its core values, which should also be the drivers for wanting to achieve change within the industry of healing crystals. The mention from all respondents of increasing consumer demand of sustainable practices should also be the main driver, if the focal company wants to maintain its customers and attract new ones through the competitive advantage gained by being one of the few sustainable retailers on the market.

The inputs identified therefore in this research are demand of ethical mining, transparency, control and monitor systems, national and local regulations in the countries where crystals are extracted, but also the focal company's own willingness to act more sustainably. The chosen processes needed for conducting or improving a sustainability strategy determines in the end the outputs. According to Epstein and Buhovac (2014) top-management involvement in the process results in the most efficient strategies, and include strong leadership and a sustainability strategy among others. Thus, the focal company would indeed benefit from clear and direct guidelines and framework communicated by the top-management throughout the supply chain. The focal company shows that sustainability is embedded in their values and that the concern for the environment and workers are something they care about. This shows through the fact that the German supplier of the company, which is a bigger wholesaler who they use for larger orders, also has the same values, and makes sure that the sustainable aspects are considered. This means that the focal company to some extent takes responsibility by choosing a supplier that does the same. Since the values of sustainability seem to be the core of the focal company (The focal company, Interview May 5, 2022) it is noted that they

care and want to make a difference. It would not be possible for the company to stand for these values without a leadership that states the same, therefore the culture and leadership of the company seems to be in line with sustainable values but the lack of a strategy and framework is clear. A sustainability strategy has the intention of being proactive and enabling the focal company to stay in lead of different changes in the outside world, but also to measure and monitor the outcomes.

The expected outputs of a sustainability strategy that can monitor, measure and trace the impacts along the supply chain would enhance the value towards stakeholders. By understanding what different supply chain activities contribute to, negative externalities can be minimized or removed through the knowledge that a measuring system gives. The improvements can be seen in outputs through stakeholder reactions and approval. This would also generate more long-term performance through creating incentives to change the industry in general. The educational process that the marketing of the focal company could lead to if they spread the word about the industry towards customers might not only give the customers more knowledge but also send out the signals of a retailer that cares and takes actions. Hopefully this would create a long-term relationship between customers and a competitive advantage that not many other retailers have, given that the information about the industry would be relatively new to the large masses. With more companies operating in ethical ways and having systems that can control labor conditions, trace transportation or production paths, and measure the impacts generated in forms of environmental, social and economic aspects, stakeholders can gain understanding for how all can play their part in the industry of crystals.

Through right leadership a sustainability approach and strategy to increase stakeholder value can be made (Epstein and Buhovac, 2014). The results from a sustainability strategy could then be seen in more approval from consumers, attracting employers, and increasing the revenues and making it possible to expand. The cleaning and reuse of water is an example of how a resource necessary in the lapidary work minimizes contamination and water usage, but also decreases costs for the business itself. This creates a shared value among the stakeholders. Miners and producers can create crystals with lower costs, contamination of water ground and environment decreases which improves the living conditions through less risk of getting sick, but also the knowledge for end-consumers that seeks to understand and lessen their own harmful consumption.

6.2 Supply chain management

Starting wide, the external supplier states what has already been found in the empirical background: that the industry lacks transparency, is corrupt and harming in all sustainable aspects (Cartier, 2010). Furthermore, the interview person states that there is no country that does not have problems regarding this industry (Gemrock, Interview May 5, 2022). Even though the articles of the empirical backgrounds all were written some years ago, the answers of the external supplier in Peru and focal company are in line with previous research and there's still a lot of room for improvement. The supplier in Germany has a different mindset regarding the supply chain. He states that the business is conducted in a good way as it is now, and it might be so that the supply chain of this certain supplier is sustainable since he visits the mines and can see the work by himself (Internal supplier, Interview May 5, 2022). Though, it is important to mention that the supplier in Germany purchases crystals from several different countries and it is impossible for them to be at all places at the same time to monitor the work and decide whether the work is ethical or not. The supplier in Germany may visit different mines in several countries but they are not able to account for the sustainability of the different transportation routes that the crystals take before arriving at their company in Germany (German supplier, Interview May 5, 2022). It is therefore of importance to see the example of the German supplier more like an exception rather than the rule since there would not be as much research of harming effects within the industry if there was nothing to improve within the supply chain. The Peruvian supplier also states that the logistics of the transportation routes are complex and that it is hard for the suppliers to control them. This and the complex transportation route explained by the German supplier implies that there is room for improvement when it comes to make the transportation more efficient and thereby more environmentally friendly. As of today, the German supplier does not have a third-party certification and it is not proved during the interview with either the focal company or the supplier that some certifications within the focal company's supply chain might exist. This makes the information about the supply chain and whether it is sustainable less accountable. A third-party certification is a better proof than an oral statement since it takes a loyal relationship and a lot of trust to just believe someone for their word. Especially in an industry like this, given the clear examples of unethical and un-sustainable mining and cutting that exists today. As mentioned by the Peruvian supplier and in previous literature (Cartier, 2010; Archuleta, 2016) some sort of third party certification could improve the sustainability work within the industry and give incentives to miners and suppliers to run a

more ethical business. As explained by Graff (2016), previous initiatives involving voluntary certifications have shown improvements in countries such as Madagascar, another good example to why it should be considered and also looked into further by the focal company since some certifications exist today. Furthermore, suggestions of developed monitoring of the supply chain is suggested, however this might be difficult for the focal company to manage alone. Since the focal company relies on the information they get from the supplier and are not able to change what is made further down the supply chain, a code of conduct could be used as a tool for the company to initiate change. In the use of GSCM, the important improvement areas would be highlighted and from these, the focal company could develop a code of conduct. The code of conduct would help the focal company to be consistent throughout their work with different suppliers and make sure that they put the same amount of pressure on all stakeholders, both inbound and outbound.

The focal company talks about the sustainability within their business and can account for the three closest suppliers of crystals that they have (The focal company, Interview 3 May, 2022). To achieve a sustainable supply chain, transparency is needed (Epstein & Buhovac, 2014). It is first when all the different steps of the value chain are identified that the work with the supply chain can begin. Since a Green supply chain management (GSCM) includes taking the triple bottom line into consideration, one must first learn about the effects the business has on people, the planet and profit. The one supplier that chose to participate in this study has many different supply chains since they vary depending on which stone you are looking at and the origin of it. The supplier in Germany purchases stones from all over the world, from countries such as Madagascar, Brazil, South America, Mexico, India, and China. When the focal company picks up deliveries from the supplier in Germany, it is therefore difficult to trace the different stones and it would demand an extensive amount of work. The fact that the crystals are difficult to trace makes the focal company less accountable since they will not be able to answer customers' questions about the gemstone's origin. In a world where traceability and sustainable products are increasing in demand, it might lead to customers questioning whether the company is as sustainable as they say they are. Since the harmful effects on the environment that the supply chain of crystals has (Cartier, 2010), GSCM is necessary for the focal company to take a stand on the market and act in a more sustainable manner. The supplier in Germany also states that the minimum number of days it takes for the crystals to be shipped from Madagascar to Germany is 60 days, which is explained by the supplier as a long and complex transportation route. This type of transportation also includes

a lot of waiting in different harbor's. This implies that the logistics of the supply chain is complex and need to be overlooked for the focal company to make the transportation more efficient. The focal company mentions that they buy bigger loads at a time from the supplier in Germany which shows a smart strategic thinking since it will reduce half-full shippings down the supply chain, a problem that in the transportation sector is harming the environment. The German supplier has the same philosophy as the focal company which strengthens the fact that sustainable transportation is considered in both business approaches.

A Green Supply Chain Management (GSCM) can decrease the company's risk of not being able to purchase stones. To reach a GSCM clarity and transparency is needed to get an overview of the supply chain (Muduli et al., 2013). When that is done, it is easier to avoid buying from companies that do not work in line with the environmental standards of today, such as the SDGs. As a bigger part of the industry gets highlighted, both the retailer and the two suppliers can see trends such as harder regulations. By doing the strategic work and concluding a green supply chain, the retailer can work proactively and thereby avoid future closedowns and more strict laws. GSCM is not just for the sake of the environment, but it will also affect the retailer in a positive manner (Muduli et al., 2013). The retailer states that they work with sustainable issues such as not using any plastic, demanding fair working conditions, fair paid workers, ethical mining, but lacks an actual sustainable framework and strategy for this. Since the focal company lacks a strategic approach and a framework to handle sustainability issues and affect the industry in the best way possible, both the inbound and outbound logistics needs to be reviewed.

6.3 Business approach

Nowadays more people are demanding sustainable options, but the question is if it is entirely true. Both the external and the internal supplier states that there are a lot of actors within this industry that are still not interested regarding this matter. This implies that consumers might be more interested in sustainable options than the retailers within this industry are. The supplier in Peru also states that some retailers are asking for crystals that are ethically mined but once they see the price, they are not ready to pay. This implies that the knowledge of this industry still is lacking. If every consumer knew about the dark side of this industry, there would at least be less demand for cheap crystals (which are either fake or coming from a mine with poor working conditions). For a company to create a competitive advantage out of

this situation, one must take all stakeholders into account and spread the knowledge of what is yet not known among the public. The stakeholder theory (Freeman et al., 2010) implies that all the stakeholders should be considered.. For the focal company to value the miners, workers that polish and cut the stones, people working with transportation, transparency is of high value. The reason for this is that every retailer has many different stakeholders that are all interested in seeing different approaches and priorities from the retailer. The end consumer wants fast shipping, low prices and high quality, the miners want fair working conditions and a safe working environment, the supplier wants a long relationship and that the retailer continues to choose their product over the competitors'. The stakeholder theory implies that the focal company should take all these into consideration to achieve a successful business approach (Freeman et al., 2010). As the situation is today, the focal company does not spread much awareness regarding the downsides of this industry (at least what can be seen on their social media and website). If they were to highlight the problems within this industry, the end customer could both gain awareness regarding these issues and get a better understanding of why the focal company's prices could be a bit higher than other competitors, given that they take the environment and social sustainability in consideration. It is not an option for the focal company to consider synthetic crystals since the main reason for the customers purchase from them is because of the healing powers. This makes it a bit more challenging for the focal company to take environmental harm into consideration since synthetic crystals do not need extraction from the environment, even so, a lot of improvement can still be made within the supply chain.

What transparency does to not just the supply chain and the focal company's business, but to the market is to give a better insight into the negative effects of the industry. Consumers and stakeholders are not able to care for a problem they do not know exists, therefore it is of high priority to get the information about the industry out on the market (Epstein & Buhovac, 2014). Since the industry is stated to be corrupt in many ways (External supplier, Interview May 5, 2022), trust might not be enough to rely on when conducting business within this industry, as suggested works by the German supplier. The Peruvian supplier underlines the fact that many miners do not want to share information about the mines because it can increase stealing from that mine and selling the stones illegally and informally. This is an issue regarding the transparency since it makes it more difficult to trace the entire supply chain. To reach a more transparent supply chain, some sort of certifications in the industry

may be needed in order for the industry to be more documented and as an incentive for miners and suppliers to run their business in an ethical manner.

As for the diamond industry, it may not be applicable for the focal company to change their business into selling synthetic gemstones since they lack the quality of healing powers, however the diamond industry could work as a guideline when it comes to transparency. Since transparency within the industry of diamonds has been further reached (Atkin, 2018), the industry of crystals will still be able to follow in its footsteps regarding transparency (Wiseman, 2019). However, it will not be as easy to achieve since as mentioned in the empirical background, large-scale mining makes up the majority of the diamond industry which makes it more easy to track. It is of high importance that the research within this field gets developed so that the harming effects get as known to the general public as the effects of the diamond industry is today. One way for the focal company to achieve this is by using facts about the downsides of the industry in their marketing and show how their crystals are mined in a more sustainable manner. It cannot be stressed enough to add that for this to take place, a GSCM needs to be established first in order to avoid greenwashing. The focal company should create the urge within the end supplier that the focus should lie on wanting to consume a well produced crystal with a background of just social, economic and environmental circumstances. By having a strategy that is communicated through the retailer and to its all stakeholders, the end-consumers can find the incentives to buy fewer ethically mined stones, instead of more unethically mined. This in turn can change the demand on the market, making it more about purchasing ethical crystals rather than cheap ones.

7. Conclusion

The final chapter concludes the thesis and answers the research question. This is followed by a presentation of the contributions made and suggestions for future research.

The aim of this study was to give more insight into the supply chain of gemstones and highlight the social, economic and environmental aspects that one's healing crystals supply chain activities contribute to. This has been done to gain more understanding for how small-scaled retailers can act and create a sustainability strategy that works against the negative impacts. The sustainable strategy should arise from the Sustainable Development Goals (SDGs) and it is of importance for the retailer to look further into which of the goals that should be their primary when starting the work with a sustainable strategy. From the author's point of view, it might be too extensive a task to use all the 17 goals in the beginning, therefore goals: 1 (no poverty) 3 (Good health and well being), 8 (Decent work and economic growth) and 12 (Responsible consumption and production) are suggested to start with. The study has also shown the importance of transparency to gain full knowledge of how one can act in creating a GSCM and a sustainability strategy. By implementing a GSCM, retailers can work proactively and be prepared for future trends, and supply chain transparency makes it easier for a company to prioritize which aspects that should play a part in their business model. A third-party verification will help the retailer make sure that their business is handled in a more ethical manner. The study also shows that some type of monitoring of the sustainable work is needed to highlight the problems and measure the improvements, this is in line with previous literature such as that of Epstein & Buhovac (2014) stating that measures of improvements is of key importance. The focal company shows good results when looking at sustainable structure and leadership, however the leadership could be further developed for a clear sustainable strategy to take place.

Furthermore, the weight of working proactively with a sustainability strategy is a must for retailers to have an impact on their supply chain and have a system that monitors and measures the externalities created. This study clarifies that the only way of making a change in the supply chain of crystals can be done on the incentives of retailers that take their responsibility to spread the knowledge of the crystals origin and associated activities to

end-consumers. This would in the long-run also contribute to long lasting change within the business, inspire other stakeholders to act and meet growing consumer awareness of healing crystals.

7.1 Contribution

The contribution of this report is to fill in the gap of the knowledge needed to integrate sustainability within the supply chain of crystals. Furthermore, it can in some way fill in the gap between theory and practice of how small-scaled retailers of healing crystals can practice sustainability through their whole supply chain, and how a sustainability strategy can work as a tool in doing that. Even though the study takes a business approach rather than a natural science, it highlights the effect that the industry has on the triple bottom line and meets these issues with suggestions of improvements. Lastly, since this thesis was conducted with a case study, a more comprehensive understanding of the social, environmental and economic aspects has been highlighted. With this contribution hopefully more companies can get incentives to start monitoring and measuring their activities throughout the whole supply chain of crystals.

7.2 Recommendations for future research

The empirical findings have shown that more research can and should be made on how to control and regulate the crystal industry. Firstly, more research should be done of how a certification system could assist in creating a sustainable industry of crystals. How a certification system should be conducted and by whom it should be controlled by, is a suggestion of future research in this area.

Secondly, efficiency in the logistics of the supply chain of crystals is another suggestion of future research. Due to inefficient boat shipping logistics, many shipments face being stuck in customs, traveling back and forth, which results in high costs for suppliers and more emissions.

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APPENDIX

Appendix A: Interview guide

Before conducting the interview, a brief introduction of the authors was made. The topic of this study and problem discussion was presented. Terms like TBL, SDGs, Green supply chain management, supply chain transparency will be explained briefly so that the interviewee will understand the questions more precisely. Permission to record was also asked before starting the interview.

General information

1. Before beginning this interview, do you want your identity to be confidential throughout the report?
2. What is your position in the company?
3. How many years have you been working with supply chains/logistics/transport?
4. Can you describe your primary responsibilities?
5. Please describe the various steps and stages of the supply chain process, to the best of your abilities.
6. What do you consider to be the most important aspects of the supply chain process? The most inefficient?

Sustainability

Throughout this report we will study sustainability from three perspectives: social, economic and environmental.

1. Do you, in your role, work with sustainability? If so, in what ways?
2. How does your business work with social sustainability? For example CSR, work policies, ethical mining, do you check social aspects (labor conditions) etc.
3. How do you define environmental impact for your business? Do you measure environmental impact? Rate of depletion of natural resources, carbon footprint, waste pollution, etc.? Do you have guidelines, environmental aspects, differentiation between countries?

4. Which economic impacts do you see your business generate? Employee opportunities, taxes, costs?
5. What are the most harmful or hazardous impacts in the supply chain of crystals? (environmental, social or economic)
6. Do you see potential in integrating work with the Sustainable development goals down the line of the supply chain? In what ways?

Business model

1. Do you have any department or person responsible for green supply management? This can be used as a strategy to stay in head of threats, trends or changes, is this integrated in your supply chain?
2. Do you monitor and measure the environmental, social, economic impacts that can be drawn from your business activities?

Information strategy

1. Transparency within the supply chain is important to show external parties' measurements and information flow, do you see the supply chain as transparent? Where do you see room for improvement?
2. What's the communication like in the supply chain of crystals, that you know of? (internal and external) How is it to communicate environmental and sustainable standards? How are the questions and requirements being received from other stakeholders in the supply chain?

External factors

1. Are there any regulations within the industry that you know of? Can you give some examples, i.e., main institutions: the EU, Sweden, etc ? Do the regulations differ depending on what country you look at? If not, do you have any restrictions or guidelines?
2. Which sectors or parts of the supply chain do you think is most important to highlight and/or improve in terms of social, economic and environmental sustainability?

Current Situation with SC actors

1. Do retailers today demand ethical and sustainable mining? What aspects do they highlight and talk about when it comes to a sustainable supply chain?

2. Do you think that pressure from retailers could make a change? In forms of compliance obligations, policies, regulation of work environment, payment, and negative externalities?

Future

1. Do you see any future trends: in terms of regulation, bureaucracy, technology?
2. Disruptions: How the pandemic or the current war situation has affected your business? Did you change your sustainable approach due to these unexpected situations?

Appendix B: Interview Guide: Focal Company

During this thesis the focal company and the authors had a continuous dialogue and questions that arose during the process were able to get answered through further meetings or communication through email. Thus the existing interview guide is the first draft that was made and emailed to the focal company before establishing the research question. The first interview has therefore been complemented with ongoing questions that have been in line with Appendix A.

Först och främst vill vi återigen säga ett stort tack till er för att ni vill vara med och hjälpa oss i detta arbete för att öka förståelsen hos producenter och konsumenter av kristall industrin. Vi hoppas på att detta kommer bli ett mycket uppskattat arbete för båda parter och att vi under processens gång kommer kunna utbyta viktig och användbar kunskap sinsemellan.

I vår studie om kristallers leverantörskedja vill vi börja med att undersöka er verksamhet ser ut för att få en överblick. Dessa frågor kommer ge oss större vägledning samt hjälpa oss att precisera våra frågeställningar. Notera att under arbetets gång kommer nya frågor dyka upp som vi antingen kommer försöka få information kring från er eller era underleverantörer, samt stödja med litteratur och teorier.

Leverantörskedjan

1. Hur ser processen ut idag för utvinning av kristaller?
2. Vem ansvarar för utvinning av stenarna?
3. Vilket företag arbetar ni med? Vart är dessa lokaliserade?
4. Hur produceras stenarna?
 - Ex. slipas eller sker någon annan process i tillverkningen innan stenarna skeppas iväg (ex. användning av kemikalier?)
5. Hur förpackas kristallerna inför leverans?
 - Skickas stenarna i plastförpackningar, lådor?
 - Vem sköter paketering?

Hållbarhet

1. Hur arbetar ni med hållbarhet?
2. Har ni någon hållbarhetsansvarig?

Transportering

1. Hur transporteras stenarna till er? Vilket transportmedel används?
 - Flyg? Båt? Hur ofta? Hur stora kvantiteter har fraktats under senaste året 2021?
2. Vem sköter transportation till slutkunden?

Appendix C: List of respondents and interviews

Company	Respondents	Country	Date(s)	Duration	Place and method	Years of experience with supply chain
Retailer	Head of Purchase and e-commerce	Sweden	30/3	40 min	Recorded interview via zoom	2
Supplier	Manager	Germany	4/5	75 min	Recorded interview via zoom	25
Gemrock Peru	Stefan Austermüle, General Manager	Peru	4/5	65 min	Recorded interview via zoom	5